

## APPENDIX 3.2 - EVOLUTION OF SCENARIOS

### Río Jemez Subregion - Río Puerco Subregion - RPyRJ Subregions Combined

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**THE BEST PLANS HAVE:  
CLEAR VISIONS, GOALS, AND ACTION ITEMS**

**The difference among them is explained below:**

**Visions** – are general statements of where the effort wants to go and what it will accomplish over a given time span (usually 10 to 50 years). Visions should be comprehensive enough to capture the thrust of the effort's overall mission.

**Goals** – are less general than visions and describe what is needed to obtain the vision. They refer to components of the overall effort, and are sometimes quantifiable.

**Objectives** – are elaboration of the goals. They describe the types of management or activities that will be undertaken and are quantifiable where possible. Objectives are optional. Some groups may find it confusing to add that additional level of detail.

**Action Items** – are an explanation of who is going to do what, where, and when. They generally articulate how to implement the objectives. They should be quantifiable (if possible), and benchmarks of the existing conditions and/or the indicators should be developed.

## DEVELOPMENT OF MISSION STATEMENT, GOALS, AND ALTERNATIVES

The Río Puerco Steering Committee worked on and revised the mission statement and goals at their March 5th meeting. The Río Jemez Steering Committee further revised, and accepted those revisions at their March 14 meeting. Subsequently, on March 26, 2003, the Río Puerco Steering Committee unanimously accepted the Mission Statement, and Non-Prioritized Goals which had been revised and accepted by Río Jemez Steering Committee. The sequence of drafts for the Mission Statement, Non-Prioritized Goals, and Prioritized Alternatives (Actions) are listed below:

### Evolution of the Mission Statement

#### Original (Phase I):

The Río Puerco y Río Jemez Steering Committee promotes the enhancement of watershed restoration efforts that will benefit communities and its residents by increasing water production and improving water quality.

#### Cañon Revised (February 22, 2003):

The Río Puerco y Río Jemez promote the enhancement of watershed restoration efforts that will benefit communities in our sub-region by improving water retention, quality and conservation.

#### Río Puerco Draft A (March 5, 2003):

The residents of the Río Puerco y Río Jemez sub-watersheds promote a sustainable balance between the availability and use of water, healthy watersheds, and retention of a rural lifestyle to benefit local communities and residents.

#### Río Puerco Draft B (March 5, 2003):

The residents of the Río Puerco (north zone)(y Río Jemez) sub-watershed(s) promote a sustainable balance between the production and use of water, watershed rehabilitation, treaty, water and acequia rights, water and land use education, and retention of a rural lifestyle to benefit local communities and residents.

#### Final Mission Statement (accepted March 14 by Jemez, and March 26 by Puerco)

***The residents of the Río Puerco y Río Jemez sub-watersheds promote a sustainable balance between the availability and use of water, promote healthy watersheds, and promote retention of a rural lifestyle to benefit local communities and residents.***

### Evolution of Goals

#### Original (Phase I):

1. Manage the watersheds for increased water production and improved water quality
2. Insure that traditional values and use of water are preserved
3. Educate all citizens about the need to use water wisely

4. Provide for reaching public participation in the water planning process
5. Promote the conservation of water and incorporate these concepts in the local schools' curriculum

Draft (February 22, 2003 Cañon and Cuba Workshops)

1. Ensure treaty, water and acequia rights to preserve and protect local agricultural traditions
2. Restore and manage the watersheds on public and private land to enhance water production, retention, and quality, to reduce the threat of wildfire, and to preserve natural systems dependent on water
3. Retain land use patterns that support and ensure a rural lifestyle and economy
4. Provide education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water. These concepts should be incorporated into the curriculum of area schools'
5. Support the cultural and spiritual values of water, and the universal need for and importance of water
6. Create a committee to oversee public participation in the implementation of the water plan

Final Non-Prioritized Goals (accepted March 14 Jemez, and March 26 Puerco)

- *Restore and manage the watersheds on public and private land to enhance water production, retention, and quality, to reduce the threat of wildfire, and to preserve natural systems dependent on water*
- *Support the cultural and spiritual values of water, and the universal need for and importance of water*
- *Ensure treaty, water and acequia rights to preserve and protect local agricultural traditions*
- *Retain land use patterns that support and ensure a rural lifestyle and economy*
- *Promote the conservation of water*
- *Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water. These concepts should be incorporated into the curriculum of area schools*
- *Provide for monitoring the implementation of the water plan*

## Evolution of Alternatives

Original Water Management Alternatives (Actions) (Phase I)

The list can be found on pages 12.9-1 and 12.9-2.

<u>Prioritized Water Management Alternatives (Actions)</u>	<u>Total number of Votes</u>		
	<u>Cuba</u>	<u>Cañon</u>	<u>Total</u>
➤ Protect Water Rights	17	25	42
➤ Manage and Restore our Watersheds	11	15	26
➤ Manage Growth and Land Use Together	7	19	26

➤ Reduce Water Demand	4	8	12
➤ Increase Water Storage Capacity in Rural Areas	6	4	10
➤ Manage Drought	9	0	9
➤ Reuse Wastewater (Graywater)	2	3	5
➤ Identify fire-fighting water	4	-	4
➤ Prohibit sale of water from region	2	-	2
➤ Implement Public Education Program	1	-	1
➤ Install Domestic Supply Wells	1	0	1
➤ Reduce Water Loss in Acequias	1	0	1
➤ Capture Flood Flows	0	0	0
➤ Use Surface and Groundwater in Combination	0	0	0
➤ Remove Trace Elements From Water (increase supply)	0	0	0

**Common Alternatives between Jemez/ Rio Puerco Subregion  
and applying alternatives analyzed in Middle Rio Grande Region**

<b>1. Manage and restore our watersheds.</b>	A66, p.6 A1, p.8 (change to riparian) A2, p.59 **A33, p.58
2. Reduce water demand.	Urban or General: A18, p.22 A21, p.24 A22, p.26 A56, p.28 (applies to all) Agriculture: A7, p.30 A10, p.32 A11, p.36
3. Increase water storage capacity in rural areas.	
4. Reduce water loss in acequias.	A9, p.34 A60, p.66
<b>5. Protect water rights.</b>	A63, p.42
6. Use surface and groundwater in combination.	A144, p.44
7. Manage growth and land use together.	A30, p.38 A28, p.40 (change to opposite) A52, p.52
8. Manage drought.	
9. Capture flood flows..	A34, p.60
10. Reuse wastewater (gray)	A24, p.16 A26 p.48 A27, p.18
11. Remove trace elements from water to increase supply.	A47, p.46
12. Install domestic supply wells. No comment.	A8, p.64 A61, p.65

Note: Boldface items received highest priority in workshop

Judith Isaacs  
Rev. 3/18/03

## **Water Assembly Alternatives used in our Scenarios - (only a start)**

A-7 Meter and manage surface water distribution flows through all irrigation systems to conserve water. Allows the accurate measurement of permitted water use and associated losses. Metering by itself may encourage conservation & support claims.- Under Goal 3

A-8 Meter all water supply wells, including domestic wells, throughout the water planning region. Under the current system, domestic wells owners are allowed up to 3 acre-feet per year. Metering is not required so there is no way to monitor actual water use. Once the amount of water being used is known, there may be an incentive to use less of it, plus pre-existing withdrawal could be easier to define & protect.- Under Goal 5

A-30 Adopt policies to integrate land use planning and water resource management in all government jurisdictions in the Middle Rio Grande water planning region. Take water supply limitations into account when making land use development decisions. Develop mechanisms for local governments to adopt policies that coordinate water impact considerations with all land development and other uses of water.- Under Goal 4

A-61 Reduce the allowed pumping from domestic wells and restrict drilling of domestic wells where surface waters or the aquifer could be impaired. This alternative requires that well metering be in place. Unrestricted groundwater removal can decrease surface flows, deplete aquifers, & diminish pre-existing access.- Under Goal 5

A-63 Change state water law to include in-stream flow as a beneficial use. Under current law, to maintain a water right, you must put it to beneficial use. Water flowing in the river, known as "in-stream flow," has not been declared a beneficial use in New Mexico. However, the health of the river affects ground water levels, as well as plants and animals that live in the river (riparian) environment. By determining beneficial use of an acequia or natural stream to include in-stream flow there would be some legal protection for maintaining riparian areas by simply permitting water to flow in its course.- Under Goal 3

A-69 Acquire additional water rights without condemnation from various sources from within or outside the water-planning region, and import water from other basins where possible. Under NM law, water rights are a property right and can therefore be condemned if it is in the public interest to appropriate the water for another use. It is becoming increasingly difficult to find willing sellers and the cost to purchase and transfer water from place to place is quite high.- NO.

A-71 Identify, quantify, and adjudicate all surface water rights and the order of wet water utilization in the water planning region. Adjudication is the legal process of reviewing all surface water rights claims in an area to determine which are actually defensible. The process results in a clear accounting of how much surface water may be used and by whom. Currently, on average, there are more claims than there is water, so this process would clarify who must stop using water during a water shortage - Under Goal 3.

A-144 Address groundwater/surface water interactions in the statutes for administering water rights. There is a connection between surface water and shallow ground water. That is, by

extracting groundwater, surface water will percolate down to the shallow groundwater and "fill in" the volume of water that has been pumped. This interaction has a time lag and will not be immediately observable. For groundwater wells near the river, the effect may take days or weeks depending on the separation distance. For groundwater wells further away, the effect could take weeks or years. One example of the need for this accounting of the interaction of surface water and groundwater is that a junior water rights holder who has pumped groundwater, could later "infringe" on the water supply to senior surface rights holders, particularly during a time of drought.- Under Goal 3

Also Could Use/Used, need to finish:

A1	p.8 (change to riparian
A2	p.59
A9	p.34
A10	p.32
A11	p.36
A18	p.22
A21	p.24
A22	p.26
A24	p.16
A26	p.48
A27	p.18
A28	p.40 (change to opposite
A33	p.58
A34	p.60
A38	
A36	
A44	
A45	
A47	p.46
A52	p.52
A53	
A56	p.28 (applies to all)
A58	
A60	p.66
A66	p.6
A73	



**RPYRJ SUBREGIONAL ALTERNATIVES FROM MRG ALTERNATIVES**

<b>Alternative Actions from MRG Workbook</b>	<b>Alt. Id No.</b>	<b>Page No.</b>	<b>MRG Definitions</b>	<b>Modified Definition by RPyRJ Subregions</b>
<i>Soil and Vegetation Management</i>	A-33	58	Establish erosion prevention measures and use soil and vegetation management techniques to reduce runoff and increase infiltration throughout the watershed, including forested mountains and uplands.	Include grazing management practices; add noxious weeds; forest & rangeland
<i>Bosque Management</i>	A-1	8	Restore Bosque habitat and manage vegetation in the Bosque to reduce evapotranspiration by selectively removing vegetation and promoting native plants	Widen definition from bosque to riparian; add noxious weeds
<i>Low-Water Crops</i>	A-11		Develop markets for locally-grown produce, and low-water alternative crops.	
2	A-143		Encourage active water resource management by the State Engineer (OSE/ISC).	
<i>Conjunctive Management</i>	A-144		Address groundwater/surface water interactions in the statutes for administering water rights	
<i>Preserve Deep Water for Drinking</i>	A-15		Preserve, but continue to draw, deep-well water for drinking purposes only	
1	A-26		Expand use of centralized wastewater collection and treatment systems into all areas of urban and suburban development within the water planning region.	
<i>In-Fill/Density</i>	A-28	40	Increase building densities (as compared to typical suburban density) and infill development through adoption of local government land use policies and regulations.	
<i>In-Fill/Density</i>	A-28		Increase building densities (as compared to typical suburban density) and infill development through adoption of local government land use policies and regulations.	
<i>Land Use</i>	A-30	38	Adopt policies to integrate land use and transportation planning and water resource management in all government jurisdictions in the Middle Rio Grande water planning region.	
<i>Land Use</i>	A-30		Adopt policies to integrate land use and transportation planning and water resource management in all government jurisdictions in the Middle Rio Grande water planning region.	
(5) 6	A-47		Identify, protect and monitor areas vulnerable to contamination (quality issue) and restrict groundwater supply wells in sensitive areas.	
(1) 17	A-50		Enforce wellhead protection programs on all public water supply wells within local government jurisdictions.	
4	A-51		Establish more equitable accounting for evaporative losses in Rio Grande Compact water.	
<i>Growth Management</i>	A-52	52	Develop a sustainable and coordinated growth management plan for adoption	Maintain low density in the rural areas

			and implementation by local governments in the middle Rio Grande region in order to: 1) reduce water consumption; 2) minimize impact on water resources; 3) encourage conservation-oriented economic development and 4) ensure adequate water supplies for any proposed development.
(4)	7	A-52	Develop a sustainable and coordinated growth management plan for adoption and implementation by local governments in the middle Rio Grande region in order to: 1) reduce water consumption; 2) minimize impact on water resources; 3) encourage conservation-oriented economic development and 4) ensure adequate water supplies for any proposed development.
(3)	9	A-53	Through open and inclusive processes, ensure public involvement in water planning by continuing regular public information/dissemination programs and public relations campaigns, and citizen planning committees. Keep the public engaged in this process.
	1	A-58	Water Funding - Establish dedicated and continuing funding for Regional Water Planning as an ongoing process and as a basis for water management at local, regional and state levels.
	0	A-59	Establish a State-based water severance tax for water projects, planning and conservation.
<i>Instream Flow</i>		A-63	Change state water law to include in-stream flow as a beneficial use.
<i>Watershed Plans</i>		A-66	6 Implement local and regional watershed management plans through all land and water agencies in the planning area
	0	A-67	Establish a regional water management authority to provide professional water resource management and to administer or assist in a water banking program.
(2)	11	A-71	Identify, quantify, and adjudicate all water rights and the order of wet water utilization in the water-planning region.
	0	A-73	Establish and integrate a regional Geographical Information System (GIS) database of publicly accessible information on water resources and photo imagery covering the water planning region.

## RIO JEMEZ SUBREGION SCENARIO SEQUENCE

- Agriculture/Ranching
- Environmental Perspective
- Exurban/Suburban/Development/ Growth
- Three Scenarios Combined With Alternatives And Objectives
- Draft Combined Scenario

### **Río Jemez Agricultural and Ranching Vision Statement (March 2003)**

Agriculture and ranching is a part of the whole ecosystem.

For us, it is both a part of our livelihood and of our culture.

We highly value the rural nature of the region.

Our group would like to see that agriculture and ranching continue to function as an integral part of our region.

To ensure that, we want to maintain the current livestock numbers and the number of acres being tilled.

We want to implement management practices that are environmentally friendly and sustainable

We also want to maintain diversity of wildlife and livestock.

Many acequias exist in our valley, and have been here for several generations.

We want to maintain the tradition of acequias, including their priority of right-of-way.

*[What about including the concept of acequia water banking since the Governor signed the law allowing such -- see below. That could also be included as an objective.]*

Zia and Jemez Pueblos, while enjoying their own traditions, also are a part of our community (to be filled in)

The growing of crops has not been lost)

Not so long ago, vegetables and fruits were grown throughout the valley.

Now, the reality is that many of us have to work off the land in order to maintain it.

So that future generations can continue to farm and ranch, we want to encourage local farmer markets.

Community gardens could be a way to share our knowledge with folks who are not farmers by trade.

As stewards, we recognize the importance of nurturing the land and husbanding the water.

We look forward to new technology to enhance our conservation of water and preserve the land.

Like others in the valley, the paving and building on agricultural lands is of concern.

In order to protect the health of the environment and to assure that land stays in agriculture, we would like to see land use management tools implemented to protect the lands from development.

To assist future generations in learning about water, agencies such as Cuba Soil and Water Conservation District will partner with the school district to create a Natural Resource Educational Program.

Elements of our vision:

- Maintain the current livestock numbers and the number of acres being tilled.
- Implement management practices that are environmentally friendly and sustainable.
- Maintain diversity of wildlife and livestock.
- Maintain the tradition of acequias, including their priority of right-of-way.
- Utilize new technology to enhance conservation of water and preservation of the land.
- Encourage local farmer markets to benefit our area and to enable future generations to farm and ranch.
- Share our knowledge with folks who are not farmers by trade by creating opportunities, such as community gardens.
- Implement land use management tools to protect the agricultural lands from development.

- To assist future generations in learning about water, partner with the school district to create a Natural Resource Educational Program.
- Zia and Jemez Pueblos, while enjoying their own traditions, also are a part of our community (to be filled in)

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## **Río Jemez Agricultural and Ranching Vision Statement April 3 draft; April 22 additions**

Agriculture and ranching is a part of the whole ecosystem. For us, it is both a part of our livelihood and of our culture. We highly value the rural nature of the region.

Our group would like to see that agriculture and ranching continue to function as an integral part of our region. To ensure that, we want to maintain the current livestock numbers and the number of acres being tilled. We want to implement management practices that are environmentally friendly and sustainable. We also want to maintain diversity of wildlife and livestock.

Many acequias exist in our valley, and have been here for several generations. We want to maintain the tradition of acequias, including their priority of right-of-way.

Zia and Jemez Pueblos, while enjoying their own traditions, also are a part of our community. ... (to be filled in) (The growing of crops has not been lost).

Not so long ago, vegetables and fruits were grown throughout the valley. Now, the reality is that many of us have to work off the land in order to maintain it. So that future generations can continue to farm and ranch, we want to encourage local farmer markets. Community gardens could be a way to share our knowledge with folks who are not farmers by trade.

As stewards, we recognize the importance of nurturing the land and husbanding the water. We look forward to new technology to enhance our conservation of water and preserve the land.

Like others in the valley, the paving and building on agricultural lands is of concern. In order to protect the health of the environment and to assure that land stays in agriculture, we would like to see land use management tools implemented to protect the lands from development.

To assist future generations in learning about water, agencies such as Cuba Soil and Water Conservation District will partner with the school district to create a Natural Resource Educational Program.

### **Agriculture/Ranching Scenario Team**

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### **Cultural/Religious/Acequia Scenario Team**

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## **Río Jemez Agricultural and Ranching Vision Statement (May 2003)**

Agriculture and ranching is a part of the whole ecosystem. For us, it is both a part of our livelihood and of our culture. We highly value the rural nature of the region. Our group would like to see that agriculture and ranching continue to function as an integral part of our region. As stewards, we recognize the importance of nurturing the land and husbanding the water.

Elements of our vision:

- Maintain the current livestock numbers and the number of acres being tilled.
- Implement management practices that are environmentally friendly and sustainable.
- Maintain diversity of wildlife and livestock.
- Maintain the tradition of acequias, including their priority of right-of-way.
- Utilize new technology to enhance conservation of water and preservation of the land.
- Encourage local farmer markets to benefit our area and to enable future generations to farm and ranch.
- Share our knowledge with folks who are not farmers by trade by creating opportunities, such as community gardens.
- Implement land use management tools to protect the agricultural lands from development.
- To assist future generations in learning about water, partner with the school district to create a Natural Resource Educational Program.
- Zia and Jemez Pueblos, while enjoying their own traditions, also are a part of our community. (to be filled in)

### **Agriculture/Ranching Scenario Team**

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### **Cultural/Religious/Acequia**

Peter Pino  
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<b>AGRICULTURAL AND RANCHING SCENARIO (6-17-03)</b>		
<b>Goals</b>	<b>Objectives</b>	<b>Actions</b>
Restore and manage the watersheds on public and private land to enhance water production, retention, and quality, to reduce the threat of wildfire, and to preserve natural systems dependent on water	Maintain agriculture and ranching as a part of the whole ecosystem	
	Implement management practices that are environmentally friendly and sustainable	
	Maintain diversity of wildlife and livestock	
Support the cultural and spiritual values of water, and the universal need for and importance of water		
Ensure treaty, water and acequia rights to preserve and protect local agricultural traditions	Maintain agriculture and ranching as a part of both our livelihood and our culture	
	Maintain the traditions of Zia and Jemez Pueblos while including them in the greater Rio Jemez community	
	Maintain the tradition of acequias	Acequia water banking
	Maintain the system of acequias, including their priority of right-of-way, that have existed in the valley for several generations	
	Protect agricultural lands from development, reduce paving over and building on agricultural lands	Implement land use management tools
Retain land use patterns that support and ensure a rural lifestyle and economy	Maintain the rural nature of the subregion with agriculture and ranching as an integral part	Maintain the numbers of livestock and tilled acres that best benefits the environment and economy together
	Maintain the growing of vegetables and fruits throughout the valley	Encourage local farmer markets
	Create an economy which would not require us to work off the land in order to maintain it	
	Create an economy which would enable future generations to farm and ranch.	
Promote the conservation of water	Enhance conservation of water and preservation of the land	Utilize new technologies
Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water. These concepts should be incorporated into the curriculum of area schools	Share local knowledge concerning the importance of stewardship as nurturing the land and husbanding the water	
	Share local agriculture knowledge with folks who are not farmers by trade	Create Community Gardens
	Assist future generations in learning about water	Create a Natural Resource Educational Program [partner the school district with agencies such as Cuba Soil and Water Conservation District]
Provide for monitoring the implementation of the water plan		

**AGRICULTURAL AND RANCHING SCENARIO (6-20-03)**

<b>Goals</b>	<b>Objectives</b>	<b>Actions</b>
Restore and manage the watersheds on public and private land to enhance water production, retention, and quality, to reduce the threat of wildfire, and to preserve natural systems dependent on water	Maintain agriculture and ranching as a part of the whole ecosystem	
	Implement management practices that are environmentally friendly and sustainable	
Support the cultural and spiritual values of water, and the universal need for and importance of water		
Ensure treaty, water and acequia rights to preserve and protect local agricultural traditions	Maintain tribal traditions while including them in the greater subregional communities	
	Maintain agriculture and ranching as a part of both our livelihood and our culture	Form lobbying group/local Acequia Assoc/Ag Assoc
	Maintain the tradition of acequias	Acequia water banking
	Maintain the integrity of acequias systems that have existed for several generations	Protect acequia priority of right-of-way. Assessment fee if land removed from system.
	Protect agricultural lands from development	Implement land use management tools that prevent paving over and building on agricultural lands
Retain land use patterns that support and ensure a rural lifestyle and economy	Maintain the rural nature of the subregion with agriculture and ranching as an integral part	Maintain the numbers of livestock and tilled acres that best benefits the environment and economy together
	Maintain a wide diversity of crops throughout the subregions	Create and maintain local farmer markets. Promote and encourage use of local crops.
	Create an economy which would not require us to work away from the land in order to maintain it	
	Create an economy which would enable future generations to farm and ranch.	
Promote the conservation of water	Enhance conservation of water and preservation of the land	Utilize new technologies
Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water. These concepts should be incorporated into the curriculum of area schools	Assist future generations in learning about water	Create a Natural Resource Educational Program [partner the school district with agencies such as Cuba Soil and Water Conservation District]
	Educate folks who are not farmers by trade	Share local agriculture knowledge
	Educate folks about the importance of land and water stewardship	Share local knowledge about stewardship as nurturing the land and husbanding the water
		Create Community Gardens
Provide for monitoring the implementation of the water plan		



### **Río Jemez Environmental Perspective Vision Statement (March, 2003)**

The environmental vision reflects a shift in attitude from exploitation of the land to stewardship of forests, rangeland and riparian areas. The greatest amount of plant and animal diversity is preserved in a healthy ecosystem.

Key elements of the plan will--

- base planning for watershed restoration on the entire ecosystem
- create a forest with a diversity of species and sizes
- keep people on the land by integrating conservation and environmental issues with best management practices in forestry and ranching
- tie regional land-use planning to demonstrated availability of water
- implement treatments that preserve the greatest amount of biological diversity (domestic and wild) while restoring ecosystem integrity
- institute incentives in both rural and urban areas for water conservation and recycling
- include cost of environmental damage in assessing alternatives

Judith Isaacs, Becky Christman

### **Río Jemez Environmental Perspective Vision Statement (rev. April 2, 2003)**

The environmental vision reflects a shift in attitude from exploitation of the land to stewardship of forests, rangeland and riparian areas.

Our children and their children will have the economic and spiritual benefits of ancient forests, free-flowing rivers, living deserts and the abundance of life flourishing in all these areas.

The greatest amount of plant and animal diversity is preserved in a healthy ecosystem. Consistent with local history and traditions and our land-based economy (including tourism), the future water plan enhances social and economic resources in the Jemez/Rio Puerco sub-region.

Management of public and private lands ensures healthy watershed, protects and improves riparian systems, maintains healthy and productive plant and animal communities (including threatened and endangered species) and guarantees good water quality.

This will be accomplished, in part, by education in water use/reuse and managing growth by geographical or numerical limits on population.

Key elements of the plan will--

- base planning for watershed restoration on the entire ecosystem
- create a forest with a diversity of species and sizes
- keep people on the land by integrating conservation and environmental issues with best management practices in forestry and ranching
- tie regional land-use planning to demonstrated availability of water

- implement treatments that preserve the greatest amount of biological diversity (domestic and wild) while restoring ecosystem integrity
- institute incentives in both rural and urban areas for water conservation and recycling
- include cost of environmental damage in assessing alternatives

Judith Isaacs, Becky Christman

### **Environmental Perspective Vision Statement (rev. April 28, 2003)**

The environmental vision reflects a shift in attitude from exploitation of the land to stewardship of forests, rangeland and riparian areas. Our children and their children will have the economic and spiritual benefits of ancient forests, free-flowing rivers, living deserts and the abundance of life flourishing in all these areas. The water plan preserves the greatest amount of biological diversity (domestic and wild) while restoring and maintaining a healthy ecosystem. The water plan protects local history and traditions and our land-based economy (including tourism). We envision keeping people on the land by integrating conservation and environmental issues with best management practices in forestry, ranching and agriculture.

In the environmental vision, management of public and private lands includes the following:

- maintains healthy and productive plant and animal communities (including threatened and endangered species)
- controls growth by geographical or numerical limits on population
- ensures a healthy watershed
- guarantees good water quality
- educates citizens in water use/reuse

Judith Isaacs, Becky Christman

<b>ENVIRONMENTAL PERSPECTIVE SCENARIO (6-17-03)</b>		
<b>Goals</b>	<b>Objectives</b>	<b>Actions</b>
Restore and manage the watersheds on public and private land to enhance water production, retention, and quality, to reduce the threat of wildfire, and to preserve natural systems dependent on water	Shift attitudes from exploitation of the land to stewardship of forests, rangeland and riparian areas to restore ecosystem integrity	Integrate conservation and environmental issues with best management practices in forestry and ranching
	Ensure a healthy watershed, protect and improve riparian systems, maintain healthy and productive plant and animal communities, and guarantee good water quality	
	Preserve the greatest amount of biological diversity	Initiate treatments that create a forest with a diversity of species and size classes
Support the cultural and spiritual values of water, and the universal need for and importance of water	Realize the spiritual benefits of ancient forests, free-flowing rivers, living deserts and the abundance of life flourishing in all these areas as well as the economic benefits	
Ensure treaty, water and acequia rights to preserve and protect local agricultural traditions	Enhance social and economic resources consistent with local history and traditions and a land-based economy, including tourism	
Retain land use patterns that support and ensure a rural lifestyle and economy	Allow people to remain on the land	Implement treatments that preserve both rural and urban areas
	Future growth based on the entire ecosystem	Include the cost of environmental damage when assessing alternatives
	Regional planning	Tie land-use to demonstrated availability of water Managing growth by putting geographical or numerical limits on the population
Promote the conservation of water		Institute incentives for water conservation and recycling
Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water. These concepts should be incorporated into the curriculum of area schools	Educate about ways to wisely use and reuse water	
Provide for monitoring the implementation of the water plan		

ENVIRONMENTAL PERSPECTIVE SCENARIO (6-20-03)		
Goals	Objectives	Actions
Restore and manage the watersheds on public and private land to enhance water production, retention, and quality, to reduce the threat of wildfire, and to preserve natural systems dependent on water	Promote an attitude of stewardship of the ecosystems' integrity.	Integrate conservation and environmental issues with best management practices.
		Include forests/forestry, rangelands/ranching and wetland/riparian areas.
		Protect and improve wetland/riparian systems
	Ensure good water quality	
	Preserve the greatest amount of biological diversity.	Initiate treatments that create an ecosystem with a diversity of species, size classes, and ages.
		Maintain healthy and productive plant and animal communities.
Support the cultural and spiritual values of water, and the universal need for and importance of water	Realize the spiritual benefits of ancient forests, free-flowing rivers, living deserts and the abundance of life flourishing in all these areas, aside from the economic benefits.	
Ensure treaty, water and acequia rights to preserve and protect local agricultural traditions	Enhance social and economic resources consistent with local history and traditions, and a land-based economy (including tourism)	
Retain land use patterns that support and ensure a rural lifestyle and economy	Ensure regional planning.	Implement land use plans that preserve both rural and urban areas.
		Manage growth by putting geographical or numerical limits on the population.
	Base land use and growth on the entire ecosystem.	Tie land-use to demonstrated availability of water.
		Include the cost of environmental damage when assessing alternatives.
Promote the conservation of water		Institute incentives for water conservation and recycling
Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water. These concepts should be incorporated into the curriculum of area schools		Educate about ways to wisely use and reuse water.
Provide for monitoring the implementation of the water plan		

## **Río Jemez Exurban/Suburban/Development/Growth Vision Statement (3/18/03)**

In the next 5-10 years one can imagine a vision in which better-planned regional suburban growth occurs in the Jemez and Nacimiento mountain areas to the north of Rio Rancho and Albuquerque. This growth would gently interact with the existing rural pueblo and ranching lifestyles allowing the area to maintain cultural and religious traditions as well as to maintain the environment. (50 years ...)

The vision includes the following elements:

- Immigration of people to this area to work in clean (eco-friendly) industries nearby
- Continuation of full-time and hobby ranches mixed with new residential dwellings (some loss of agricultural land is inevitable)
- Regional growth planning/zoning with rural as well as urban focus and with water as a consideration
- Maintenance of tribal, religious, and cultural traditions partly via education of newcomers and visitors
- Maintenance of ecological and scenic conditions which have attracted us
- Educational packages made available at Pueblo and Forest Service. Seminars/courses at school
- Mandatory water conservation for farming/ranching and residential uses
- Modernized, well-maintained municipal water systems cooperating with each other
- Tax breaks for installation of gray water and rainwater roof runoff capture

L. Rodgers 3/18/03

### Group additions on April 22:

- We don't want to get into limited choices. Continue uses into the future.
- We want it so that you don't lose your water if you return it to the river.
- We want to keep the water so we have flexibility in the future.
- Water stays with the land.

Dennis Smith

## **Río Jemez Exurban/Suburban/Development/Growth Vision Statement Revised**

In the next 5-10 years one can imagine a vision in which better-planned regional suburban growth occurs in the Jemez and Nacimiento mountain areas to the north of Albuquerque. This plan would try to encourage areas of higher density where there is the most water available, so that water rights need not be transferred. North of Rio Rancho, this growth would gently interact with the existing rural pueblo and ranching lifestyles allowing the area to maintain cultural and religious traditions as well as to maintain the environment. Education of increasing newcomers and tourists will help to minimize conflicts. Water use will be coordinated among

the various municipal water systems and the pueblos and conservation practices (ranching and domestic) will be mandatory.

The vision includes the following elements:

- Immigration of people to this area to work in clean (eco-friendly) industries nearby
- Continuation of full-time and hobby ranches mixed with new residential dwellings (some loss of agricultural land is inevitable)
- Regional growth planning/zoning with rural as well as urban focus and with water as a consideration
- Maintenance of tribal, religious, and cultural traditions partly via education of newcomers and visitors
- Maintenance of ecological and scenic conditions which have attracted us
- Educational packages made available at Pueblo and Forest Service. Seminars/courses at school
- Mandatory water conservation for farming/ranching and residential uses
- Modernized, well-maintained municipal water systems cooperating with each other
- Tax breaks for installation of gray water and rainwater roof runoff capture

L. Rodgers

Group additions on April 22:

- We don't want to get into limited choices. Continue uses into the future.
- We want it so that you don't lose your water if you return it to the river.
- We want to keep the water so we have flexibility in the future.
- Water stays with the land.

Larry Rodgers  
Dennis Smith

**Río Jemez Exurban/Suburban/Development/Growth Vision Statement (5/2003)**

In the next 5-10 years one can imagine a vision in which better-planned regional suburban growth occurs in the Jemez and Nacimiento mountain areas to the north of Albuquerque. This plan would try to encourage areas of higher density where there is the most water available, so that water rights need not be transferred.

North of Rio Rancho, this growth would gently interact with the existing rural pueblo and ranching lifestyles allowing the area to maintain cultural and religious traditions as well as to maintain the environment.

Education of increasing newcomers and tourists will help to minimize conflicts.

Water use will be coordinated among the various municipal water systems and the pueblos and conservation practices (ranching and domestic) will be mandatory.

The vision includes the following elements:

- Immigration of people to this area to work in clean (eco-friendly) industries nearby
- Continuation of full-time and part-time ranches mixed with new residential dwellings (some loss of agricultural land is inevitable)
- Regional growth planning/zoning with rural as well as urban focus and with water as a consideration
- Maintenance of tribal, religious, and cultural traditions partly via education of newcomers and visitors
- Maintenance of ecological and scenic conditions which have attracted us
- Educational packages made available at Pueblo and Forest Service. Seminars/courses at school
- Mandatory water conservation for industrial, farming/ranching and residential uses
- Modernized, well-maintained municipal water systems cooperating with each other
- Tax breaks for installation of gray-water and rainwater roof runoff capture
- We don't want to get into limited choices. Continue uses into the future.
- We want it so that you don't lose your water if you return it to the river.
- We want to keep the water so we have flexibility in the future.
- Water stays with the land.

Larry Rodgers  
Dennis Smith

<b>EXURBAN/SUBURBAN/DEVELOPMENT/GROWTH SCENARIO (6-17-03)</b>		
<b>Goal</b>	<b>Objective</b>	<b>Action</b>
Restore and manage the watersheds on public and private land to enhance water production, retention, and quality, to reduce the threat of wildfire, and to preserve natural systems dependent on water	Maintenance of ecological and scenic conditions which have attracted us	
	Maintain the environment	
Support the cultural and spiritual values of water, and the universal need for and importance of water	Maintain cultural and religious traditions	Growth would gently interact with the existing rural pueblo and ranching lifestyles
	Maintain tribal, religious, and cultural traditions	
Ensure treaty, water and acequia rights to preserve and protect local agricultural traditions	Water stays with the land	Continuation of full-time and part-time ranches mixed with new residential dwellings (some loss of agricultural land is inevitable)
	So water rights need not be transferred	We want it so that you don't lose your water if you return it to the river
	We don't want to get into limited choices	We want to keep the water so we have flexibility in the future
Retain land use patterns that support and ensure a rural lifestyle and economy	Regional growth planning/zoning	Better-planned regional suburban growth
		Growth has a rural as well as urban focus
		Growth with water as a consideration
		Immigration of people to this area to work in clean, eco-friendly, nearby industries
		Encourage areas of higher density
		Encourage growth where water is most available
Promote the conservation of water		Mandatory water conservation for industrial, farming/ranching and residential uses
		Tax breaks for installation of gray-water and rainwater roof runoff capture
		Coordinate water use among the various municipal water systems and the pueblos
		Cooperation among modernized, well-maintained municipal water systems
Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water. These concepts should be incorporated into the curriculum of area schools	Minimize conflicts between increasing newcomers/tourists and long time residents	Education newcomers and visitors
		Educational packages made available at Pueblo and Forest Service
		Seminars/courses at school
Provide for monitoring the implementation of the water plan		



<b>EXURBAN/SUBURBAN/DEVELOPMENT/GROWTH SCENARIO (6-20-03)</b>		
<b>Goal</b>	<b>Objective</b>	<b>Action</b>
Restore and manage the watersheds on public and private land to enhance water production, retention, and quality, to reduce the threat of wildfire, and to preserve natural systems dependent on water	Maintain the ecological conditions which attracted us here.	None
	Maintain the scenic conditions which attracted us here.	None
Support the cultural and spiritual values of water, and the universal need for and importance of water	Maintain the local cultural and religious traditions.	None
Ensure treaty, water and acequia rights to preserve and protect local agricultural traditions	Keep water with the land.	Water rights are not lost if water is kept in or returned to the river. Water rights need not be transferred?
	Respect existing rural, tribal and farming/ranching lifestyles.	Planning would require any growth to consider impacts on traditional cultures and lifestyles.
	Protect the option to pursue farming/ranching full or part-time.	Residential dwellings inter-mixed with ranches could make loss of agricultural land inevitable.
Retain land use patterns that support and ensure a rural lifestyle and economy	Regional growth/planning/zoning based on entire ecosystem.	Growth in suburban/rural areas is better planned. Growth plans require consideration of water.
	Prevent planning that requires commuting.	Encourage areas of higher density with clean, eco-friendly, nearby businesses/industries.
	The County's focus does not dwell entirely on urban growth.	Growth has a rural as well as an urban focus.
Promote the conservation of water	Keep local water local to allow flexibility and not limit future choices.	Mandatory water conservation for all water uses. Tax incentives for installation of gray-water and runoff capture.
	Coordination/cooperation of water use among area water systems.	Create an Inter-water-systems Board.
	Modernized, well-maintained water systems.	None
Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water. These concepts should be incorporated into the curriculum of area schools	Minimize misunderstandings between newcomers/tourists and long time residents.	Educate newcomers and visitors about local traditions and lifestyles.
		Make educational packages available at Pueblo and Forest Service offices.
		Provide seminars/courses at local schools.
Provide for monitoring the implementation of the water plan	None	None

**DRAFT RIO JEMEZ SUB-REGIONAL SCNEARIO: 2003-2050 (6/20/03)**

<b>Goal: Restore and manage the watersheds on public and private land to enhance water production, retention, and quality, to reduce the threat of wildfire, and to preserve natural systems dependent on water.</b>					
<b>A&amp;R Objectives</b>	<b>A&amp;R Actions</b>	<b>En Objectives</b>	<b>En Actions</b>	<b>ESGD Objectives</b>	<b>ESGD Actions</b>
Maintain agriculture and ranching as a part of the whole ecosystem	None	Promote an attitude of stewardship of the ecosystems' integrity.	Integrate conservation and environmental issues with best management practices.	Maintain the ecological conditions which attracted us here.	None
			Include forests/forestry, rangelands/ranching and wetland/riparian areas.		
			Protect and improve wetland/riparian systems		
			Ensure good water quality		
Implement management practices that are environmentally friendly and sustainable	None	Preserve the greatest amount of biological diversity.	Initiate treatments that create an ecosystem with a diversity of species, size classes, and ages.	Maintain the scenic conditions which attracted us here.	None
			Maintain healthy and productive plant and animal communities.		

<b>Goal: Support the cultural and spiritual values of water, and the universal need for and importance of water</b>					
<b>A&amp;R Objectives</b>	<b>A&amp;R Actions</b>	<b>En Objectives</b>	<b>En Actions</b>	<b>ESGD Objectives</b>	<b>ESGD Actions</b>
None	None	Realize the spiritual benefits of ancient forests, free-flowing rivers, living deserts and the abundance of life flourishing in all these areas, aside from the economic benefits.	None	Maintain the local cultural and religious traditions.	None

<b>Goal: Ensure treaty, water and acequia rights to preserve and protect local agricultural traditions</b>					
<b>A&amp;R Objectives</b>	<b>A&amp;R Actions</b>	<b>En Objectives</b>	<b>En Actions</b>	<b>ESGD Objectives</b>	<b>ESGD Actions</b>
Maintain tribal traditions while including them in the greater subregional communities	None	Enhance social and economic resources consistent with local history and traditions, and a land-	None	Keep water with the land.	Water rights are not lost if water is kept in or returned to the river.

<b>Goal: Ensure treaty, water and acequia rights to preserve and protect local agricultural traditions</b>					
<b>A&amp;R Objectives</b>	<b>A&amp;R Actions</b>	<b>En Objectives</b>	<b>En Actions</b>	<b>ESGD Objectives</b>	<b>ESGD Actions</b>
		based economy (including tourism)			Water rights need not be transferred?
Maintain agriculture and ranching as a part of both our livelihood and our culture	Form lobbying group/local Acequia Assoc/Ag Assoc			Respect existing rural, tribal and farming/ranching lifestyles.	Planning would require any growth to consider impacts on traditional cultures and lifestyles.
Maintain the tradition of acequias	Acequia water banking			Protect the option to pursue farming/ranching full or part-time.	Residential dwellings inter-mixed with ranches could make loss of agricultural land inevitable.
Maintain the integrity of acequias systems that have existed for several generations	Protect acequia priority of right-of-way. Assessment fee if land removed from system.				
Protect agricultural lands from development	Implement land use management tools that prevent paving over and building on agricultural lands				

<b>Goal: Retain land use patterns that support and ensure a rural lifestyle and economy</b>					
<b>A&amp;R Objectives</b>	<b>A&amp;R Actions</b>	<b>En Objectives</b>	<b>En Actions</b>	<b>ESGD Objectives</b>	<b>ESGD Actions</b>
Maintain the rural nature of the subregion with agriculture and ranching as an integral part	Maintain the numbers of livestock and tilled acres that best benefits the environment and economy together	Ensure regional planning.	Implement land use plans that preserve both rural and urban areas.	Regional growth/planning/zoning based on entire ecosystem.	Growth in suburban/rural areas is better planned.
					Growth plans require consideration of water.
Maintain a wide diversity of crops throughout the subregions	Create and maintain local farmer markets. Promote and encourage use of local crops.		Manage growth by putting geographical or numerical limits on the population.	Prevent planning that requires commuting.	Encourage areas of higher density with clean, eco-friendly, nearby businesses/industries.

<b>Goal: Retain land use patterns that support and ensure a rural lifestyle and economy</b>					
<b>A&amp;R Objectives</b>	<b>A&amp;R Actions</b>	<b>En Objectives</b>	<b>En Actions</b>	<b>ESGD Objectives</b>	<b>ESGD Actions</b>
Create an economy which would not require us to work away from the land in order to maintain it	None	Base land use and growth on the entire ecosystem.	Tie land-use to demonstrated availability of water.	The County's focus does not dwell entirely on urban growth.	Growth has a rural as well as an urban focus.
Create an economy which would enable future generations to farm and ranch.	None		Include the cost of environmental damage when assessing alternatives.		

<b>Goal: Promote the conservation of water</b>					
<b>A&amp;R Objectives</b>	<b>A&amp;R Actions</b>	<b>En Objectives</b>	<b>En Actions</b>	<b>ESGD Objectives</b>	<b>ESGD Actions</b>
Enhance conservation of water and preservation of the land	Utilize new technologies	None	Institute incentives for water conservation and recycling	Keep local water local to allow flexibility and not limit future choices.	Mandatory water conservation for all water uses.
					Tax incentives for installation of gray-water and runoff capture.
				Coordination/cooperation of water use among area water systems.	Create an Inter-water-systems Board.
				Modernized, well-maintained water systems.	None

<b>Goal: Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water. These concepts should be incorporated into the curriculum of area schools</b>					
<b>A&amp;R Objectives</b>	<b>A&amp;R Actions</b>	<b>En Objectives</b>	<b>En Actions</b>	<b>ESGD Objectives</b>	<b>ESGD Actions</b>
Assist future generations in learning about water	Create a Natural Resource Educational Program [partner the school district with agencies such as Cuba Soil and Water Conservation District]	None	Educate about ways to wisely use and reuse water.	Minimize misunderstandings between newcomers/tourists and long time residents.	Educate newcomers and visitors about local traditions and lifestyles.

<b>Goal: Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water. These concepts should be incorporated into the curriculum of area schools</b>					
<b>A&amp;R Objectives</b>	<b>A&amp;R Actions</b>	<b>En Objectives</b>	<b>En Actions</b>	<b>ESGD Objectives</b>	<b>ESGD Actions</b>
Educate folks who are not farmers by trade	Share local agriculture knowledge				Make educational packages available at Pueblo and Forest Service offices.
Educate folks about the importance of land and water stewardship	Share local knowledge about stewardship as nurturing the land and husbanding the water				Provide seminars/courses at local schools.

<b>Goal: Provide for monitoring the implementation of the water plan</b>					
<b>A&amp;R Objectives</b>	<b>A&amp;R Actions</b>	<b>En Objectives</b>	<b>En Actions</b>	<b>ESGD Objectives</b>	<b>ESGD Actions</b>
None	None	None	None	None	None

**DRAFT RIO JEMEZ SUB-REGIONAL COMBINED SCENARIO: 2003-2050 (8/27/03)**

<b>Goal: Restore and manage the watersheds on public and private land to enhance water production, retention, and quality, to reduce the threat of wildfire, and to preserve natural systems dependent on water.</b>	
<b>Objectives</b>	<b>Actions</b>
Maintain agriculture and ranching as a part of the whole ecosystem	Implement management practices that are environmentally friendly and sustainable Promote an attitude of stewardship of the ecosystems' integrity
Maintain the scenic and ecological conditions which attracted us here	Ensure good water quality Include forests/forestry, rangelands/ranching and wetland/riparian areas
Preserve the greatest amount of biological diversity	Maintain healthy and productive plant and animal communities by creating an ecosystem with a diversity of species, size, classes, and ages

<b>Goal: Support the cultural and spiritual values of water, and the universal need for and importance of water</b>	
<b>Objectives</b>	<b>Actions</b>
Realize the spiritual benefits of ancient forests, free-flowing rivers, living deserts and the abundance of life flourishing in all these areas, aside from the economic benefits.	Maintain the local cultural and religious traditions.

<b>Goal: Ensure treaty, water and acequia rights to preserve and protect local agricultural traditions</b>	
<b>Objectives</b>	<b>Actions</b>
Respect existing rural, tribal and farming/ranching lifestyles.	Form lobbying group/local Acequia Assoc/Ag Assoc
Maintain the integrity of traditional acequias systems that have existed for several generations	Acequia water banking Protect acequia priority of right-of-way.
Protect agricultural lands from development	Implement land use management tools that prevent paving over and building on agricultural lands Require planning for growth to consider impacts on traditional cultures and lifestyles Protect the option to pursue farming/ranching full or part-time
Keep water with the land.	Assessment fee if land removed from system. Water rights are not lost if water is kept in or returned to the river

<b>Goal: Provide for monitoring the implementation of the water plan</b>	
<b>Objectives</b>	<b>Actions</b>
None	None

<b>Goal: Retain land use patterns that support and ensure a rural lifestyle and economy</b>	
<b>Objectives</b>	<b>Actions</b>
Maintain the rural nature of the subregion with agriculture and ranching as an integral part	Maintain the numbers of livestock and tilled acres that best benefits the environment and economy together Maintain a wide diversity of crops throughout the subregions Create and maintain local farmer markets Promote and encourage use of local crops
Base regional growth/planning/zoning on entire ecosystem	Implement land use plans that preserve both rural and urban areas. Manage growth by putting geographical or numerical limits on the population Tie land-use to demonstrated availability of water. Encourage areas of higher density with clean, eco-friendly, nearby businesses/industries. Prevent planning that requires commuting. Create an economy which would not require us to work away from the land in order to maintain it and enable future generations to farm and ranch Include the cost of environmental damage when assessing alternatives

<b>Goal: Promote the conservation of water</b>	
<b>Objectives</b>	<b>Actions</b>
Enhance conservation of water and preservation of the land	Utilize new technologies Institute incentives for water conservation and recycling Create an inter-water-systems board Coordination/cooperation of water use among area water systems Ensure modernized, well-maintained water systems

<b>Goal: Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water. These concepts should be incorporated into the curriculum of area schools</b>	
<b>Objectives</b>	<b>Actions</b>
Assist future generations in learning about water	Create a Natural Resource Educational Program (partner the school district with agencies such as Cuba Soil and Water Conservation District) Educate about ways to wisely use and reuse water. Provide seminars/courses at local school

<b>Goal: Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water. These concepts should be incorporated into the curriculum of area schools</b>	
<b>Objectives</b>	<b>Actions</b>
Educate folks who are not farmers by trade about the importance of land and water stewardship	Share local agriculture knowledge Share local knowledge about stewardship as nurturing the land and husbanding the water Make educational packages available at Pueblo and Forest Service offices.
Minimize misunderstandings between newcomers/tourists and long time residents.	Educate newcomers and visitors about local traditions and lifestyles.



## **RIO PUERCO SUBREGION SCENARIO SEQUENCE**

- **AGRICULTURE/RANCHING**
- **NATURAL BALANCE**
- **RURAL COMMUNITITES**
- **THREE SCENARIOS COMBINED with ALTERNATIVES and OBJECTIVES**
- **DRAFT COMBINED SCENARIO**

### **RIO PUERCO AGRICULTURE/RANCHING VISION STATEMENT MAY 5 & JUNE 9, 2003**

The vision of the Cuba area's agricultural community is to perpetuate the area's historical, cultural, agricultural, economic and ecological values by becoming actively involved in strategic planning of natural resources, implementing adaptive, viable, effective, and sustainable management practices, rehabilitating farm and range lands, and reducing, and planning rotation of, fallow acres within the area.

We envision preventing conversion of agricultural land to housing and, despite the increasing demand for water in urban areas, keeping water and agriculture in our area.

We envision planning and implementing projects that will improve our lands and help to enhance and sustain the community's agrarian economy into the next century, serving as a role model to adjacent areas in their agrarian and ecological enhancement efforts, providing support to these efforts, and through improved farming and ranching methods, decreasing our contribution of sediment to both the Arroyo San Jose and the Rio Puerco.

We envision implementing feasibility studies for construction of water retention facilities, and development of a local agricultural cooperative. With a perpetual source, and appropriate distribution of water a community agricultural cooperative could promote an interest in traditional crops such as corn, squash, and beans, contemporary crops such as alfalfa, and take advantage of new and emerging crop markets.

Implementation of the proposed conservation practices has the potential to benefit both wildlife, and recreational users. Improvement in riparian, wetland, forest, and range conditions will benefit wildlife. Hunting, fishing and bird watching should all benefit from the improved habitat conditions. Implementation should also increase size and weight of livestock, and possibly reduce the acreage required per animal unit. This would benefit livestock producers. Generally implementation would benefit all lands within the Cuba area by decreasing erosion, raising the water table, and increasing ecosystem function.

Reducing stems per acre in the watershed would benefit the community by reducing the potential threat of a wildland fire removing the source of all its water, and by increasing the amount of surface water yield to and from Cuba area streams.

Installation of a water storage facility should improve water quality and remove the burden to some area residents of having to boil water before use. A water storage facility, laser leveling, and an improved delivery system would benefit all the irrigators by improving their ability to farm their land productively. It would also allow many former producers to renew production on their lands knowing the probability of getting water each year has been improved. Residents of the Cuba area would benefit from a local source of fresh produce, and forage for their livestock. Presently, much hay is purchased from as far away as Farmington, Espanola, Albuquerque and Colorado.

Development of an agricultural cooperative would also allow many former producers to renew production without themselves providing equipment and labor. This would be of especial benefit to the elderly and weekend farmers. It would provide incentive for a maximum number of participants and increase the total number of agricultural producers. It would also allow for development of an economic base that is relatively non-existent within the Cuba area. It would conceivably generate a gross receipts tax that could be applied to public welfare services such as the local volunteer fire department, and medical care facilities. The solutions and objectives are so intimately tied together that one affects all and all affects one.

Agricultural science and watershed management educational workshops should be made available to the general public and agricultural producers. Appropriate contemporary and newly emerging agricultural technologies and practices would be included. Workshops concerning “best management practices” with regard to various resource uses should be offered, and would include hands-on projects and on the ground demonstrations. Field trips would be conducted to highlight local resource conservation success stories. These would demonstrate the potential benefits to landowners that well implemented conservation practices, and healthy ecosystems provide.

Both Albuquerque and Farmington are little more than an hour away, well within commuting distance. There is a very real threat that, in the future, the area could become a “bedroom community” with conversion of agricultural land to housing. There is a very real potential for conversion of riparian, wetland, and/or agricultural land to suburban or other non-agricultural uses. Increasing growth and demand for water in urban areas has many looking to northern areas to obtain water rights in order to fuel the continued urban growth. Presently, most landowners within the Cuba area envision and desire the area remaining in an agrarian state. With the ability to keep their lands financially viable through agriculture there should be little inclination to subdivide and sell the agricultural lands for housing. An improved irrigation system should prevent conversion of irrigation water rights to domestic use.

### **PRIMARY RESOURCE CONCERNS**

1. Topography of cropland prevents the efficient application of water.
2. Construction of a water storage reservoir (facility) to supply an adequate, perpetual supply of water,

3. Need to improve irrigation water delivery systems to prevent: water loss to dirt ditches and from broken flumes and culverts; silting in and erosion of ditches; and reduced flow due to invasion of willows, trees and weeds,
4. Education about new agricultural technologies and techniques,
5. Protection and improved functioning of the watershed to increase water quantity and reduce the risk of catastrophic fire and loss of the watershed.

## **SOIL RESOURCE CONCERNS**

### **Soil Resource Concern No. 1- Rangeland Soil Erosion:**

Surface water runoff on grazed lands causes sheet and rill erosion resulting in formation or progression of head cuts, gullies, and arroyos. Overgrazing, and the development and increasing use of unpaved roads are contributing factors to this problem. Increasing incision of arroyos lowers the water table resulting in disappearance of springs and seeps. Erosion of rangeland causes loss of soil, reduces soil nutrients, prevents establishment of grasses, and results in general deterioration of the land, its uses, value and other benefits.

#### **Proposed Solutions:**

- Educate landowners and ranchers about erosion factors, methods to reduce or prevent it, and improved methods of livestock handling.
- Construct grade stabilization structures such as: net wire diversions, rock and brush dams, and other similar applications.
- Improve grazing management through methods such as: fencing, pasturing, rotational grazing and other methods.

#### **Planned Objectives:**

- Reduce formation of, and stabilize head cuts, gullies and arroyos.
- Increase benefit to landowners and producers.

### **Soil Resource Concern No. 2- Cropland Soil Erosion:**

Croplands within the community receive water through an extensive and intricate system of large unlined dirt ditches while smaller, unlined lateral ditches distribute water to family fields where flood irrigation methods are practiced. Increased cutting of the ditches has caused channelization in some places and made application of water to fields difficult or impossible. Blown out culverts and broken flumes add to soil erosion when water bypasses them to reach the grade beyond. Topography of hundreds of acres of potentially productive and productive land prevents efficient application of water, and enhances sheet and rill erosion. Erosion within irrigated cropland causes loss of topsoil and seed, reduces soil nutrients and irrigation efficiency, and results in general deterioration of the land, its uses, value and other benefits.

#### **Proposed Solutions:**

- Laser-level croplands.
- Educate landowners and farmers about erosion factors, methods to reduce or prevent it, and improved methods of agriculture.

- Re-contour segments of the ditch that have become channelized where it traverses private land.
- Repair deeply eroded cuts with heavy equipment, and smaller cuts with grade stabilization structures, weirs, and other similar methods.
- Line the ditch system, or segments most prone to erosion, with concrete or PVC pipe, repair and improve culverts and flumes, and repair or construct structures for water control.
- Apply soil conservation techniques such as installation of field borders, and conservation or no-till methods.

**Planned Objectives:**

- Reduce erosion.
- Increase benefit to landowners and producers.

**Soil Resource Concern No. 3-Riparian Soil Erosion:**

During periods of heavy precipitation un-vegetated banks along Area streams and ephemeral waterways are subject to high-energy flooding which causes soil erosion, and channelization.

**Proposed Solutions:**

- Educate landowners and ranchers about erosion factors, methods to reduce or prevent it, improved methods of livestock handling, and importance of riparian areas.
- Plant willow and cottonwood trees at unstable banks and along non-vegetated segments.
- Construct fencing to protect riparian areas and plantings from livestock.
- Construct grade stabilization structures such as: net wire diversions, rock and brush darns, and other similar applications.
- Stabilize channel banks by installing J-Hooks and other similar structures.

**Planned Objectives:**

- Reduce erosion to retain and improve riparian lands of private landowners.
- Improve riparian habitat of Area streams and other waterways.

**WATER RESOURCE CONCERNS**

**Water Resource Concern No. I- Watershed Yield**

:

The upper portions of area streams flow through forests that have become overgrown with small diameter trees and brush. Conditions have developed which promote occurrence of catastrophic wildland fires, and reduce the amount of surface water runoff to the streams. Many of the area streams are both the direct and indirect source of the area's water. Unlined irrigation ditches promote growth of weedy species which further reduces the water supply. Water supplies within the area have always been erratic; during normal years supplies are strained and in drought years become inadequate. Further, unlined ditches, flood irrigation methods, unlevelled fields, and inefficient distribution results in waste of irrigation water. The area's water supply and irrigation delivery systems affect both agricultural and non-agricultural water users. Overall, the watershed needs to be protected, and the area's water supply and irrigation delivery systems need to be improved.

**Proposed Solutions:**

- Line the ditch system and laterals with concrete or PVC pipe.
- Construct a water storage reservoir (preferable) or other storage facility.
- Work with relevant agencies where necessary to implement projects to reduce the number of stems per acre on the National Forest.
- Work with relevant agencies where necessary to implement projects to reduce the number of stems per acre on private lands.
- Work with relevant agencies where necessary to implement controlled burn projects on the National Forest and along the irrigation ditch on private lands.

**Planned Objectives:**

- Protect and increase both domestic and irrigation water supplies.
- Provide a consistent and sustainable source of water.

**Water Resource Concern No. 2- Drinking Water Quality:**

As noted above, numerous areas receive their drinking water from surface runoff to area streams. Catastrophic fire in the watershed would greatly affect water quality. Presently, during spring snowmelt and summer monsoons the quality of domestic water is diminished due to suspended sediment, and boiling is generally required. Water storage would help to reduce the amount of sediment entering the drinking water system.

**Proposed Solutions:**

- Construct a water storage reservoir (preferable) or other storage facility.
- Work with relevant agencies where necessary to implement thinning of trees on the National Forest.
- Work with relevant agencies where necessary to implement controlled burn projects on the National Forest.

**Planned Objectives:**

- Protect and improve domestic water quality.

**Water Resource Concern No. 3- Rangeland Water Availability:**

During periods of low precipitation there is insufficient water for livestock and wildlife. A limited water supply can concentrate livestock and wildlife into restricted geographical areas causing competition, overgrazing, and a reduction in size and productivity. Adequate distribution of water can be used to achieve a balanced utilization pattern across the landscape. Studies show a close link between detrimental impacts to the local ecology and economic losses of local producers. Additionally, the 1932 La Jara Hydrographic Survey notes the geologic structure in the area is favorable for production of water from shallow wells which may be true for some of the entire area.

**Proposed Solutions:**

- Drill wells for development of alternative upland water sources.
- Install improved well pump technology on existing wells.
- Install water pipelines and drinking troughs.

**Planned Objectives:**

- Improved water availability and distribution to reduce grazing impacts and improve livestock productivity.
- Improve water resource conditions for local wildlife populations.

**PLANT RESOURCE CONCERNS****Plant Resource Concern No. 1- Fallow Cropland**

It is estimated that about 45% of irrigated cropland acres are lying fallow. Causes include: an inadequate supply and distribution of irrigation water, absentee or aging landowners, and the financial obligation of getting land into production along with pessimism that costs can be recouped through crop production. Primarily, the inadequacy of the irrigation system's infrastructure reduces the small farmer's ability to farm. As the amount of cropland taken out of production increases the hardship on remaining producers also increases. With fewer irrigators remaining to finance and repair the ditch the system quickly loses efficiency. As the system's efficiency decreases it provides fewer producers with water resulting in withdrawal of more producers. Soon the agrarian lifestyle is in a downward spiral.

**Proposed Solutions:**

- Educate landowners and producers about relevant contemporary farming technologies and practices, and expanding crop markets.
- Develop a local agricultural cooperative to promote agriculture, an interest in native and traditional crops, contemporary crops, and new and emerging crop markets.
- Implement new farming technologies that will promote new crop production, promote native vegetation and crop diversity, and increase production.
- Work with local banks and Acequia de Cuba (Community Ditch Association) where necessary to help our agricultural producers who lack financial resources.
- Work with local schools to involve children and young adults in agriculture.
- Laser-level croplands.
- Improve and repair the ditch and lateral system.
- Construct a water storage reservoir or facility.
- Planned rotation of fallow acres to benefit soil health and water management.

**Planned Objective:**

- Develop an agricultural cooperative that will promote and sustain agriculture through education, financial support, improved farming methods, crop diversity, shared use of equipment and teaching the community's children about the importance and benefit of agriculture and good agricultural conservation methods.
- It is anticipated that a cooperative should be able to get 50% of the fallow croplands back into production within 10 years, and 75% within 15 years.
- It is anticipated that overall yields of a diversity of native, traditional, contemporary and economically important crops should increase by 50% in 10 years, and 75% in 15 years.
- Bringing fallow lands back into production and increasing yields, however, is intricately dependent on a consistent and sustained supply of water.

### **Plant Resource Concern No. 2- Sagebrush, and Juniper Tree Encroachment:**

Much land that should support native vegetation has been or is being heavily invaded by sagebrush and juniper. Due to the increase in these species both the bio-diversity of rangelands and production of croplands has been reduced. Forage, and native grass production have been adversely impacted, and the concomitant lack of groundcover promotes soil erosion.

#### **Proposed Solutions:**

Work with relevant agencies to manage sagebrush monocultures and juniper trees.  
Seed with native grasses.

#### **Planned Objectives:**

- Enhance the ecology of the rangeland ecosystem to benefit local producers.
- Reduce soil erosion by increasing plant species diversity, and groundcover on rangelands.

## **ANIMAL RESOURCE CONCERNS**

### **Animal Resource Concern No. 1- Degraded Riparian and Wetland Habitat:**

Numerous springs, stockponds, and ephemeral waterways are located within the Cuba area. These waters provide both winter and summer habitat for numerous wildlife species, and migratory birds. Wildlife habitat can be compromised by uncontrolled access from livestock and source water depletion. In drought years nearly all the freshwater sites have reduced water quantity. Besides reduced or dried up ponds, important plant species such as willow and cattails can be reduced or succumb resulting in negative impacts to wetland wildlife species. During years of heavy precipitation flooding can both silt up and scour out important wildlife wetlands.

#### **Proposed Solutions:**

- Educate landowners and ranchers about the importance of riparian and wetland areas.
- Rehabilitate freshwater areas, and plant willow and cottonwood trees to create more and improved wildlife habitat for migratory birds.
- Construct fences to protect riparian and wetland areas.
- Drill wells for development of alternative upland water sources.
- Install water pipelines and drinking troughs.
- Construct grade stabilization structures such as net wire diversions, rock and brush dams, and other similar applications.

#### **Planned Objective:**

- Improve wildlife habitat conditions.
- Promote wetland and riparian conservation and management prescriptions to benefit both wildlife and livestock.

### **Animal Resource Concern No. 2- Competition for Forage:**

Rangeland and cropland production of native grass and forage has been reduced due to the increase in both sagebrush, and juniper trees. Loss of groundcover promotes competition for forage between livestock and wildlife.

**Proposed Solutions:**

- Work with relevant agencies to conduct brush management and reduce sagebrush monocultures.
- Work with relevant agencies to reduce juniper trees on federal and private lands.
- Implement fencing, pasturage, and rotational grazing practices.
- Seed with native grasses.
- Drill wells for development of alternative upland water sources.

**Planned Objectives:**

- Enhance the ecology of the rangeland ecosystem to benefit the Cuba area's watershed.
- Reduce competition for forage between livestock and wildlife.

**Animal Resource Concern No. 3- Competition for Water:**

Insufficient quantity and distribution of water can create competition between livestock and wildlife. Adequate distribution of water can be used to achieve a balanced utilization pattern across the landscape. The 1932 La Jara Hydrographic Survey notes the geologic structure in the area is favorable for production of water from shallow wells.

**Proposed Solutions:**

- Drill wells for development of alternative upland water sources.
- Install improved well pump technology on existing wells.
- Install water pipelines and drinking troughs.

**Planned Objectives:**

Improved water availability and distribution to reduce competition for water resources between livestock and wildlife.



## RIO PUERCO AGRICULTURAL/RANCHING SCENARIO (6/23/03)

GOAL	OBJECTIVE	ACTION
Restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.	Reduce and prevent erosion of soils, and loss of soil nutrients, topsoil and seed, to reduce general deterioration of the land, and its uses, and to increase benefit to landowners and producers.	<ul style="list-style-type: none"> <li>• Reduce and prevent surface water runoff on grazed lands resulting in sheet and rill erosion.</li> <li>• Re-establish grasses.</li> <li>• Reduce development, and increasing use of unpaved roads.</li> <li>• Improve grazing management through methods such as: fencing, pasturing, rotational grazing and other methods to reduce overgrazing.</li> <li>• Apply soil conservation techniques such as installation of field borders, and conservation or no-till methods.</li> </ul>
Restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.	Reduce, prevent and repair incising of arroyos to raise the water table and recharge springs and seeps.	<ul style="list-style-type: none"> <li>• Reduce formation of, and stabilize head cuts, gullies and arroyos.</li> <li>• Repair deeply eroded cuts with heavy equipment.</li> <li>• Repair smaller cuts with grade stabilization structures, weirs, net wire diversions, rock and brush dams, and other similar methods.</li> </ul>
Restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.	Enhance the ecology of the rangeland ecosystem to benefit the watersheds. Increase both the bio-diversity of rangelands, and production of croplands, and increase forage, native grass production, and groundcover.	<ul style="list-style-type: none"> <li>• Work with relevant agencies to manage sagebrush monocultures and reduce numbers of juniper trees.</li> <li>• Seed with native grasses.</li> <li>• Use various methods to reduce competition for forage between livestock and wildlife.</li> <li>• Improve grazing management through methods such as: fencing, pasturing, rotational grazing and other methods to reduce overgrazing.</li> </ul>
Restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on	Provide for an increased, consistent and sustainable source of both domestic and irrigation water, and protect and improve the quality of the domestic supply from surface-water.	<ul style="list-style-type: none"> <li>• Line the ditch system and laterals with concrete or PVC pipe.</li> <li>• Construct a water storage reservoir (preferable) or other storage facility.</li> <li>• Work with relevant agencies to implement projects to thin trees and brush on public and private land.</li> </ul>

GOAL	OBJECTIVE	ACTION
water.		<ul style="list-style-type: none"> <li>• Work with relevant agencies to implement controlled burn projects on public and private land, and along the irrigation ditches.</li> </ul>
Restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.	Provide for an increased, consistent and sustainable sources of freshwater, and adequate distribution of water to achieve a balanced utilization pattern across the landscape, reduce overgrazing, and to increase size and productivity of animals.	<ul style="list-style-type: none"> <li>• Drill wells for development of alternative upland water sources to improve water availability and distribution.</li> <li>• Install improved well pump technology on existing wells.</li> <li>• Install water pipelines and drinking troughs.</li> <li>• Increase water availability and distribution to reduce competition for water resources between livestock and wildlife.</li> </ul>
Restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.	Reduce, prevent, and repair habitat loss along streams, ephemeral waterways, and in wetlands. Improve degraded riparian and wetland habitats to provide both winter and summer habitat for numerous wildlife species, and migratory birds, and to guard against water reduction, and loss of important plant species such as willow and cattails in drought years, and both silting up and scouring out of important wetlands due to flooding during years of heavy precipitation.	<ul style="list-style-type: none"> <li>• Promote wetland and riparian conservation and management prescriptions to benefit both wildlife and livestock.</li> <li>• Re-vegetate along streams and ephemeral waterways.</li> <li>• Rehabilitate freshwater areas, and plant willow and cottonwood trees at unstable banks and along non-vegetated segments.</li> <li>• Construct fencing to protect riparian and wetland areas, and plantings from livestock.</li> <li>• Stabilize channel banks by installing J-Hooks and other similar structures.</li> <li>• Re-create and induce stream meanders.</li> </ul>
Support the cultural and spiritual values of water, and the universal need for and importance of water.		<ul style="list-style-type: none"> <li>•</li> </ul>
Ensure treaty, water and acequia rights to preserve and protect		<ul style="list-style-type: none"> <li>•</li> </ul>

GOAL	OBJECTIVE	ACTION
<p>local agricultural traditions.</p> <p>Retain land use patterns that support and ensure a rural lifestyle and economy.</p>	<p>Develop a local economy that would help prevent loss of the agrarian lifestyle. Studies show a close link between detrimental impacts to the local ecology and economic losses of local producers.</p>	<ul style="list-style-type: none"> <li>• Develop local agricultural cooperatives that will promote and sustain agriculture through education, financial support, improved farming methods, crop diversity, shared use of equipment and teaching the communities children about the importance and benefit of agriculture and good agricultural conservation methods.</li> <li>• Promote development of a diversity of crop markets including; native and traditional crops, contemporary crops, and new and emerging crops.</li> <li>• Implement new farming technologies that will help to increase production.</li> <li>• Work with local banks and Acequia Associations to aid local agricultural producers who lack financial resources.</li> <li>• Work with local schools to involve children and young adults in agriculture.</li> <li>• Plan rotation of fallow acres to benefit soil health and water management.</li> <li>• Reduce the amount of presently fallow cropland, and prevent further cropland being taken out of production.</li> <li>• Develop a consistent and sustained supply, and distribution of irrigation water.</li> </ul>

GOAL	OBJECTIVE	ACTION
Retain land use patterns that support and ensure a rural lifestyle and economy.	Increase efficiency of irrigation ditch system.	<ul style="list-style-type: none"> <li>• Repair and construct head-gates and farm gates for water control.</li> <li>• Reduce and prevent increased incision of irrigation ditches which causes channelization and makes application of water to fields difficult or impossible.</li> <li>• Line the ditch system, or segments most prone to erosion, with concrete or PVC pipe.</li> <li>• Re-contour segments of ditches that have become channelized.</li> <li>• Repair blown out culverts and broken flumes which add to soil erosion when water bypasses them to reach the grade beyond.</li> <li>• Laser level fields to provide a topography that increases the efficient application of water, and reduces sheet and rill erosion.</li> </ul>
Promote conservation of water.		<ul style="list-style-type: none"> <li>•</li> </ul>
Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water.		<ul style="list-style-type: none"> <li>• Educate landowners and ranchers about erosion factors, and methods to reduce or prevent it.</li> <li>• Educate landowners and ranchers about improved methods of livestock handling.</li> <li>• Educate landowners and farmers about improved methods of agriculture.</li> <li>• Educate landowners and ranchers about erosion factors, methods to reduce or prevent it, improved methods of livestock handling, and importance of riparian areas.</li> <li>• Educate landowners and ranchers about the importance of riparian and wetland areas.</li> <li>• Educate landowners and producers about relevant contemporary farming technologies and practices, and expanding crop markets.</li> </ul>
Provide for monitoring the implementation of the water plan.		<ul style="list-style-type: none"> <li>•</li> </ul>

**WATERSHED VISION STATEMENT**  
3/14/03

The vision of the watershed committee is to have a fire adapted watershed with enhanced infiltration and water retention and a healthier rangeland with rehabilitated riparian zones. The watershed will ultimately have a balance between wild and cultivated lands that consider drought, fire, increased populations and land use changes.

The vision includes the following elements:

- Green healthy watershed
- Minimum erosion
- Enhanced water retention with a raised water table
- Eco-tourism
- Ranching Agriculture
- Grass banking
- Others???

**RIO PUERCO NATURAL BALANCE VISION STATEMENT (APRIL 22, 2003)**

People will understand and live within the natural constraints of climate, fire, soils, and biological communities. Everyone will benefit from a fire-adapted watershed with enhanced water capture and healthier forests, grasslands and water courses. The landscape will balance wild and cultivated lands that accommodate drought, fire, wildlife, and limited human populations.

[Discussion of ecological roles of climate and fire, functions of the watershed, human dependence on natural systems, and elaboration of the vision will be added.]

Scenario Committee Members:

Terry Johnson, Paul Yoder, Armand Groffman, Keith Stickford

**DRAFT RIO PUERCO NATURAL BALANCE SCENARIO**

<b>Goal</b>	<b>Objective</b>	<b>Action</b>
Restore and manage the watersheds on public and private land to enhance water production, retention, and quality, to reduce the threat of wildfire, and to preserve natural systems dependent on water.	Restore a fire-adapted watershed.	<ul style="list-style-type: none"> <li>• Thin forests and woodlands in an ecologically sound manner (A-66).</li> <li>• Treat grassland brush in an ecologically sound manner.</li> <li>• Develop a network of natural and artificial fire and fuel breaks to define 5000+ acre fire management units throughout the watershed.</li> <li>• Provide for adequate fire protection of structures to facilitate burning.</li> </ul>

		<p>of structures to facilitate burning.</p> <ul style="list-style-type: none"> <li>• Apply prescribed fire frequently and extensively to established fire management units.</li> </ul>
	Decrease soil erosion and increase water infiltration.	<ul style="list-style-type: none"> <li>• Expand watershed management programs (A-33).</li> <li>• Improve storm water management (A-34).</li> <li>• Manage forage utilization to maintain ground cover and carry fire.</li> <li>• Encourage rainwater harvesting (A-44).</li> </ul>
	Improve water quality.	<ul style="list-style-type: none"> <li>• Require sewage treatment systems in higher density communities (A-26)</li> <li>• Use constructed wetlands for final sewage treatment (A-36).</li> <li>• Identify and protect groundwater recharge areas (A-47).</li> <li>• Clean up water courses.</li> <li>• Limit and reduce vehicular low-water stream crossings.</li> </ul>
	Maintain and enhance native vegetation.	<ul style="list-style-type: none"> <li>• Control or eliminate invasive weeds.</li> <li>• Develop grass banks and other cooperative mechanisms to reduce grazing during drought.</li> <li>• Remove non-native vegetation from riparian areas (A-1).</li> <li>• Carefully manage grazing in riparian areas.</li> </ul>
Support the cultural and spiritual values of water, and the universal need for and importance of water.	[To be added]	<ul style="list-style-type: none"> <li>• Promote appreciation of the dependence of all life on water.</li> <li>• Promote the sanctity of water courses.</li> <li>• Authorize in-stream flow as a beneficial use (A-63).</li> <li>• Develop public parks and interpretive areas along perennial streams near villages.</li> <li>• Develop adopt-a-watercourse programs.</li> <li>• Develop community gardens.</li> </ul>
Ensure treaty, water and acequia rights to preserve and protect local agricultural	[To be added]	<ul style="list-style-type: none"> <li>• Form local agricultural cooperatives to maintain productivity of agricultural lands in local communities.</li> </ul>

traditions.		<ul style="list-style-type: none"> <li>• Support acequia and agricultural land improvement programs.</li> <li>• Develop mechanisms to prevent transfer of surface and ground water rights from their locality.</li> <li>• Develop water banking to maintain local water rights.</li> <li>• Meter all surface water diversions (A-7).</li> <li>• Meter all wells (A-7).</li> <li>• Limit wells that impair surface or groundwater (A-61).</li> </ul>
Retain land use patterns that support and ensure a rural lifestyle and economy.	[To be added]	<ul style="list-style-type: none"> <li>• Develop protective zoning for acequia-irrigated lands.</li> <li>• Require water availability before land subdivision (A-30).</li> <li>• Manage growth within the limits of water and a rural landscape (A-52).</li> <li>• Authorize no well permits on tracts of less than 40 acres (A-61).</li> <li>• Develop markets for local agricultural products (A-11).</li> </ul>
Promote conservation of water.	[To be added]	<ul style="list-style-type: none"> <li>• Develop local water conservation and drought plans (A-18).</li> <li>• Promote projects to increase irrigation efficiency (A-10).</li> <li>• Fund acequias to increase operating efficiency (A-60).</li> <li>• Reduce artificial open water evaporation (A-45).</li> <li>• Fund domestic water cooperatives to improve their water systems.</li> <li>• Adopt graduated water rates in all domestic systems (A-21).</li> <li>• Promote adoption of domestic water-saving technologies (A-22).</li> <li>• Promote greywater reuse (A-24).</li> </ul>
Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water.	Promote public understanding of the ecology of natural and human communities.	<ul style="list-style-type: none"> <li>• Promote understanding of the central roles of climate and fire in the ecology of natural communities.</li> <li>• Promote understanding of the roles of watersheds to store and release winter snowmelt and dissipate summer downpours.</li> <li>• Promote understanding of the natural</li> </ul>

		<p>limits to the productivity of land, and plant, wildlife and human dependence on it.</p> <ul style="list-style-type: none"> <li>• Promote the perception of healthy land and healthy watersheds as personal and community wealth.</li> <li>• Develop school curricula and outdoor projects on these subjects.</li> </ul>
	Promote public understanding of the interdependence of water management issues.	<ul style="list-style-type: none"> <li>• Ensure continued public participation in water issues (A-53).</li> <li>• Encourage appreciation of the interrelationship of water and land management in watersheds.</li> </ul>
	Promote public understanding of benefits and means of water conservation.	<ul style="list-style-type: none"> <li>• Disseminate water-saving information (A-</li> <li>• Develop school curricula concerning water conservation (A-56).</li> </ul>
Provide for monitoring the implementation of the water plan.	[To be added]	<ul style="list-style-type: none"> <li>• Maintain watershed steering committees.</li> <li>• Increase monitoring and modeling of surface and groundwater (A-38).</li> <li>• Fund ongoing water planning (A-58).</li> <li>• Develop geographic watershed information (A-73).</li> </ul>



**RIO PUERCO NATURAL BALANCE VISION STATEMENT**  
**WITH ECOLOGICAL CONTEXT- 6/10/03**  
**JUNE 9, 2003**

**Vision Statement**

People living within the watershed will understand and live within the natural constraints of climate, fire, soils, and biological communities. Everyone will benefit from a fire-adapted watershed with enhanced water retention and healthier forests, grasslands and watercourses. The landscape will balance wild and cultivated lands that accommodate drought, fire, wildlife, and limited human populations.

**Ecological Context**

During the winter, Pacific fronts bring mountain snow and lowland rain to our watershed. Spring snowmelt seeps into the soil, and charges streams that feed the rivers, but spring weather fronts typically pass to the north, bringing only wind and intensifying sunshine that result in late spring and early summer drought. However, a northward flow of subtropical moisture during the summer combines with daytime heating to generate scattered but sometimes violent thundershowers. Plants take advantage of early spring or late summer wet periods to grow and reproduce. This climatic pattern shapes our watershed.

In this climate, a properly functioning watershed will act like a sponge, absorbing precipitation and snowmelt, and storing and gradually releasing water from springs and into streams through seasonal spring droughts. It will also minimize runoff and erosion from summer thundershowers by slowing overland, arroyo, and stream flows. Because these watershed functions are primarily dependent on ecosystem conditions and processes, watershed management requires ecosystem management.

Fire is a keystone process determining the ecological structure and function of most southwestern ecosystems. Spring drought and abundant lightning resulted in frequent ignitions that were historically carried by light fuels. Fire scar studies have shown that fires burned frequently and widely across southwestern landscapes for centuries prior to 1900, mostly in the dry spring and early summer period preceding the onset of summer rains. Fires occurred primarily as ground fires in more open and grassy forests and woodlands than we see today. Fires were particularly widespread in years with dry winter/spring conditions, and in some years almost the entire Southwest experienced fire.

More than a century of reduced fire has caused major changes in southwestern ecosystems. The natural fire regime ended suddenly in the late 1800's, as heavy livestock grazing followed the arrival of rail transportation to distant markets, and removed grass that had carried fire across the landscape. Active forest fire suppression began in the early 1900's. Fire suppression has resulted in widespread buildup of dense forest and woodland stand structures, accumulation of heavy fuel loads, and marked reduction of grasses and forbs, which has increased erosion. Watershed yield and water tables are lower in dense forest and woodland stands, and trees there are more susceptible to drought, disease, and high intensity wildfire. Some of these structural

problems can be corrected by mechanical thinning, but fire is such a critical process in southwestern ecosystems that it still must be reintroduced everywhere to remedy all the impacts of fire exclusion.

Forests, woodlands, and grasslands in our watershed have lost much of their ability to carry surface fires, and forests and woodlands have become vulnerable to crown fire. The competition among trees for water and nutrients leaves them all more susceptible to drought, insects, and disease, and reduces the ability of the watershed to feed perennial streams and resist erosion. These conditions have resulted from a public perception of fire as a calamity instead of a natural process, and a long tradition of fire suppression focused on protecting trees and human developments that are located in a dynamic landscape.

Human communities are an integral part of the ecological communities in which they are situated. Natural ecological communities that have persisted for millennia with our watershed's climate, topography, soils, and key ecological processes provide the only valid template for what is sustainable. We must learn to view the ecosystems on which we depend as a savings account, and to live off the interest, not the principal. Historically, depletion of natural resources and impoverishment of ecosystems has led to impoverishment and sometimes elimination of the human communities that are embedded within them.

Sustainable use of water must recognize the dependence of watershed functions on ecological processes, such as fire, and ecological conditions, which are ultimately dependent on human management and use of natural resources. Every ecosystem has a range of natural variation to which its plant and animal components are adapted. To sustain those ecosystems, management of natural resources must recognize and respect the limits of that natural range of variation, which define the boundaries of sustainability. For example, fire suppression in ecosystems that were adapted to frequent fires did not recognize the natural range of variation in fire frequency, and this has been unsustainable, leading to increasingly larger and more catastrophic fires.

Likewise, we must recognize and respect ecological limits in the supply and availability of water for human use. Ecological watershed management can capture, store, and release water, but cannot extend it beyond the limits of providence. Ultimately, we must limit our use of water, and other natural resources, to what is available and excess to the needs of the larger ecological community to which we belong.

Scenario Committee Members:

Terry Johnson, Paul Yoder, Armand Groffman, Keith Stickford

**RIO PUERCO NATURAL BALANCE SCENARIO (6/23/03)**

<b>GOAL</b>	<b>OBJECTIVE</b>	<b>ACTION</b>
Restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire,	Restore a fire adapted watershed. In a 30-year project use new federal fuel reduction and fire prevention funds for public	<ul style="list-style-type: none"> <li>• Thin forests and woodlands in an ecologically sound manner (A-66).</li> <li>• Treat grassland brush in an</li> </ul>

<b>GOAL</b>	<b>OBJECTIVE</b>	<b>ACTION</b>
and to preserve natural systems dependent on water.	lands, and tax rebates and credits for private land to create many local jobs for sawyer crews, earth moving machinery, and hand crews. Additional value added industry and permanent jobs would be created to maintain this healthy watershed.	<p>ecologically sound manner.</p> <ul style="list-style-type: none"> <li>• Develop a network of natural and artificial fire and fuel breaks to define 5000+ acre fire management units throughout the watershed.</li> <li>• Provide for adequate fire protection of structures to facilitate burning.</li> <li>• Apply prescribed fire frequently and extensively to established fire management units.</li> </ul>
Restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.	Within 10 years decrease soil erosion and increase water infiltration. Use funding as above.	<ul style="list-style-type: none"> <li>• Expand watershed management programs (A-33).</li> <li>• Improve storm water management (A-34).</li> <li>• Manage forage utilization to maintain ground cover and carry fire.</li> <li>• Encourage rainwater harvesting (A-44).</li> </ul>
Restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.	Within 10 years improve water quality. Use funding from new federal & state taxes and tax incentives and rebates.	<ul style="list-style-type: none"> <li>• Use constructed wetlands for final sewage treatment (A-36).</li> <li>• Identify and protect groundwater recharge areas (A-47).</li> <li>• Clean up watercourses.</li> <li>• Limit and reduce vehicular low-water stream crossings.</li> </ul>
Restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.	Within 20 years enhance and maintain native vegetation by legislated land use. Remove non-native vegetation from riparian areas using work corps and student labor.	<ul style="list-style-type: none"> <li>• Control or eliminate invasive weeds.</li> <li>• Develop grass banks and other cooperative mechanisms to reduce grazing during drought.</li> <li>• Remove non-native vegetation from riparian areas (A-1).</li> </ul>

GOAL	OBJECTIVE	ACTION
		<ul style="list-style-type: none"> <li>• Carefully manage grazing in riparian areas.</li> </ul>
Support the cultural and spiritual values of water, and the universal need for and importance of water.	Within 30 years integrate community and spiritual leaders around water and land care. Within 10 years ensure every education level includes water and land use curricula.	<ul style="list-style-type: none"> <li>• Promote appreciation of the dependence of all life on water.</li> <li>• Promote the sanctity of watercourses.</li> <li>• Authorize in-stream flow as a beneficial use (A-63).</li> <li>• Develop public parks and interpretive areas along perennial streams near villages.</li> <li>• Develop adopt-a-watercourse programs.</li> <li>• Develop community gardens.</li> </ul>
Ensure treaty, water and acequia rights to preserve and protect local agricultural traditions.	Within 30 years have Legislators at every level integrate water protection into current & new statutes.	<ul style="list-style-type: none"> <li>• Form local agricultural cooperatives to maintain productivity of agricultural lands in local communities.</li> <li>• Support acequia and agricultural land improvement programs.</li> <li>• Develop mechanisms to prevent transfer of surface and ground water rights from their locality.</li> <li>• Solicit funds from state and federal government agencies to map, catalog, and describe acequias including annual water use</li> </ul>
Retain land use patterns that support and ensure a rural lifestyle and economy.	Within 50 years water use will match water supply. This was accomplished by statutes, as above, and rigorous integration of county, state, & federal policies.	<ul style="list-style-type: none"> <li>• Develop protective zoning for acequia-irrigated lands.</li> <li>• Authorize no well permits on tracts of less than 40 acres (A-61).</li> </ul>
Promote conservation of water.	Over the next 50 years key federal legislation, tax incentives and credits, and funding will guide water use reduction in a trickle down	<ul style="list-style-type: none"> <li>• Develop local water conservation and drought plans (A-18).</li> <li>• Promote projects to increase irrigation</li> </ul>

GOAL	OBJECTIVE	ACTION
	<p>fashion to the state level, and similarly from state level to local levels.</p>	<p>increase irrigation efficiency (A-10).</p> <ul style="list-style-type: none"> <li>• Fund acequias to increase operating efficiency (A-60).</li> <li>• Reduce artificial open water evaporation (A-45).</li> <li>• Fund domestic water cooperatives to improve their water systems.</li> <li>• Adopt graduated water rates in all domestic systems (A-21).</li> <li>• Promote adoption of domestic water-saving technologies (A-22).</li> <li>• Promote greywater reuse (A-24).</li> <li>• Develop water budget to understand water recharge and water use.</li> </ul>
<p>Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water.</p>	<p>Within 50 years the public will gain understanding of the interdependence of natural and human communities. Funding will support this education process (as above).</p>	<ul style="list-style-type: none"> <li>• Promote understanding of the central roles of climate and fire in the ecology of natural communities.</li> <li>• Promote understanding of the roles of watersheds to store and release winter snowmelt and dissipate summer downpours.</li> <li>• Promote understanding of the natural limits to the productivity of land, and plant, wildlife and human dependence on it.</li> <li>• Promote the perception of healthy land and healthy watersheds as personal and community wealth.</li> <li>• Develop local school curricula and outdoor projects on these subjects.</li> </ul>
<p>Promote education for area residents regarding the connection between land use,</p>	<p>Over the next 50 years public understanding of &amp; participation in water</p>	<ul style="list-style-type: none"> <li>• Ensure continued public participation in water issues (A-53).</li> </ul>

<b>GOAL</b>	<b>OBJECTIVE</b>	<b>ACTION</b>
water and environmental health, and ways to conserve water.	management will grow via education and local water assemblies.	issues (A-53). <ul style="list-style-type: none"> <li>• Encourage appreciation of the interrelationship of water and land management in watersheds.</li> </ul>
Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water.	Over the next 50 years public understanding of water conservation will grow.	<ul style="list-style-type: none"> <li>• Disseminate water-saving information (A-56)</li> <li>• Develop school curricula concerning water conservation (A-56).</li> </ul>
Provide for monitoring the implementation of the water plan.	For some years (within 20 years) legislation will create and support citizen water assemblies/forums until their functions can be integrated into all levels of executive and legislative branches.	<ul style="list-style-type: none"> <li>• Increase monitoring and modeling of surface and groundwater (A-38) using state and federal support.</li> <li>• Develop geographic watershed information system (A-73).</li> </ul>

**RIO PUERCO RURAL COMMUNITIES VISION STATEMENT**  
**MAY 10, 2003**

A Rural Community vision foresees a future for the Rio Puerco watershed which reflects its unique prehistoric and historic, natural, cultural, and economic traditions. This vision takes advantage of modern innovation to accommodate a shift to an ethic that upholds respect for land, water, air, and all living things.

In this vision Community would be built through observance of a spring Water Festival linked to the spring equinox (or Earth Day, or Cinco de Mayo) in which the knowledge of water as a sacred gift is restored. Through the blessing of the local acequias, streams, and wetlands by priests and medicine men, a spiritual approach to water is maintained. A fall harvest festival linked to the County Fair would celebrate the perseverance and cohesion of the communities.

This vision would maintain large areas of mostly vacant and predominantly undeveloped land with limited, low-density residential development, home occupations, and agricultural activities.

Rural Agricultural Areas would protect and preserve areas presently and historically used for agricultural practices. These areas would be comprised of predominantly irrigated lands for farming and lands for livestock management. Areas that are within flood plains, or which have hydrologic problems such as storm water ponding, poor drainage, or a high water table, and riparian and wetland areas would be protected from development and would have limited residential uses.

This vision would insure maintenance of a rural lifestyle through land use planning, and laws that prevent development of irrigated or non-irrigated farmland, provide for planned rotation of fallow lands and insure continued existence of acequias and other agricultural pursuits. Surface water would be tied to the land and not be separated from it. Innovative ways to preserve water in the area, such as designating in-stream flow as a beneficial use and water banking would help to preserve an agrarian lifestyle.

This vision would bolster self-sufficiency for the sub-region and a sustainable economy that would allow those people wanting to live in and preserve the lifestyle to stay and do so.

This vision would promote furthering educational pursuits while being able to stay in the area. Education would provide the technological and business skills, and hands on experience needed to create one's own work. Education would be centered on agriculture and natural systems, water and soil conservation, and alternative energy and building.

Scenario Committee Members:  
Fatou Gueye, and Jennifer Johnson

**RIO PUERCO RURAL COMMUNITIES SCENARIO (6/23/03)**

<b>GOAL</b>	<b>OBJECTIVE</b>	<b>ACTION</b>
Restore and manage the watersheds on public and private land to enhance water production, retention, and quality, to reduce the threat of wildfire, and to preserve natural systems dependent on water.	Restore a fire-adapted watershed.	<ul style="list-style-type: none"> <li>• Maintain large areas of mostly vacant and predominantly undeveloped land.</li> <li>• Limit residential development to low-density housing.</li> <li>• Create defensible spaces around all dwellings and structures</li> </ul>
Restore and manage the watersheds on public and private land to enhance water production, retention, and quality, to reduce the threat of wildfire, and to preserve natural systems dependent on water.	Decrease soil erosion and increase water infiltration.	<ul style="list-style-type: none"> <li>• Provide annual maintenance to all irrigation ditches (mains and laterals).</li> <li>• Line irrigation ditches where necessary.</li> <li>• Redirect ditches to reduce gradient where possible.</li> <li>• Use low impact agricultural methods such as shallow or no plowing.</li> <li>• Promote good soil management practices as a necessary corollary to effective water conservation plan.</li> <li>• Laser level irrigated fields.</li> <li>• Use agricultural methods that reduce water utilization.</li> <li>• Manage forage utilization to maintain ground cover that will carry fire.</li> <li>• Use BMPs to catch soils and fill arroyos.</li> <li>• Expand watershed management programs (A-33).</li> </ul>
Restore and manage the watersheds on public and private land to enhance water production, retention, and quality, to reduce the threat of wildfire, and to preserve natural systems dependent on water.	Improve water quality.	<ul style="list-style-type: none"> <li>• Prohibit development in areas within flood plains, or which have hydrologic problems (storm water ponding, poor drainage, high water table).</li> <li>• Prohibit development in wetlands or riparian areas.</li> <li>• Require sewage treatment systems in higher density communities (A-26)</li> <li>• Use constructed wetlands for final sewage treatment (A-36).</li> <li>• Remove garbage, trash, and vehicles from arroyos.</li> <li>• Carefully manage grazing in riparian areas.</li> </ul>



<b>RIO PUERCO RURAL COMMUNITIES SCENARIO (6/23/03)</b>		
<b>GOAL</b>	<b>OBJECTIVE</b>	<b>ACTION</b>
Restore and manage the watersheds on public and private land to enhance water production, retention, and quality, to reduce the threat of wildfire, and to preserve natural systems dependent on water.	Maintain and enhance native vegetation.	<ul style="list-style-type: none"> <li>• Control or eliminate invasive weeds.</li> <li>• Develop grass banks and other cooperative mechanisms to reduce grazing during drought.</li> <li>• Remove non-native vegetation from riparian areas (A-1).</li> <li>• Plant only low water use, native trees and shrubs.</li> </ul>
Support the cultural and spiritual values of water, and the universal need for and importance of water.	Create water conscious communities.	<ul style="list-style-type: none"> <li>• Promote a spring water festival in which knowledge of water as a sacred gift is restored by blessing of the local acequias and streams by priests and medicine men.</li> <li>• Promote a fall harvest festival linked to the County Fair to celebrate the perseverance and cohesion of rural agricultural communities.</li> <li>• Promote water events throughout the year to keep people focused on the importance of water and soil management.</li> </ul>
Ensure treaty, water and acequia rights to preserve and protect local agricultural traditions.	Create agriculture conscious communities.	<ul style="list-style-type: none"> <li>• “Rural Agricultural Areas” would protect and preserve areas presently and historically used for agricultural practices.</li> <li>• Develop water banking to maintain local water rights.</li> <li>• Meter all surface water diversions (A-7).</li> <li>• Meter all wells (A-7).</li> <li>• Limit wells that impair surface or groundwater (A-61).</li> </ul>
Retain land use patterns that support and ensure a rural lifestyle and economy.	Create a sustainable economy that bolsters self-sufficiency of the subregional communities.	<ul style="list-style-type: none"> <li>• Use land use planning and laws to prevent development on irrigated or non-irrigated farmland.</li> <li>• Maintain a schedule of rotation of fallow lands.</li> <li>• Require water availability before land subdivision (A-30).</li> <li>• Manage growth within the limits of water and a rural landscape (A-52).</li> <li>• Develop markets for local agricultural products (A-11).</li> <li>• Use creative marketing of livestock (organic, predator friendly, low-impact).</li> </ul>

<b>RIO PUERCO RURAL COMMUNITIES SCENARIO (6/23/03)</b>		
<b>GOAL</b>	<b>OBJECTIVE</b>	<b>ACTION</b>
		<ul style="list-style-type: none"> <li>• Promote a “Very-Small-Business Center”</li> <li>• Promote “locally-owned” businesses.</li> <li>• Provide low interest loans for enterprises that promote a rural lifestyle, cottage industries, eco-tourism, and co-operatives.</li> <li>• Promote a Farmers Market, and sale of locally grown produce and meat.</li> <li>• Promote a program that systematically fosters a greater cooperation among various sectors of the communities.</li> <li>• Maintain large areas of mostly vacant and predominantly undeveloped land.</li> <li>• Limit residential development to low-density housing.</li> </ul>
Promote conservation of water.	Create water wise communities.	<ul style="list-style-type: none"> <li>• Adopt a conservation fee added to all water systems for promotion of water conservation.</li> </ul>
Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water.	Promote public understanding of the ecology of natural and human communities.	<ul style="list-style-type: none"> <li>•</li> </ul>
Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water.	Promote public understanding of the interdependence of water management issues.	<ul style="list-style-type: none"> <li>•</li> </ul>
Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water.	Promote public understanding of benefits and means of water conservation.	<ul style="list-style-type: none"> <li>• Mulching</li> <li>• Composting</li> <li>• Swales</li> <li>• Rain barrels</li> <li>• Other catchment systems</li> </ul>
Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water.	Promote an education facility that would allow staying in the area.	<ul style="list-style-type: none"> <li>•</li> </ul>
Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water.	Promote public education that teaches the sacredness of water	<ul style="list-style-type: none"> <li>•</li> </ul>
Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water.	Promote an education system that provides technology and business skills needed to develop water and land centered occupations and enterprises.	<ul style="list-style-type: none"> <li>• Hands on training</li> <li>• Water and soil conservation methods</li> </ul>

<b>RIO PUERCO RURAL COMMUNITIES SCENARIO (6/23/03)</b>		
<b>GOAL</b>	<b>OBJECTIVE</b>	<b>ACTION</b>
Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water.	Promote an education system that trains youth to create their own occupations, mini businesses and enterprises centered on soil and water conservation and alternative energy and building methods.	•
Provide for monitoring the implementation of the water plan.	Promote public participation in the water planning process.	<ul style="list-style-type: none"> <li>• Maintain watershed steering committees.</li> <li>• Fund ongoing water planning (A-58).</li> </ul>

**RIO PUERCO DRAFT 3-SCENARIOS COMBINED CHART (6/26/03)**

<b>Goal: Restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.</b>					
<b>AR OBJECTIVE</b>	<b>AR ACTION</b>	<b>NB OBJECTIVE</b>	<b>NB ACTION</b>	<b>RC OBJECTIVE</b>	<b>RC ACTION</b>
	<ul style="list-style-type: none"> <li>•</li> </ul>	<p>In a 30-year project use new federal fuel reduction and fire prevention funds for public lands, and tax rebates and credits for private land to create many local jobs for sawyer crews, earth moving machinery, and hand crews. Additional value added industry and permanent jobs would be created to maintain this healthy watershed.</p>	<ul style="list-style-type: none"> <li>• Thin forests and woodlands in an ecologically sound manner (A-66).</li> <li>• Treat grassland brush in an ecologically sound manner.</li> <li>• Develop a network of natural and artificial fire and fuel breaks to define 5000+ acre fire management units throughout the watershed.</li> <li>• Provide for adequate fire protection of structures to facilitate burning.</li> <li>• Apply prescribed fire frequently and extensively to established fire management units.</li> </ul>	<p>Restore a fire adapted watershed.</p>	<ul style="list-style-type: none"> <li>• Create defensible spaces around all dwellings and structures.</li> </ul>

**Goal: Restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.**

<b>AR OBJECTIVE</b>	<b>AR ACTION</b>	<b>NB OBJECTIVE</b>	<b>NB ACTION</b>	<b>RC OBJECTIVE</b>	<b>RC ACTION</b>
Reduce and prevent erosion of soils, and loss of soil nutrients, topsoil and seed, to reduce general deterioration of the land, and its uses, and to increase benefit to landowners and producers.	<ul style="list-style-type: none"> <li>• Reduce and prevent surface water runoff on grazed lands resulting in sheet and rill erosion.</li> <li>• Re-establish grasses.</li> <li>• Reduce development, and increasing use of unpaved roads.</li> <li>• Improve grazing management through methods such as: fencing, pasturing, rotational grazing and other methods to reduce overgrazing.</li> <li>• Apply soil conservation techniques such as installation of field borders, and conservation or no-till methods.</li> </ul>	Within 10 years decrease soil erosion and increase water infiltration. Use funding as above.	<ul style="list-style-type: none"> <li>• Expand watershed management programs (A-33).</li> <li>• Improve storm water management (A-34).</li> <li>• Manage forage utilization to maintain ground cover and carry fire.</li> </ul>		<ul style="list-style-type: none"> <li>• Provide annual maintenance to all irrigation ditches (mains and laterals).</li> <li>• Line irrigation ditches where necessary.</li> <li>• Redirect ditches to reduce gradient where possible.</li> <li>• Use low impact agricultural methods such as shallow or no plowing.</li> <li>• Promote good soil management practices as a necessary corollary to effective water conservation plan.</li> <li>• Laser level irrigated fields.</li> </ul>
Reduce, prevent and repair incising of arroyos to raise the water table and recharge springs and seeps.	<ul style="list-style-type: none"> <li>• Reduce formation of, and stabilize head cuts, gullies and arroyos.</li> <li>• Repair deeply eroded cuts with heavy equipment.</li> </ul>		<ul style="list-style-type: none"> <li>•</li> </ul>		<ul style="list-style-type: none"> <li>• Use agricultural methods that reduce water utilization.</li> <li>• Use BMPs to catch soils and fill arroyos.</li> </ul>

<b>Goal: Restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.</b>					
<b>AR OBJECTIVE</b>	<b>AR ACTION</b>	<b>NB OBJECTIVE</b>	<b>NB ACTION</b>	<b>RC OBJECTIVE</b>	<b>RC ACTION</b>
	<ul style="list-style-type: none"> <li>• Repair smaller cuts with grade stabilization structures, weirs, net wire diversions, rock and brush dams, and other similar methods.</li> </ul>				
Provide for an increased, consistent and sustainable source of both domestic and irrigation water, and protect and improve the quality of the domestic supply from surface-water.	<ul style="list-style-type: none"> <li>• Line the ditch system and laterals with concrete or PVC pipe.</li> <li>• Construct a water storage reservoir (preferable) or other storage facility.</li> <li>• Work with relevant agencies to implement projects to thin trees and brush on public and private land.</li> <li>• Work with relevant agencies to implement controlled burn projects on public and private land, and along the irrigation ditches.</li> </ul>	Within 10 years improve water quality. Use funding from new federal & state taxes and tax incentives and rebates.	<ul style="list-style-type: none"> <li>• Use constructed wetlands for final sewage treatment (A-36).</li> <li>• Identify and protect groundwater recharge areas (A-47).</li> <li>• Clean up watercourses.</li> <li>• Limit and reduce vehicular low-water stream crossings.</li> </ul>	Improve water quality.	<ul style="list-style-type: none"> <li>• Prohibit development in areas within flood plains, or which have hydrologic problems (storm water ponding, poor drainage, high water table).</li> <li>• Prohibit development in wetlands or riparian areas.</li> <li>• Require sewage treatment systems in higher density communities (A-26)</li> <li>• Remove garbage, trash, and vehicles from arroyos.</li> <li>• Carefully manage grazing in riparian areas.</li> </ul>
Provide for an increased, consistent and sustainable sources of freshwater,	<ul style="list-style-type: none"> <li>• Drill wells for development of alternative upland water sources to</li> </ul>		<ul style="list-style-type: none"> <li>•</li> </ul>		<ul style="list-style-type: none"> <li>•</li> </ul>

<b>Goal: Restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.</b>					
<b>AR OBJECTIVE</b>	<b>AR ACTION</b>	<b>NB OBJECTIVE</b>	<b>NB ACTION</b>	<b>RC OBJECTIVE</b>	<b>RC ACTION</b>
and adequate distribution of water to achieve a balanced utilization pattern across the landscape, reduce overgrazing, and to increase size and productivity of animals.	<p>improve water availability and distribution.</p> <ul style="list-style-type: none"> <li>• Install improved well pump technology on existing wells.</li> <li>• Install water pipelines and drinking troughs.</li> <li>• Increase water availability and distribution to reduce competition for water resources between livestock and wildlife.</li> </ul>				
Reduce, prevent, and repair habitat loss along streams, ephemeral waterways, and in wetlands. Improve degraded riparian and wetland habitats to provide both winter and summer habitat for numerous wildlife species, and migratory birds, and to guard against water reduction, and loss of important plant species such as willow and cattails in drought years, and both silting up and	<ul style="list-style-type: none"> <li>• Promote wetland and riparian conservation and management prescriptions to benefit both wildlife and livestock.</li> <li>• Re-vegetate along streams and ephemeral waterways.</li> <li>• Rehabilitate freshwater areas, and plant willow and cottonwood trees at unstable banks and along non-vegetated</li> </ul>		•		•

<b>Goal: Restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.</b>					
<b>AR OBJECTIVE</b>	<b>AR ACTION</b>	<b>NB OBJECTIVE</b>	<b>NB ACTION</b>	<b>RC OBJECTIVE</b>	<b>RC ACTION</b>
scouring out of important wetlands due to flooding during years of heavy precipitation.	non-vegetated segments. <ul style="list-style-type: none"> <li>• Construct fencing to protect riparian and wetland areas, and plantings from livestock.</li> <li>• Stabilize channel banks by installing J-Hooks and other similar structures.</li> <li>• Re-create and induce stream meanders.</li> </ul>				
Enhance the ecology of the rangeland ecosystem to benefit the watersheds. Increase both the bio-diversity of rangelands, and production of croplands. Increase forage, native grass production, and groundcover. Remove non-native and invasive species.	<ul style="list-style-type: none"> <li>• Work with relevant agencies to manage sagebrush monocultures and reduce numbers of juniper trees.</li> <li>• Seed with native grasses.</li> <li>• Use various methods to reduce competition for forage between livestock and wildlife.</li> <li>• Improve grazing management through methods such as: fencing, pasturing,</li> </ul>	Within 20 years enhance and maintain native vegetation by legislated land use. Remove non-native vegetation from riparian areas using work corps and student labor.	<ul style="list-style-type: none"> <li>• Control or eliminate invasive weeds.</li> <li>• Develop grass banks and other cooperative mechanisms to reduce grazing during drought.</li> <li>• Remove non-native vegetation from riparian areas (A-1).</li> <li>• Carefully manage grazing in riparian areas.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Plant only low water use, native trees and shrubs.</li> </ul>



<b>Goal: Restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.</b>					
<b>AR OBJECTIVE</b>	<b>AR ACTION</b>	<b>NB OBJECTIVE</b>	<b>NB ACTION</b>	<b>RC OBJECTIVE</b>	<b>RC ACTION</b>
	rotational grazing and other methods to reduce overgrazing.				

<b>Goal: Retain land use patterns that support and ensure a rural lifestyle and economy.</b>					
<b>AR OBJECTIVE</b>	<b>AR ACTION</b>	<b>NB OBJECTIVE</b>	<b>NB ACTION</b>	<b>RC OBJECTIVE</b>	<b>RC ACTION</b>
Develop a local economy that would help prevent loss of the agrarian lifestyle. Studies show a close link between detrimental impacts to the local ecology and economic losses of local producers.	<ul style="list-style-type: none"> <li>• Develop local agricultural cooperatives that will promote and sustain agriculture through education, financial support, improved farming methods, crop diversity, shared use of equipment and teaching the communities children about the importance and benefit of agriculture and good agricultural conservation methods.</li> <li>• Promote development of a diversity of crop markets including; native and traditional crops, contemporary crops, and new and emerging crops.</li> <li>• Implement new farming technologies that will help to increase production.</li> <li>• Work with local banks and Acequia Associations to aid local agricultural producers who lack financial resources.</li> <li>• Plan rotation of fallow acres to benefit soil health and water management.</li> </ul>	Within 50 years water use will match water supply. This will be accomplished by statutes, as above, and rigorous integration of county, state, & federal policies.	<ul style="list-style-type: none"> <li>• Develop protective zoning for acequia-irrigated lands.</li> <li>• Authorize no well permits on tracts of less than 40 acres (A-61).</li> </ul>	Create a sustainable economy that bolsters self-sufficiency of the subregional communities.	<ul style="list-style-type: none"> <li>• Use land use planning and laws to prevent development on irrigated or non-irrigated farmland.</li> <li>• Maintain a schedule of rotation of fallow lands.</li> <li>• Require water availability before land subdivision (A-30).</li> <li>• Manage growth within the limits of water and a rural landscape (A-52).</li> <li>• Develop markets for local agricultural products (A-11).</li> <li>• Use creative marketing of livestock (organic, predator friendly, low-impact).</li> <li>• Promote a “Very-Small-Business Center”</li> <li>• Promote “locally-owned” businesses.</li> <li>• Provide low interest loans for enterprises that promote a rural lifestyle, cottage industries, eco-</li> </ul>

<b>Goal: Retain land use patterns that support and ensure a rural lifestyle and economy.</b>					
<b>AR OBJECTIVE</b>	<b>AR ACTION</b>	<b>NB OBJECTIVE</b>	<b>NB ACTION</b>	<b>RC OBJECTIVE</b>	<b>RC ACTION</b>
	<ul style="list-style-type: none"> <li>• Reduce the amount of presently fallow cropland, and prevent further cropland being taken out of production.</li> <li>• Develop a consistent and sustained supply, and distribution of irrigation water.</li> </ul>				tourism, and co-operatives. <ul style="list-style-type: none"> <li>• Promote a Farmers Market, and sale of locally grown produce and meat.</li> <li>• Promote a program that systematically fosters a greater cooperation among various sectors of the communities.</li> <li>• Maintain large areas of mostly vacant and predominantly undeveloped land.</li> <li>• Limit residential development to low-density housing.</li> </ul>
Increase efficiency of irrigation ditch system.	<ul style="list-style-type: none"> <li>• Repair and construct head-gates and farm gates for water control.</li> <li>• Reduce and prevent increased incision of irrigation ditches which causes channelization and makes application of water to fields difficult or impossible.</li> <li>• Line the ditch system, or segments most prone to erosion, with concrete or PVC pipe.</li> <li>• Re-contour segments of ditches that have become channelized.</li> <li>• Repair blown out culverts and broken flumes which add to soil erosion when water bypasses them to reach the</li> </ul>		<ul style="list-style-type: none"> <li>•</li> </ul>		<ul style="list-style-type: none"> <li>•</li> </ul>

<b>Goal: Retain land use patterns that support and ensure a rural lifestyle and economy.</b>					
<b>AR OBJECTIVE</b>	<b>AR ACTION</b>	<b>NB OBJECTIVE</b>	<b>NB ACTION</b>	<b>RC OBJECTIVE</b>	<b>RC ACTION</b>
	grade beyond. <ul style="list-style-type: none"> <li>• Laser level fields to provide a topography that increases the efficient application of water, and reduces sheet and rill erosion.</li> </ul>				

<b>Goal: Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water.</b>					
<b>AR OBJECTIVE</b>	<b>AR ACTION</b>	<b>NB OBJECTIVE</b>	<b>NB ACTION</b>	<b>RC OBJECTIVE</b>	<b>RC ACTION</b>
	<ul style="list-style-type: none"> <li>• Educate landowners and ranchers about erosion factors, and methods to reduce or prevent it.</li> <li>• Educate landowners and ranchers about improved methods of livestock handling.</li> <li>• Educate landowners and farmers about improved methods of agriculture.</li> <li>• Educate landowners and ranchers about the</li> </ul>	Within 50 years the public will gain understanding of the interdependence of natural and human communities. Funding will support this education process (as above).	<ul style="list-style-type: none"> <li>• Promote understanding of the central roles of climate and fire in the ecology of natural communities.</li> <li>• Promote understanding of the roles of watersheds to store and release winter snowmelt and dissipate summer downpours.</li> <li>• Promote understanding of the natural limits to the</li> </ul>	Promote public understanding of the ecology of natural and human communities.	<ul style="list-style-type: none"> <li>• Promote understanding of the natural limits to the productivity of land, and plant, wildlife and human dependence on it.</li> <li>• Promote the perception of healthy land and healthy watersheds as personal and community wealth.</li> <li>• Develop school curricula and outdoor projects on these subjects.</li> </ul>

<b>Goal: Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water.</b>					
<b>AR OBJECTIVE</b>	<b>AR ACTION</b>	<b>NB OBJECTIVE</b>	<b>NB ACTION</b>	<b>RC OBJECTIVE</b>	<b>RC ACTION</b>
	<p>importance of riparian and wetland areas.</p> <ul style="list-style-type: none"> <li>Educate landowners and producers about relevant contemporary farming technologies and practices, and expanding crop markets.</li> <li>Work with local schools to involve children and young adults in agriculture.</li> </ul>		<p>productivity of land, and plant, wildlife and human dependence on it.</p>		
	<ul style="list-style-type: none"> <li></li> </ul>	<p>Over the next 50 years public understanding of &amp; participation in water management will grow via education and local water assemblies.</p>	<ul style="list-style-type: none"> <li>Ensure continued public participation in water issues (A-53).</li> </ul>	<p>Promote public understanding of the interdependence of water management issues.</p>	<ul style="list-style-type: none"> <li>Encourage appreciation of the interrelationship of water and land management in watersheds.</li> </ul>
	<ul style="list-style-type: none"> <li></li> </ul>	<p>Over the next 50 years public understanding of water conservation will grow.</p>	<ul style="list-style-type: none"> <li>Disseminate water-saving information (A-56)</li> <li>Develop school curricula concerning water conservation (A-56).</li> </ul>	<p>Promote public understanding of benefits and means of water conservation.</p>	<ul style="list-style-type: none"> <li>Mulching</li> <li>Composting</li> <li>Swales</li> <li>Rain barrels</li> <li>Other catchment systems</li> </ul>
	<ul style="list-style-type: none"> <li></li> </ul>		<ul style="list-style-type: none"> <li></li> </ul>	<p>Promote an education facility that would allow staying in the area.</p>	<ul style="list-style-type: none"> <li></li> </ul>
	<ul style="list-style-type: none"> <li></li> </ul>		<ul style="list-style-type: none"> <li></li> </ul>	<p>Promote public education that teaches the sacredness of water</p>	<ul style="list-style-type: none"> <li></li> </ul>

<b>Goal: Promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water.</b>					
<b>AR OBJECTIVE</b>	<b>AR ACTION</b>	<b>NB OBJECTIVE</b>	<b>NB ACTION</b>	<b>RC OBJECTIVE</b>	<b>RC ACTION</b>
	•		•	Promote an education system that provides technology and business skills needed to develop water and land centered occupations and enterprises.	<ul style="list-style-type: none"> <li>• Hands on training</li> <li>• Water and soil conservation methods</li> </ul>
	•		•	Promote an education system that trains youth to create their own occupations, mini businesses/enterprises centered on soil and water conservation, alternative energy, building methods.	•

<b>Goal: Support the cultural and spiritual values of water, and the universal need for and importance of water.</b>					
<b>AR OBJECTIVE</b>	<b>AR ACTION</b>	<b>NB OBJECTIVE</b>	<b>NB ACTION</b>	<b>RC OBJECTIVE</b>	<b>RC ACTION</b>

<b>Goal: Support the cultural and spiritual values of water, and the universal need for and importance of water.</b>					
<b>AR OBJECTIVE</b>	<b>AR ACTION</b>	<b>NB OBJECTIVE</b>	<b>NB ACTION</b>	<b>RC OBJECTIVE</b>	<b>RC ACTION</b>
	<ul style="list-style-type: none"> <li>•</li> </ul>	Within 30 years integrate community and spiritual leaders around water and land care. Within 10 years ensure every education level includes water and land use curricula.	<ul style="list-style-type: none"> <li>• Promote appreciation of the dependence of all life on water.</li> <li>• Promote the sanctity of watercourses.</li> <li>• Authorize in-stream flow as a beneficial use (A-63).</li> <li>• Develop public parks and interpretive areas along perennial streams near villages.</li> <li>• Develop adopt-a-watercourse programs.</li> <li>• Develop community gardens.</li> </ul>	Create water conscious communities.	<ul style="list-style-type: none"> <li>• Promote a spring water festival in which knowledge of water as a sacred gift is restored by blessing of the local acequias and streams by priests and medicine men.</li> <li>• Promote a fall harvest festival linked to the County Fair to celebrate the perseverance and cohesion of rural agricultural communities.</li> <li>• Promote water events throughout the year to keep people focused on the importance of water and soil management.</li> </ul>

<b>Goal: Ensure treaty, water and acequia rights to preserve and protect local agricultural traditions.</b>					
<b>AR OBJECTIVE</b>	<b>AR ACTION</b>	<b>NB OBJECTIVE</b>	<b>NB ACTION</b>	<b>RC OBJECTIVE</b>	<b>RC ACTION</b>
		Within 30 years have Legislators at every level integrate water protection into current & new statutes.	<ul style="list-style-type: none"> <li>• Form local agricultural cooperatives to maintain productivity of agricultural lands in local communities.</li> <li>• Support acequia and agricultural land improvement programs.</li> <li>• Develop mechanisms to prevent transfer of surface and ground water rights from their locality.</li> <li>• Solicit funds from state and federal government agencies to</li> </ul>	Create agriculture conscious communities.	<ul style="list-style-type: none"> <li>• “Rural Agricultural Areas” would protect and preserve areas presently and historically used for agricultural practices.</li> <li>• Develop water banking to maintain local water rights.</li> <li>• Meter all surface water diversions (A-7).</li> <li>• Meter all wells (A-7).</li> <li>• Limit wells that impair surface or groundwater (A-61).</li> </ul>

<b>Goal: Ensure treaty, water and acequia rights to preserve and protect local agricultural traditions.</b>					
<b>AR OBJECTIVE</b>	<b>AR ACTION</b>	<b>NB OBJECTIVE</b>	<b>NB ACTION</b>	<b>RC OBJECTIVE</b>	<b>RC ACTION</b>
			map, catalog, and describe acequias including annual water use.		

<b>Goal: Promote conservation of water.</b>					
<b>AR OBJECTIVE</b>	<b>AR ACTION</b>	<b>NB OBJECTIVE</b>	<b>NB ACTION</b>	<b>RC OBJECTIVE</b>	<b>RC ACTION</b>
		Over the next 50 years key federal legislation, tax incentives and credits, and funding will guide water use reduction in a trickle down fashion to the state level, and similarly from state level to local levels.	<ul style="list-style-type: none"> <li>• Develop local water conservation and drought plans (A-18).</li> <li>• Promote projects to increase irrigation efficiency (A-10).</li> <li>• Fund acequias to increase operating efficiency (A-60).</li> <li>• Reduce artificial open water evaporation (A-45).</li> <li>• Fund domestic water cooperatives to improve their water systems.</li> <li>• Adopt graduated water rates in all domestic systems (A-21).</li> <li>• Promote adoption of domestic water-saving technologies (A-22).</li> <li>• Promote greywater reuse (A-24).</li> <li>• Develop water budget to understand water recharge and water use.</li> </ul>	Create water wise communities.	<ul style="list-style-type: none"> <li>• Adopt a conservation fee added to all water systems for promotion of water conservation.</li> <li>• Encourage rainwater harvesting (A-44).</li> </ul>

**Goal: Provide for monitoring the implementation of the water plan.**

AR OBJECTIVE	AR ACTION	NB OBJECTIVE	NB ACTION	RC OBJECTIVE	RC ACTION
	<ul style="list-style-type: none"> <li>•</li> </ul>	<p>For some years (within 20 years) legislation will create and support citizen water assemblies/forums until their functions can be integrated into all levels of executive and legislative branches.</p>	<ul style="list-style-type: none"> <li>• Increase monitoring and modeling of surface and groundwater (A-38) using state and federal support.</li> <li>• Develop geographic watershed information system (A-73).</li> </ul>	<p>Promote public participation in the water planning process.</p>	<ul style="list-style-type: none"> <li>• Maintain watershed steering committees.</li> <li>• Fund ongoing water planning (A-58).</li> </ul>



**DRAFT RIO PUERCO SUB-REGIONAL SCENARIO: 2003-2050. (6/26/03)**

<b>GOAL: RESTORE AND MANAGE THE WATERSHEDS ON PUBLIC AND PRIVATE LAND TO ENHANCE WATER RETENTION AND QUALITY AND TO REDUCE THE THREAT OF WILDFIRE, AND TO PRESERVE NATURAL SYSTEMS DEPENDENT ON WATER.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Restore a fire-adapted watershed.</li> </ul>	<ul style="list-style-type: none"> <li>• Thin forests and woodlands in an ecologically sound manner (A-66).</li> <li>• Treat grassland brush in an ecologically sound manner.</li> <li>• Develop a network of natural and artificial fire and fuel breaks to define 5000+ acre fire management units throughout the watershed.</li> <li>• Provide for adequate fire protection of structures to facilitate burning.</li> <li>• Apply prescribed fire frequently and extensively to established fire management units.</li> <li>• Create defensible spaces around all dwellings and structures.</li> <li>• Manage forage utilization to maintain ground cover and carry fire.</li> </ul>	<ul style="list-style-type: none"> <li>• 30-year project</li> </ul>	<ul style="list-style-type: none"> <li>• New federal fuel reduction and fire prevention funds for public lands.</li> <li>• Tax rebates and credits for private land</li> </ul>	<ul style="list-style-type: none"> <li>• Create many local jobs for sawyer crews, earth moving machinery, and hand crews.</li> <li>• Additionally value added industry, and permanent jobs would be created to maintain a healthy watershed.</li> </ul>
<ul style="list-style-type: none"> <li>• Decrease soil erosion and increase water retention and infiltration.</li> </ul>	<ul style="list-style-type: none"> <li>• Expand watershed management programs (A-33).</li> <li>• Promote good soil management practices as a necessary corollary to an effective water conservation plan.</li> <li>• Reduce and prevent surface water runoff on grazed lands resulting in sheet and rill erosion.</li> <li>• Reduce development, and increasing use of unpaved roads.</li> <li>• Use low impact agricultural methods such as shallow or no plowing.</li> <li>• Apply soil conservation techniques such as installation of field borders, and conservation or no-till</li> </ul>	<ul style="list-style-type: none"> <li>• Within 10 years</li> </ul>	<ul style="list-style-type: none"> <li>• New federal fuel reduction and fire prevention funds for public lands.</li> <li>• Tax rebates and credits for private land</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce general deterioration of the land, and its uses, and increase benefit to landowners and producers.</li> <li>• Retain soil nutrients, topsoil and seed.</li> </ul>

<b>GOAL: RESTORE AND MANAGE THE WATERSHEDS ON PUBLIC AND PRIVATE LAND TO ENHANCE WATER RETENTION AND QUALITY AND TO REDUCE THE THREAT OF WILDFIRE, AND TO PRESERVE NATURAL SYSTEMS DEPENDENT ON WATER.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	<p>methods.</p> <ul style="list-style-type: none"> <li>• Improve grazing management through methods such as: fencing, pasturing, rotational grazing and other methods to reduce overgrazing.</li> <li>• Laser level irrigated fields.</li> <li>• Line the ditch system, or segments most prone to erosion, with concrete or PVC pipe.</li> <li>• Establish groundcover on rangeland.</li> </ul>			
<ul style="list-style-type: none"> <li>• Reduce, prevent and repair incising of arroyos to raise the water table and recharge springs and seeps.</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce formation of, and stabilize head cuts, gullies and arroyos.</li> <li>• Repair deeply eroded cuts with heavy equipment.</li> <li>• Repair smaller cuts with grade stabilization structures, weirs, net wire diversions, rock and brush dams, and other similar methods.</li> <li>• Use BMPs to catch soils and fill arroyos.</li> </ul>	<ul style="list-style-type: none"> <li>• Within 30 years</li> </ul>	<ul style="list-style-type: none"> <li>• New federal fuel reduction and fire prevention funds for public lands.</li> <li>• Tax rebates and credits for private land</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce general deterioration of the land, and its uses.</li> <li>• Retain soil nutrients, topsoil and seed.</li> <li>• Increase benefit to landowners and producers.</li> </ul>
<ul style="list-style-type: none"> <li>• Rehabilitate freshwater areas. Reduce, prevent, and repair habitat loss along streams, ephemeral waterways, and in wetlands.</li> </ul>	<ul style="list-style-type: none"> <li>• Re-vegetate along streams and ephemeral waterways, plant willow and cottonwood trees at unstable banks and along non-vegetated segments.</li> <li>• Construct fencing to protect riparian and wetland areas, and plantings from livestock.</li> <li>• Stabilize channel banks by installing J-Hooks and other similar structures.</li> <li>• Re-create and induce stream meanders.</li> <li>• Prohibit development in areas within flood plains, or which have hydrologic problems (storm water</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Guard against water reduction, and loss of important plant species such as willow and cattails in drought years, and both silting up and scouring out of important wetlands due to flooding during years of heavy precipitation.</li> <li>• Improve degraded riparian and wetland habitats to provide both winter and summer habitat for numerous wildlife species, and migratory birds</li> </ul>

<b>GOAL: RESTORE AND MANAGE THE WATERSHEDS ON PUBLIC AND PRIVATE LAND TO ENHANCE WATER RETENTION AND QUALITY AND TO REDUCE THE THREAT OF WILDFIRE, AND TO PRESERVE NATURAL SYSTEMS DEPENDENT ON WATER.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	ponding, poor drainage, high water table). <ul style="list-style-type: none"> <li>Prohibit development in wetlands or riparian areas.</li> </ul>			
<ul style="list-style-type: none"> <li>Increase both the biodiversity and production of rangelands, and croplands.</li> </ul>	<ul style="list-style-type: none"> <li>Work with relevant agencies to manage sagebrush monocultures and reduce numbers of juniper trees.</li> <li>Control or eliminate noxious, invasive, and non-native weed species (A-1).</li> <li>Seed with native grasses, and plants.</li> <li>Develop grass banks and other cooperative mechanisms to reduce grazing during drought.</li> </ul>	<ul style="list-style-type: none"> <li>Within 20 years</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li>Benefit the watersheds.</li> <li>Using work corps and student labor, remove non-native vegetation from riparian areas.</li> <li>Increase forage, native grass production, and groundcover.</li> <li>Increase benefit to landowners and producers.</li> </ul>
<ul style="list-style-type: none"> <li>Provide for an increased, consistent and sustainable source, and adequate distribution of rangeland water.</li> </ul>	<ul style="list-style-type: none"> <li>Drill wells for development of alternative upland water.</li> <li>Install improved well pump technology on existing wells.</li> <li>Install water pipelines and drinking troughs.</li> <li>Use various methods to reduce competition for forage between livestock and wildlife.</li> <li>Prohibit sale of water out of subregion.</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li>Reduce general deterioration of the land, and its uses.</li> <li>Increase water availability and distribution to reduce competition for water resources between livestock and wildlife.</li> <li>Achieve a balanced animal-use pattern across the landscape to reduce overgrazing, and increase size and productivity of wildlife and livestock.</li> </ul>

<b>GOAL: SUPPORT THE CULTURAL AND SPIRITUAL VALUES OF WATER, AND THE UNIVERSAL NEED FOR AND IMPORTANCE OF WATER.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li>Promote appreciation of the dependence of all life on water.</li> <li>Promote the sanctity of</li> </ul>	<ul style="list-style-type: none"> <li>Within 30 years integrate community and spiritual leaders</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>

<b>GOAL: SUPPORT THE CULTURAL AND SPIRITUAL VALUES OF WATER, AND THE UNIVERSAL NEED FOR AND IMPORTANCE OF WATER.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	watercourses. <ul style="list-style-type: none"> <li>• Promote a spring water festival in which knowledge of water as a sacred gift is restored by blessing of the local acequias and streams by priests and medicine men.</li> <li>• Promote a fall harvest festival linked to the County Fair to celebrate the perseverance and cohesion of rural agricultural communities.</li> <li>• Promote water events throughout the year to keep people focused on the importance of water and soil management.</li> <li>• Develop public parks and interpretive areas along perennial streams near villages.</li> <li>• Develop adopt-a-watercourse programs.</li> <li>• Develop community gardens.</li> </ul>	around water and land care.		

<b>GOAL: ENSURE TREATY, WATER AND ACEQUIA RIGHTS TO PRESERVE AND PROTECT LOCAL AGRICULTURAL TRADITIONS.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Create agriculture conscious communities.</li> </ul>	<ul style="list-style-type: none"> <li>• Form local agricultural cooperatives to maintain productivity of agricultural lands in local communities.</li> <li>• Support acequia and agricultural land improvement programs.</li> <li>• Develop mechanisms to prevent transfer of surface and ground water rights from their locality. (Prohibit sale of water out of subregion).</li> <li>• Solicit funds from state and federal government agencies to map, catalog, and describe acequias including annual water use.</li> <li>• “Rural Agricultural Areas” would protect and preserve areas presently and historically used for agricultural practices.</li> <li>• Develop water banking to maintain local water rights.</li> <li>• Meter all surface water diversions (A-7).</li> <li>• Authorize in-stream flow as a beneficial use (A-63).</li> <li>• Address ground/surface water interactions in state water-rights statutes (A-144).</li> <li>• Identify, quantify, and adjudicate surface water rights and order of wet water utilization (A-71)</li> </ul>	<ul style="list-style-type: none"> <li>• Within 30 years have Legislators at every level integrate protection of water for agriculture into current and new statutes.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>

<b>GOAL: RETAIN LAND USE PATTERNS THAT SUPPORT AND ENSURE A RURAL LIFESTYLE AND ECONOMY.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Protect and improve the quality of the domestic supply of surface and ground</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and protect groundwater recharge areas (A-47).</li> <li>• Limit and reduce vehicular low-</li> </ul>	<ul style="list-style-type: none"> <li>• Within 10 years</li> </ul>	<ul style="list-style-type: none"> <li>• New federal &amp; state taxes and tax incentives and rebates.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>

<b>GOAL: RETAIN LAND USE PATTERNS THAT SUPPORT AND ENSURE A RURAL LIFESTYLE AND ECONOMY.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
water.	water stream crossings. <ul style="list-style-type: none"> <li>• Clean up watercourses, remove garbage, trash, and vehicles from arroyos.</li> <li>• Require sewage treatment systems in higher density communities (A-26).</li> <li>• Use constructed wetlands for final sewage treatment (A-36).</li> <li>• Remove trace elements.</li> </ul>			
<ul style="list-style-type: none"> <li>• Provide for increased, consistent and sustainable sources of both domestic and irrigation water.</li> </ul>	<ul style="list-style-type: none"> <li>• Work with relevant agencies to implement projects to thin trees and brush on public and private land.</li> <li>• Work with relevant agencies to implement controlled burn projects on public and private land, and along the irrigation ditches.</li> <li>• Construct water storage reservoirs or other storage facility.</li> <li>• Install Domestic supply wells.</li> <li>•</li> <li>• Identify and provide for residential fire-fighting water.</li> </ul>	<ul style="list-style-type: none"> <li>• Within 10 years</li> </ul>	<ul style="list-style-type: none"> <li>• New federal &amp; state taxes and tax incentives and rebates.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
<ul style="list-style-type: none"> <li>• A program that systematically fosters a greater cooperation among various sectors of the communities with water as a primary focus.</li> </ul>	<ul style="list-style-type: none"> <li>• Manage growth within the limits of water, and a rural landscape (A-52).</li> <li>• Adopt policies to integrate land use planning and water resource management (A-30).</li> <li>• Maintain large areas of mostly vacant and predominantly undeveloped land.</li> <li>• Authorize no well permits on tracts of less than 40 acres.</li> <li>• Require water availability before land subdivision.</li> <li>• Limit residential development to low-density housing.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>

<b>GOAL: RETAIN LAND USE PATTERNS THAT SUPPORT AND ENSURE A RURAL LIFESTYLE AND ECONOMY.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Create a sustainable economy that bolsters self-sufficiency of the subregional communities, and helps prevent loss of the agrarian lifestyle.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop local agricultural cooperatives.</li> <li>• Develop markets for local agricultural products (A-11).</li> <li>• Promote a Farmers' Market, and sale of locally grown produce and meat.</li> <li>• Use creative marketing of livestock (organic, predator friendly, low-impact).</li> <li>• Promote development of a diversity of crop markets including; native and traditional crops, contemporary crops, and new and emerging crops.</li> <li>• Implement new farming technologies that will help to increase production.</li> <li>• Plan and maintain a schedule for rotation of fallow acres.</li> <li>• Reduce the amount of presently fallow cropland, and prevent further cropland being taken out of production.</li> </ul>	<ul style="list-style-type: none"> <li>• Within 50 years</li> </ul>	<ul style="list-style-type: none"> <li>• Accomplished by passage of state statutes, and rigorous integration of county, state, &amp; federal policies and process.</li> <li>• Promote a "Very-Small-Business Center".</li> <li>• Promote "locally-owned" businesses.</li> <li>• Work with local banks, Acequia, and Stockmen Associations to aid local agricultural producers who lack financial resources.</li> <li>• Provide low interest loans for enterprises that promote a rural lifestyle, cottage industries, eco-tourism, and co-operatives.</li> </ul>	<ul style="list-style-type: none"> <li>• Water use will match water supply.</li> <li>• Agricultural Cooperatives will promote and sustain agriculture through:.</li> <li>• Education, financial support, improved farming methods, crop diversity, shared use of equipment and teaching children about the importance and benefit of agriculture, and good agricultural conservation methods.</li> </ul>
<ul style="list-style-type: none"> <li>• Increase efficiency of irrigation ditch system.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop protective zoning for acequia irrigated lands.</li> <li>• Use land use planning, and laws to prevent development on irrigated or non-irrigated farmland.</li> <li>• Prohibit sale of water out of subregion.</li> <li>• Develop a consistent and sustained supply, and distribution of irrigation water.</li> <li>• Provide annual maintenance to all irrigation ditches (mains and laterals).</li> <li>• Repair and construct head, and farm gates for water control.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Provide a topography that makes application of water to fields more.</li> <li>• Reduce sheet and rill erosion which causes channelization.</li> </ul>

<b>GOAL: RETAIN LAND USE PATTERNS THAT SUPPORT AND ENSURE A RURAL LIFESTYLE AND ECONOMY.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	<ul style="list-style-type: none"> <li>• Line irrigation ditch systems and laterals, where necessary, with concrete or PVC pipe.</li> <li>• Repair blown out culverts and broken flumes.</li> <li>• Redirect ditches to reduce gradient where possible.</li> <li>• Reduce and prevent increased incising of irrigation ditches.</li> <li>• Re-contour segments of ditches that have become channelized.</li> </ul>			

<b>GOAL: PROMOTE CONSERVATION OF WATER.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Water wise residents and communities.</li> </ul>	<ul style="list-style-type: none"> <li>• Disseminate water-saving information (A-56).</li> <li>• Develop water budget to understand water recharge and water use.</li> <li>• Develop local water conservation and drought plans (A-18).</li> <li>• Fund domestic water cooperatives to improve their water systems.</li> <li>• Fund acequias to increase operating efficiency (A-60).</li> <li>• Adopt graduated water rates in all domestic systems (A-21).</li> <li>• Adopt a conservation fee added to all water systems for promotion of water conservation.</li> <li>• Promote adoption of domestic water-saving technologies (A-22).</li> <li>• Promote greywater reuse (A-24).</li> <li>• Encourage rainwater harvesting (A-44).</li> <li>• Improve storm water management (A-34).</li> </ul>	<ul style="list-style-type: none"> <li>• Over the next 50 years.</li> </ul>	<ul style="list-style-type: none"> <li>• Guide water use reduction in a trickle down fashion to the state level, and similarly from state level to local levels.</li> <li>• Key federal legislation.</li> <li>• Tax incentives and credits.</li> <li>• Funding</li> </ul>	<ul style="list-style-type: none"> <li>• Public understanding of water conservation will increase.</li> </ul>



<b>GOAL: PROMOTE CONSERVATION OF WATER.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	<ul style="list-style-type: none"> <li>• Use agricultural methods that reduce water utilization.</li> <li>• Reduce water loss in acequias.</li> <li>• Promote projects to increase irrigation efficiency (A-10).</li> <li>• Reduce artificial open water evaporation (A-45).</li> <li>• Meter all water supply wells (A-8).</li> <li>• Limit wells that could impair surface or groundwater (A-61).</li> <li>• Capture flood flows.</li> </ul>			

<b>GOAL: PROMOTE EDUCATION FOR AREA RESIDENTS REGARDING THE CONNECTION BETWEEN LAND USE, WATER AND ENVIRONMENTAL HEALTH, AND WAYS TO CONSERVE WATER.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>

**GOAL: PROMOTE EDUCATION FOR AREA RESIDENTS REGARDING THE CONNECTION BETWEEN LAND USE, WATER AND ENVIRONMENTAL HEALTH, AND WAYS TO CONSERVE WATER.**

<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Create water conscious communities by providing education centered on soil and water conservation, and alternative energy and building methods.</li> <li>• Studies show a close link between detrimental impacts to the local ecology and economic losses of local producers.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop school curricula and outdoor projects on these subjects.</li> <li>• Develop school curricula concerning water conservation (A-56).</li> <li>• Develop school curricula concerning water conservation methods, such as, mulching, composting, swales, rain barrels and other catchment systems, and uses hands on training.</li> <li>• Work with local schools to involve children and young adults in agriculture.</li> </ul>	<ul style="list-style-type: none"> <li>• Within 10 years ensure every education level includes water and land use curricula.</li> </ul>	<ul style="list-style-type: none"> <li>• Funding will support this education process (as above).</li> </ul>	<ul style="list-style-type: none"> <li>• Public understanding of the:.</li> <li>• idea of healthy land and healthy watersheds as personal and community wealth.</li> <li>• sacredness of water.</li> <li>• interrelationship of water and land management in watersheds.</li> <li>• roles of watersheds to store and release winter snowmelt and dissipate summer downpours.</li> <li>• central roles of climate and fire in the ecology of natural communities.</li> <li>• natural limits to the productivity of land.</li> <li>• natural limits to plant, wildlife and human dependence on land.</li> <li>• factors conducive to erosion, and methods to reduce or prevent it.</li> <li>• importance of riparian and wetland areas.</li> <li>• alternative methods of livestock handling, such as: fencing, pasturing, rotational grazing and other methods to reduce overgrazing and erosion.</li> <li>• relevant contemporary farming technologies and practices, such as: low impact</li> </ul>

**GOAL: PROMOTE EDUCATION FOR AREA RESIDENTS REGARDING THE CONNECTION BETWEEN LAND USE, WATER AND ENVIRONMENTAL HEALTH, AND WAYS TO CONSERVE WATER.**

OBJECTIVE	ACTIONS	LENGTH	FUNDING/POLICIES	BENEFITS
				agricultural methods-shallow or no plowing-, alternative and expanding crop markets. <ul style="list-style-type: none"> <li>• benefits, and means of water conservation.</li> </ul>

**GOAL: PROMOTE EDUCATION FOR AREA RESIDENTS REGARDING THE CONNECTION BETWEEN LAND USE, WATER AND ENVIRONMENTAL HEALTH, AND WAYS TO CONSERVE WATER.**

<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Provide a secondary education facility.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Funding will support this education facility (as above).</li> </ul>	<ul style="list-style-type: none"> <li>• Allow local residents to stay in the area.</li> <li>• Teach technology and business skills needed to develop water and land centered occupations and enterprises.</li> <li>• Train youth to create occupations, mini businesses and enterprises.</li> </ul>

**GOAL: PROVIDE FOR MONITORING THE IMPLEMENTATION OF THE WATER PLAN.**

<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Public participation in the water planning process and water management.</li> </ul>	<ul style="list-style-type: none"> <li>• Increase monitoring and modeling of surface and groundwater (A-38).</li> <li>• Develop geographic watershed information system (A-73).</li> <li>• Maintain watershed steering committees.</li> <li>• Fund ongoing water planning (A-58).</li> <li>• Ensure continued public participation in water issues (A-53) through local water assemblies.</li> </ul>	<ul style="list-style-type: none"> <li>• Within 20 years</li> </ul>	<ul style="list-style-type: none"> <li>• Use state and federal support.</li> <li>• Legislation will create and support citizen water assemblies/forums until their functions can be integrated into all levels of executive and legislative branches</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>

## RIO PUERCO RIO JEMEZ SUBREGIONS COMBINED SCENARIO SEQUENCE

### DRAFT COMBINED RIO PUERCO y RIO JEMEZ SUBREGIONAL SCENARIO: 2003-2050 (9-17-03)

<b>Goal: restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Restore a fire-adapted watershed.</li> </ul>	<ul style="list-style-type: none"> <li>• Thin forests and woodlands in an ecologically sound manner (A-66).</li> <li>• Treat grassland brush in an ecologically sound manner.</li> <li>• Develop a network of natural and artificial fire and fuel breaks to define 5000+ acre fire management units throughout the watershed.</li> <li>• Provide for adequate fire protection of structures to facilitate burning.</li> <li>• Apply prescribed fire frequently and extensively to established fire management units.</li> <li>• Create defensible spaces around all dwellings and structures.</li> <li>• Manage forage utilization to maintain ground cover and carry fire.</li> </ul>	<ul style="list-style-type: none"> <li>• 30-year project</li> </ul>	<ul style="list-style-type: none"> <li>• New federal fuel reduction and fire prevention funds for public lands.</li> <li>• Tax rebates and credits for private land</li> </ul>	<ul style="list-style-type: none"> <li>• Create many local jobs for sawyer crews, earth moving machinery, and hand crews.</li> <li>• Additionally value added industry, and permanent jobs would be created to maintain a healthy watershed.</li> </ul>
<ul style="list-style-type: none"> <li>• Decrease soil erosion and increase water retention and infiltration.</li> </ul>	<ul style="list-style-type: none"> <li>• Expand watershed management programs (A-33).</li> <li>• Promote good soil management practices as a necessary corollary to an effective water conservation plan.</li> <li>• Reduce and prevent surface water runoff on grazed lands resulting in sheet and rill erosion.</li> <li>• Reduce development, and increasing use of unpaved roads.</li> <li>• Use low impact agricultural</li> </ul>	<ul style="list-style-type: none"> <li>• Within 10 years</li> </ul>	<ul style="list-style-type: none"> <li>• New federal fuel reduction and fire prevention funds for public lands.</li> <li>• Tax rebates and credits for private land</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce general deterioration of the land, and its uses, and increase benefit to landowners and producers.</li> <li>• Retain soil nutrients, topsoil and seed.</li> </ul>

<b>Goal: restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	<p>methods such as shallow or no plowing.</p> <ul style="list-style-type: none"> <li>• Apply soil conservation techniques such as installation of field borders, and conservation or no-till methods.</li> <li>• Improve grazing management through methods such as: fencing, pasturing, rotational grazing and other methods to reduce overgrazing.</li> <li>• Laser level irrigated fields.</li> <li>• Line the ditch system, or segments most prone to erosion, with concrete or PVC pipe.</li> <li>• Establish groundcover on rangeland.</li> </ul>			
<ul style="list-style-type: none"> <li>• Reduce, prevent and repair incising of arroyos to raise the water table and recharge springs and seeps.</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce formation of, and stabilize head cuts, gullies and arroyos.</li> <li>• Repair deeply eroded cuts with heavy equipment.</li> <li>• Repair smaller cuts with grade stabilization structures, weirs, net wire diversions, rock and brush dams, and other similar methods.</li> <li>• Use BMPs to catch soils and fill arroyos.</li> </ul>	<ul style="list-style-type: none"> <li>• Within 30 years</li> </ul>	<ul style="list-style-type: none"> <li>• New federal fuel reduction and fire prevention funds for public lands.</li> <li>• Tax rebates and credits for private land</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce general deterioration of the land, and its uses.</li> <li>• Retain soil nutrients, topsoil and seed.</li> <li>• Increase benefit to landowners and producers.</li> </ul>
<ul style="list-style-type: none"> <li>• Rehabilitate freshwater areas. Reduce, prevent, and repair habitat loss along streams, ephemeral waterways, and in wetlands.</li> </ul>	<ul style="list-style-type: none"> <li>• Re-vegetate along streams and ephemeral waterways, plant willow and cottonwood trees at unstable banks and along non-vegetated segments.</li> <li>• Construct fencing to protect riparian and wetland areas, and plantings from livestock.</li> <li>• Stabilize channel banks by installing J-Hooks and other similar structures.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Guard against water reduction, and loss of important plant species such as willow and cattails in drought years, and both silting up and scouring out of important wetlands due to flooding during years of heavy precipitation.</li> <li>• Improve degraded</li> </ul>

<b>Goal: restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	<ul style="list-style-type: none"> <li>• Re-create and induce stream meanders.</li> <li>• Prohibit development in areas within flood plains, or which have hydrologic problems (storm water ponding, poor drainage, high water table).</li> <li>• Prohibit development in wetlands or riparian areas.</li> </ul>			riparian and wetland habitats to provide both winter and summer habitat for numerous wildlife species, and migratory birds
<ul style="list-style-type: none"> <li>• Increase both the biodiversity and production of rangelands, and croplands.</li> </ul>	<ul style="list-style-type: none"> <li>• Work with relevant agencies to manage sagebrush monocultures and reduce numbers of juniper trees.</li> <li>• Control or eliminate noxious, invasive, and non-native weed species (A-1).</li> <li>• Seed with native grasses, and plants.</li> <li>• Develop grass banks and other cooperative mechanisms to reduce grazing during drought.</li> </ul>	<ul style="list-style-type: none"> <li>• Within 20 years</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Benefit the watersheds.</li> <li>• Using work corps and student labor, remove non-native vegetation from riparian areas.</li> <li>• Increase forage, native grass production, and groundcover.</li> <li>• Increase benefit to landowners and producers.</li> </ul>
<ul style="list-style-type: none"> <li>• Provide for an increased, consistent and sustainable source, and adequate distribution of rangeland water.</li> </ul>	<ul style="list-style-type: none"> <li>• Drill wells for development of alternative upland water.</li> <li>• Install improved well pump technology on existing wells.</li> <li>• Install water pipelines and drinking troughs.</li> <li>• Use various methods to reduce competition for forage between livestock and wildlife.</li> <li>• Prohibit sale of water out of sub-region.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce general deterioration of the land, and its uses.</li> <li>• Increase water availability and distribution to reduce competition for water resources between livestock and wildlife.</li> <li>• Achieve a balanced animal-use pattern across the landscape to reduce overgrazing, and increase size and productivity of wildlife and livestock.</li> </ul>
*Maintain agriculture and ranching as a part of the	*Implement management practices that are environmentally friendly and	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>

<b>Goal: restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
whole ecosystem	sustainable <i>Implement local Mgmt plans.</i> <i>Maintain Customary Law and Practice.</i> <i>Implement rotation grazing practices.</i> Maintain diversity of use by wildlife and livestock. Promote an attitude of stewardship of the ecosystems' integrity			
*Maintain the scenic and ecological conditions which attracted us here	*Ensure good water quality Include forests/forestry, rangelands/ranching and wetland/riparian areas	•	•	•
*Preserve the greatest amount of biological diversity	*Maintain healthy and productive plant and animal communities by creating an ecosystem with a diversity of species, size, classes, and ages	•	•	•

<b>Goal: support the cultural and spiritual values of water, and the universal need for and importance of water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
•	<ul style="list-style-type: none"> <li>• Promote appreciation of the dependence of all life on water.</li> <li>• Promote the sanctity of watercourses.</li> <li>• Promote a spring water festival in which knowledge of water as a sacred gift is restored by blessing of the local acequias and streams by priests and medicine men.</li> <li>• Promote a fall harvest festival linked to the County Fair to celebrate the perseverance and cohesion of rural agricultural communities.</li> <li>• Promote water events throughout the year to keep people focused on the importance of water and soil</li> </ul>	<ul style="list-style-type: none"> <li>• Within 30 years integrate community and spiritual leaders around water and land care.</li> </ul>	•	•



<b>Goal: support the cultural and spiritual values of water, and the universal need for and importance of water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	management. <ul style="list-style-type: none"> <li>• Develop public parks and interpretive areas along perennial streams near villages.</li> <li>• Develop adopt-a-watercourse programs.</li> <li>• Develop community gardens.</li> <li>•</li> </ul>			
*Realize the spiritual benefits of ancient forests, free-flowing rivers, living deserts and the abundance of life flourishing in all these areas, aside from the economic benefits.	*Maintain the local cultural and religious traditions.			
<i>Institutionalize local control &amp; discretionary authority.</i>	<i>Implement &amp; apply right of self-determination &amp; local governance of water issues.</i>			

<b>Goal: ensure treaty of Guadalupe Hidalgo, water and acequia rights to preserve and protect local agricultural traditions.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Create agriculture conscious communities.</li> </ul>	<ul style="list-style-type: none"> <li>• Form local agricultural cooperatives to maintain productivity of agricultural lands in local communities.</li> <li>• Support acequia and agricultural land improvement programs.</li> <li>• Develop mechanisms to prevent transfer of surface and ground water rights from their locality. (Prohibit sale of water out of sub-region).</li> <li>• Solicit funds from state and federal government agencies to map, catalog, and describe acequias including annual water use.</li> <li>• “Rural Agricultural Areas” would protect and preserve areas presently</li> </ul>	<ul style="list-style-type: none"> <li>• Within 30 years have Legislators at every level integrate protection of water for agriculture into current and new statutes.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>

<b>Goal: ensure treaty of Guadalupe Hidalgo, water and acequia rights to preserve and protect local agricultural traditions.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	and historically used for agricultural practices. <ul style="list-style-type: none"> <li>• Develop water banking to maintain local water rights.</li> <li>• Meter all surface water diversions (A-7).</li> <li>• Authorize in-stream flow as a beneficial use (A-63).</li> <li>• Address ground/surface water interactions in state water-rights statutes (A-144).</li> <li>• Identify, quantify, and adjudicate surface water rights and order of wet water utilization (A-71)</li> </ul>			
*Respect existing rural, tribal and farming/ranching lifestyles.	*Form lobbying group/local Acequia Assoc/Ag Assoc <i>Implement customary Law &amp; practices in existence prior to the Act of 1866 &amp; 1848 Treaty of GH.</i> <i>Recognize &amp; implement USDA-FS Reg. 3 policy (Wm D Hurst 1972).</i>	•	•	•
*Maintain the integrity of traditional acequias systems that have existed for several generations	*Acequia water banking <i>1866 Act Right-of-Way.</i> <i>1848 Treaty.</i> Protect acequia priority of right-of-way.	•	•	•
*Protect agricultural lands from development	*Implement land use management tools that prevent paving over and building on agricultural lands Require planning for growth to consider impacts on traditional cultures and lifestyles Protect the option to pursue farming/ranching full or part-time Implement <i>local and customary</i> land use management tools	•	•	•
*Keep water with the land.	*Assessment fee if land removed from	•	•	•

<b>Goal: ensure treaty of Guadalupe Hidalgo, water and acequia rights to preserve and protect local agricultural traditions.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	system. Water rights are not lost if water is kept in or returned to the river			

<b>Goal: retain land use patterns that support and ensure a rural lifestyle and economy.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Protect and improve the quality of the domestic supply of surface and ground water.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and protect groundwater recharge areas (A-47).</li> <li>• Limit and reduce vehicular low-water stream crossings.</li> <li>• Clean up watercourses, remove garbage, trash, and vehicles from arroyos.</li> <li>• Require sewage treatment systems in higher density communities (A-26).</li> <li>• Use constructed wetlands for final sewage treatment (A-36).</li> <li>• Remove trace elements.</li> </ul>	<ul style="list-style-type: none"> <li>• Within 10 years</li> </ul>	<ul style="list-style-type: none"> <li>• New federal &amp; state taxes and tax incentives and rebates.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
<ul style="list-style-type: none"> <li>• Provide for increased, consistent and sustainable sources of both domestic and irrigation water.</li> </ul>	<ul style="list-style-type: none"> <li>• Work with relevant agencies to implement projects to thin trees and brush on public and private land.</li> <li>• Work with relevant agencies to implement controlled burn projects on public and private land, and along the irrigation ditches.</li> <li>• Construct water storage reservoirs or other storage facility.</li> <li>• Install Domestic supply wells.</li> <li>•</li> <li>• Identify and provide for residential fire-fighting water.</li> </ul>	<ul style="list-style-type: none"> <li>• Within 10 years</li> </ul>	<ul style="list-style-type: none"> <li>• New federal &amp; state taxes and tax incentives and rebates.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>

<b>Goal: retain land use patterns that support and ensure a rural lifestyle and economy.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• A program that systematically fosters a greater cooperation among various sectors of the communities with water as a primary focus.</li> </ul>	<ul style="list-style-type: none"> <li>• Manage growth within the limits of water, and a rural landscape (A-52).</li> <li>• Adopt policies to integrate land use planning and water resource management (A-30).</li> <li>• Maintain large areas of mostly vacant and predominantly undeveloped land.</li> <li>• Authorize no well permits on tracts of less than 40 acres.</li> <li>• Require water availability before land subdivision.</li> <li>• Limit residential development to low-density housing.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
<ul style="list-style-type: none"> <li>• Create a sustainable economy that bolsters self-sufficiency of the sub-regional communities, and helps prevent loss of the agrarian lifestyle.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop local agricultural cooperatives.</li> <li>• Develop markets for local agricultural products (A-11).</li> <li>• Promote a Farmers' Market, and sale of locally grown produce and meat.</li> <li>• Use creative marketing of livestock (organic, predator friendly, low-impact).</li> <li>• Promote development of a diversity of crop markets including; native and traditional crops, contemporary crops, and new and emerging crops.</li> <li>• Implement new farming technologies that will help to increase production.</li> <li>• Plan and maintain a schedule for rotation of fallow acres.</li> <li>• Reduce the amount of presently fallow cropland, and prevent further cropland being taken out of production.</li> </ul>	<ul style="list-style-type: none"> <li>• Within 50 years</li> </ul>	<ul style="list-style-type: none"> <li>• Accomplished by passage of state statutes, and rigorous integration of county, state, &amp; federal policies and process.</li> <li>• Promote a "Very-Small-Business Center".</li> <li>• Promote "locally-owned" businesses.</li> <li>• Work with local banks, Acequia, and Stockmen Associations to aid local agricultural producers who lack financial resources.</li> <li>• Provide low interest loans for enterprises that promote a rural lifestyle, cottage industries, eco-tourism, and co-operatives.</li> </ul>	<ul style="list-style-type: none"> <li>• Water use will match water supply.</li> <li>• Agricultural Cooperatives will promote and sustain agriculture through:</li> <li>• Education, financial support, improved farming methods, crop diversity, shared use of equipment and teaching children about the importance and benefit of agriculture, and good agricultural conservation methods.</li> </ul>

<b>Goal: retain land use patterns that support and ensure a rural lifestyle and economy.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Increase efficiency of irrigation ditch system.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop protective zoning for acequia irrigated lands.</li> <li>• Use land use planning, and laws to prevent development on irrigated or non-irrigated farmland.</li> <li>• Prohibit sale of water out of sub-region.</li> <li>• Develop a consistent and sustained supply, and distribution of irrigation water.</li> <li>• Provide annual maintenance to all irrigation ditches (mains and laterals).</li> <li>• Repair and construct head, and farm gates for water control.</li> <li>• Line irrigation ditch systems and laterals, where necessary, with concrete or PVC pipe.</li> <li>• Repair blown out culverts and broken flumes.</li> <li>• Redirect ditches to reduce gradient where possible.</li> <li>• Reduce and prevent increased incising of irrigation ditches.</li> <li>• Re-contour segments of ditches that have become channelized.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Provide a topography that makes application of water to fields more.</li> <li>• Reduce sheet and rill erosion which causes channelization.</li> </ul>
*Maintain the rural nature of the sub-region with agriculture and ranching as an integral part	*Maintain the numbers of livestock and tilled acres that best benefits the environment and economy together Maintain a wide diversity of crops throughout the sub-regions Create and maintain local farmer markets Promote and encourage use of local crops	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
*Base regional growth/planning/zoning on entire ecosystem	*Implement land use plans that preserve both rural and urban areas. Manage growth by putting	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>

<b>Goal: retain land use patterns that support and ensure a rural lifestyle and economy.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	geographical or numerical limits on the population Tie land-use to demonstrated availability of water. Encourage areas of higher density with clean, eco-friendly, nearby businesses/industries. Prevent planning that requires commuting. Create an economy which would not require us to work away from the land in order to maintain it and enable future generations to farm and ranch <i>Establish Agricultural co-ops Marketing</i> Include the cost of environmental damage when assessing alternatives			

<b>Goal: promote conservation of water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>Water wise residents and communities.</li> </ul>	<ul style="list-style-type: none"> <li>Disseminate water-saving information (A-56).</li> <li>Develop water budget to understand water recharge and water use.</li> <li>Develop local water conservation and drought plans (A-18).</li> <li>Fund domestic water cooperatives to improve their water systems.</li> <li>Fund acequias to increase operating efficiency (A-60).</li> <li>Adopt graduated water rates in all domestic systems (A-21).</li> <li>Adopt a conservation fee added to all water systems for promotion of water conservation.</li> <li>Promote adoption of domestic</li> </ul>	<ul style="list-style-type: none"> <li>Over the next 50 years.</li> </ul>	<ul style="list-style-type: none"> <li>Guide water use reduction in a trickle down fashion to the state level, and similarly from state level to local levels.</li> <li>Key federal legislation.</li> <li>Tax incentives and credits.</li> <li>Funding</li> </ul>	<ul style="list-style-type: none"> <li>Public understanding of water conservation will increase.</li> </ul>

<b>Goal: promote conservation of water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	water-saving technologies (A-22). <ul style="list-style-type: none"> <li>• Promote greywater reuse (A-24).</li> <li>• Encourage rainwater harvesting (A-44).</li> <li>• Improve storm water management (A-34).</li> <li>• Use agricultural methods that reduce water utilization.</li> <li>• Reduce water loss in acequias.</li> <li>• Promote projects to increase irrigation efficiency (A-10).</li> <li>• Reduce artificial open water evaporation (A-45).</li> <li>• Meter all water supply wells (A-8).</li> <li>• Limit wells that could impair surface or groundwater (A-61).</li> <li>• Capture flood flows.</li> </ul>			
*Enhance conservation of water and preservation of the land	*Utilize new technologies Institute incentives for water conservation and recycling Create an inter-water-systems board Coordination/cooperation of water use among area water systems Ensure modernized, well-maintained water systems	•	•	•

<b>Goal: promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Create water conscious communities by providing education centered on soil and water conservation, and alternative energy and building methods.</li> <li>• Studies show a close link between detrimental impacts to the local ecology and economic losses of local producers.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop school curricula and outdoor projects on these subjects.</li> <li>• Develop school curricula concerning water conservation (A-56).</li> <li>• Develop school curricula concerning water conservation methods, such as, mulching, composting, swales, rain barrels and other catchment systems, and uses hands on training.</li> <li>• Work with local schools to involve children and young adults in agriculture.</li> </ul>	<ul style="list-style-type: none"> <li>• Within 10 years ensure every education level includes water and land use curricula.</li> </ul>	<ul style="list-style-type: none"> <li>• Funding will support this education process (as above).</li> </ul>	<ul style="list-style-type: none"> <li>• Public understanding of the:.</li> <li>• idea of healthy land and healthy watersheds as personal and community wealth.</li> <li>• sacredness of water.</li> <li>• interrelationship of water and land management in watersheds.</li> <li>• roles of watersheds to store and release winter snowmelt and dissipate summer downpours.</li> <li>• central roles of climate and fire in the ecology of natural communities.</li> <li>• natural limits to the productivity of land.</li> <li>• natural limits to plant, wildlife and human dependence on land.</li> <li>• factors conducive to erosion, and methods to reduce or prevent it.</li> <li>• importance of riparian and wetland areas.</li> <li>• alternative methods of livestock handling, such as: fencing, pasturing, rotational grazing and other methods to reduce overgrazing and erosion.</li> <li>• relevant contemporary farming technologies and practices, such as: low impact</li> </ul>



<b>Goal: promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
				agricultural methods-shallow or no plowing-, alternative and expanding crop markets. <ul style="list-style-type: none"> <li>• benefits, and means of water conservation.</li> </ul>
<ul style="list-style-type: none"> <li>• Provide a secondary education facility.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Funding will support this education facility (as above).</li> </ul>	<ul style="list-style-type: none"> <li>• Allow local residents to stay in the area.</li> <li>• Teach technology and business skills needed to develop water and land centered occupations and enterprises.</li> <li>• Train youth to create occupations, mini businesses and enterprises.</li> </ul>
*Assist future generations in learning about water	Create a Natural Resource Educational Program (partner the school district with agencies such as Cuba Soil and Water Conservation District) Educate about ways to wisely use and reuse water. Provide seminars/courses at local school	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
*Educate folks who are not farmers by trade about the importance of land and water stewardship	*Share local agriculture knowledge Share local knowledge about stewardship as nurturing the land and husbanding the water Make educational packages available at Pueblo and Forest Service offices.	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>

<b>Goal: promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
*Minimize misunderstandings between newcomers/tourists and long time residents.	*Educate newcomers and visitors about local traditions and lifestyles.	•	•	•

<b>Goal: provide for monitoring the implementation of the water plan.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>Public participation in the water planning process and water management.</li> </ul>	<ul style="list-style-type: none"> <li>Increase monitoring and modeling of surface and groundwater (A-38).</li> <li>Develop geographic watershed information system (A-73).</li> <li>Maintain watershed steering committees.</li> <li>Fund ongoing water planning (A-58).</li> <li>Ensure continued public participation in water issues (A-53) through local water assemblies.</li> </ul>	<ul style="list-style-type: none"> <li>Within 20 years</li> </ul>	<ul style="list-style-type: none"> <li>Use state and federal support.</li> <li>Legislation will create and support citizen water assemblies/forums until their functions can be integrated into all levels of executive and legislative branches</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>
• *None	• *None	•	•	•

**REGION 3 POLICY**

*Dealt with pueblo and Spanish American cultures of Northern NM as a unique resource in the National System.*

*Act of 1866- Right-of-Way from Highway Act*

*Prior to 1891 ditches were allowed to be constructed across public domain without permit or authorization, once constructed they were accorded easement status by local custom. 1971 memo FS HQ DC states legally recognized under Act of 1866.*

*1848 Treaty of Guadalupe Hidalgo, Article 8-*

*Property of every kind... present owners, heirs... and all Mexicans who (word?) acquire... property by contract shall enjoy with respect to its guarantees equally ample(?) as if belong to US citizen.*

**DRAFT COMBINED RIO PUERCO y RIO JEMEZ SUB-REGIONAL SCENARIO: 2003-2050 (9/19/03)**

<b>Goal: restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>Restore a fire-adapted watershed.</li> </ul>	<ul style="list-style-type: none"> <li>Thin forests and woodlands in an ecologically sound manner (A-66).</li> <li>Treat grassland brush in an ecologically sound manner.</li> <li>Develop a network of natural and artificial fire and fuel breaks to define 5000+ acre fire management units throughout the watershed.</li> <li>Provide for adequate fire protection of structures to facilitate burning.</li> <li>Apply prescribed fire frequently and extensively to established fire management units.</li> <li>Create defensible spaces around all dwellings and structures.</li> <li>Manage forage utilization to maintain ground cover and carry fire.</li> </ul>	<ul style="list-style-type: none"> <li>30-year project</li> </ul>	<ul style="list-style-type: none"> <li>New federal fuel reduction and fire prevention funds for public lands.</li> <li>Tax rebates and credits for private land</li> </ul>	<ul style="list-style-type: none"> <li>Create many local jobs for sawyer crews, earth moving machinery, and hand crews.</li> <li>Additionally value added industry, and permanent jobs would be created to maintain a healthy watershed.</li> </ul>
<ul style="list-style-type: none"> <li>Decrease soil erosion and increase water retention and infiltration.</li> </ul>	<ul style="list-style-type: none"> <li>Expand watershed management programs (A-33).</li> <li>Promote good soil management practices as a necessary corollary to an effective water conservation plan.</li> <li>Reduce and prevent surface water runoff on grazed lands resulting in sheet and rill erosion.</li> <li>Reduce development, and increasing use of unpaved roads.</li> <li>Use low impact agricultural methods such as shallow or no plowing.</li> <li>Apply soil conservation techniques such as installation of field borders, and conservation or no-till</li> </ul>	<ul style="list-style-type: none"> <li>Within 10 years</li> </ul>	<ul style="list-style-type: none"> <li>New federal fuel reduction and fire prevention funds for public lands.</li> <li>Tax rebates and credits for private land</li> </ul>	<ul style="list-style-type: none"> <li>Reduce general deterioration of the land, and its uses, and increase benefit to landowners and producers.</li> <li>Retain soil nutrients, topsoil and seed.</li> </ul>

<b>Goal: restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	<p>methods.</p> <ul style="list-style-type: none"> <li>• Improve grazing management through methods such as: fencing, pasturing, **rotational grazing and other methods to reduce overgrazing.</li> <li>• Laser level irrigated fields.</li> <li>• Line the ditch system, or segments most prone to erosion, with concrete or PVC pipe.</li> <li>• Establish groundcover on rangeland.</li> </ul>			
<ul style="list-style-type: none"> <li>• Reduce, prevent and repair incising of arroyos to raise the water table and recharge springs and seeps.</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce formation of, and stabilize head cuts, gullies and arroyos.</li> <li>• Repair deeply eroded cuts with heavy equipment.</li> <li>• Repair smaller cuts with grade stabilization structures, weirs, net wire diversions, rock and brush dams, and other similar methods.</li> <li>• Use BMPs to catch soils and fill arroyos.</li> </ul>	<ul style="list-style-type: none"> <li>• Within 30 years</li> </ul>	<ul style="list-style-type: none"> <li>• New federal fuel reduction and fire prevention funds for public lands.</li> <li>• Tax rebates and credits for private land</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce general deterioration of the land, and its uses.</li> <li>• Retain soil nutrients, topsoil and seed.</li> <li>• Increase benefit to landowners and producers.</li> </ul>
<ul style="list-style-type: none"> <li>• Rehabilitate freshwater areas. Reduce, prevent, and repair habitat loss along streams, ephemeral waterways, and in wetlands.</li> </ul>	<ul style="list-style-type: none"> <li>• Re-vegetate along streams and ephemeral waterways, plant willow and cottonwood trees at unstable banks and along non-vegetated segments.</li> <li>• Construct fencing to protect riparian and wetland areas, and plantings from livestock.</li> <li>• Stabilize channel banks by installing J-Hooks and other similar structures.</li> <li>• Re-create and induce stream meanders.</li> <li>• Prohibit development in areas within flood plains, or which have hydrologic problems (storm water</li> </ul>	<ul style="list-style-type: none"> <li>• Within 15 years</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Guard against water reduction, and loss of important plant species such as willow and cattails in drought years, and both silting up and scouring out of important wetlands due to flooding during years of heavy precipitation.</li> <li>• Improve degraded riparian and wetland habitats to provide both winter and summer habitat for numerous wildlife species, and migratory birds</li> </ul>

<b>Goal: restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	ponding, poor drainage, high water table). <ul style="list-style-type: none"> <li>Prohibit development in wetlands or riparian areas.</li> </ul>			
<ul style="list-style-type: none"> <li>Increase both the bio- **diversity and production of rangelands, and croplands.</li> </ul>	<ul style="list-style-type: none"> <li>Work with relevant agencies to manage sagebrush monocultures and reduce numbers of juniper trees.</li> <li>Control or eliminate noxious, invasive, and non-native weed species (A-1).</li> <li>Seed with native grasses, and plants.</li> <li>Develop grass banks and other cooperative mechanisms to reduce grazing during drought.</li> <li>Include diversity of both wildlife and livestock.</li> </ul>	<ul style="list-style-type: none"> <li>Within 20 years</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li>Benefit the watersheds.</li> <li>Using work corps and student labor, remove non-native vegetation from riparian areas.</li> <li>Increase forage, native grass production, and groundcover.</li> <li>Increase benefit to landowners and producers.</li> <li>*Healthy and productive plant and animal communities in an ecosystem with a diversity of species, size classes, and ages.</li> </ul>
<ul style="list-style-type: none"> <li>Provide for an increased, consistent and sustainable source, and adequate distribution of rangeland water.</li> </ul>	<ul style="list-style-type: none"> <li>Drill wells for development of alternative upland water.</li> <li>Install improved well pump technology on existing wells.</li> <li>Install water pipelines and drinking troughs.</li> <li>Use various methods to reduce competition for forage between livestock and wildlife.</li> <li>Prohibit sale of water out of sub-region.</li> </ul>	<ul style="list-style-type: none"> <li>Within 15 years</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li>Reduce general deterioration of the land, and its uses.</li> <li>Increase water availability and distribution to reduce competition for water resources between livestock and wildlife.</li> <li>Achieve a balanced animal-use pattern across the landscape to reduce overgrazing, and increase size and productivity of wildlife and livestock.</li> </ul>
<ul style="list-style-type: none"> <li>*Maintain agriculture and ranching as part of the whole ecosystem.</li> </ul>	<ul style="list-style-type: none"> <li>*Implement management practices that are environmentally friendly and sustainable.</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>

<b>Goal: restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	<ul style="list-style-type: none"> <li>• *Create and implement local management plans.</li> <li>• *Retain customary laws and practices that promote soil and water conservation.</li> <li>• *Promote an attitude of stewardship of the integrity of the ecosystems.</li> </ul>			
<ul style="list-style-type: none"> <li>• *Maintain the scenic and ecological conditions which attracted us to the area.</li> </ul>	<ul style="list-style-type: none"> <li>• *Include forests, rangelands wetland/riparian areas; ranching and agriculture.</li> </ul>	•	•	•

<b>Goal: support the cultural and spiritual values of water, and the universal need for and importance of water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• *Realize the spiritual benefits of ancient forests, free-flowing rivers, living deserts and the abundance of life flourishing in all these areas, aside from the economic benefits.</li> </ul>	<ul style="list-style-type: none"> <li>• Promote appreciation of the dependence of all life on water.</li> <li>• Promote the sanctity of watercourses.</li> <li>• Promote a spring water festival in which knowledge of water as a sacred gift is restored by blessing of the local acequias and streams by priests and medicine men.</li> <li>• Promote a fall harvest festival linked to the County Fair to celebrate the perseverance and cohesion of rural agricultural communities.</li> <li>• Promote water events throughout the year to keep people focused on the importance of water and soil management.</li> <li>• Develop public parks and interpretive areas along perennial streams near villages.</li> <li>• Develop adopt-a-watercourse programs.</li> </ul>	<ul style="list-style-type: none"> <li>• Within 30 years integrate community and spiritual leaders around water and land care.</li> </ul>	•	•

<b>Goal: support the cultural and spiritual values of water, and the universal need for and importance of water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	<ul style="list-style-type: none"> <li>• Develop community gardens.</li> <li>• *Maintain local cultural and religious traditions.</li> </ul>			

<b>Goal: ensure treaty water and acequia rights to preserve and protect local agricultural traditions.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Create agriculture conscious communities.</li> </ul>	<ul style="list-style-type: none"> <li>• Form local agricultural cooperatives to maintain productivity of agricultural lands in local communities.</li> <li>• Support acequia and agricultural land improvement programs.</li> <li>• Develop mechanisms to prevent transfer of surface and ground water rights from their locality. (Prohibit sale of water out of sub-region).</li> <li>• Solicit funds from state and federal government agencies to map, catalog, and describe acequias including annual water use.</li> <li>• “Rural Agricultural Areas” would protect and preserve areas presently and historically used for agricultural practices.</li> <li>• Develop **water banking to maintain local water rights.</li> <li>• Meter all surface water diversions (A-7).</li> <li>• Authorize in-stream flow as a beneficial use (A-63).</li> <li>• Address ground/surface water interactions in state water-rights statutes (A-144).</li> <li>• Identify, quantify, and adjudicate surface water rights and order of wet water utilization (A-71)</li> </ul>	<ul style="list-style-type: none"> <li>• Within 30 years have Legislators at every level integrate protection of water for agriculture into current and new statutes.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
<ul style="list-style-type: none"> <li>• *Promote respect for</li> </ul>	<ul style="list-style-type: none"> <li>• *Form lobbying groups.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>

<b>Goal: ensure treaty water and acequia rights to preserve and protect local agricultural traditions.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
existing rural, tribal and farming/ranching lifestyles.	<ul style="list-style-type: none"> <li>*Form local Acequia/Ag Associations.</li> <li>*Promote customary laws &amp; practices in existence prior to the Act of 1866 &amp; 1848 Treaty of GH that promote soil and water conservation.</li> </ul>			
<ul style="list-style-type: none"> <li>*Maintain the integrity of the traditional acequia systems that have existed for generations.</li> </ul>	<ul style="list-style-type: none"> <li>*Protect acequia priority of right-of-way.</li> <li>See other methods under “Land Use” Goal.</li> </ul>	•	•	<ul style="list-style-type: none"> <li>Maintains the diversity of historic, and prehistoric cultures and traditions.</li> </ul>
<ul style="list-style-type: none"> <li>*Protect agricultural lands from development.</li> </ul>	<ul style="list-style-type: none"> <li>*Implement land use management tools that prevent paving over and building on agricultural lands.</li> <li>*Require that “growth and development” planning consider impacts on traditional cultures and lifestyles.</li> <li>Prevent loss of agricultural options due to “cumulative effects”.</li> </ul>	•	•	<ul style="list-style-type: none"> <li>*Maintains the option to pursue farming/ranching full or part-time.</li> </ul>
<ul style="list-style-type: none"> <li>*Keep water with the land.</li> </ul>	<ul style="list-style-type: none"> <li>*Create an assessment fee for removal of land or water from an acequia system.</li> <li>*Create a mechanism to ensure water rights are not lost if water is kept in or returned to the river. or conversely,</li> <li>Create a mechanism to allow water to be kept in or returned to the river without loss of water rights.</li> </ul>	•	•	<ul style="list-style-type: none"> <li>Maintains a link to the Customary Laws and Practices of historic and prehistoric cultures and traditions.</li> </ul>

<b>Goal: retain land use patterns that support and ensure a rural lifestyle and economy.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>*Base regional growth, planning, and zoning on retaining the health of the entire ecosystem.</li> </ul>	<ul style="list-style-type: none"> <li>*Tie land-use to demonstrated availability of water.</li> <li>*Implement land use plans that preserve both rural and urban areas.</li> <li>*Manage growth by putting</li> </ul>	•	•	•



<b>Goal: retain land use patterns that support and ensure a rural lifestyle and economy.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	geographical or numerical limits on the population. <ul style="list-style-type: none"> <li>• *Encourage areas of higher density with clean, eco-friendly, nearby businesses, and industries.</li> <li>• *Use creative planning that does not require commuting.</li> <li>• *Include the cost of environmental damage when assessing planning alternatives.</li> </ul>			
<ul style="list-style-type: none"> <li>• Protect and improve the quality of the domestic supply of surface and ground water.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and protect groundwater recharge areas (A-47).</li> <li>• Limit and reduce vehicular low-water stream crossings.</li> <li>• Clean up watercourses, remove garbage, trash, and vehicles from arroyos.</li> <li>• Require sewage treatment systems in higher density communities (A-26).</li> <li>• Use constructed wetlands for final sewage treatment (A-36).</li> <li>• Remove trace elements.</li> </ul>	<ul style="list-style-type: none"> <li>• Within 10 years</li> </ul>	<ul style="list-style-type: none"> <li>• New federal &amp; state taxes and tax incentives and rebates.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
<ul style="list-style-type: none"> <li>• Provide for increased, consistent and sustainable sources of both domestic and irrigation water.</li> </ul>	<ul style="list-style-type: none"> <li>• Work with relevant agencies to implement projects to thin trees and brush on public and private land.</li> <li>• Work with relevant agencies to implement controlled burn projects on public and private land, and along the irrigation ditches.</li> <li>• Construct water storage reservoirs or other storage facility.</li> <li>• Install Domestic supply wells.</li> <li>• Identify and provide for residential fire-fighting water.</li> </ul>	<ul style="list-style-type: none"> <li>• Within 10 years</li> </ul>	<ul style="list-style-type: none"> <li>• New federal &amp; state taxes and tax incentives and rebates.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>

<b>Goal: retain land use patterns that support and ensure a rural lifestyle and economy.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Create a program that systematically fosters a greater cooperation among various sectors of the communities with water as a primary focus.</li> </ul>	<ul style="list-style-type: none"> <li>• Manage growth within the limits of water, and a rural landscape (A-52).</li> <li>• Adopt policies to integrate land use planning and water resource management (A-30).</li> <li>• Maintain large areas of mostly vacant and predominantly undeveloped land.</li> <li>• Authorize no well permits on tracts of less than 40 acres.</li> <li>• Require water availability before land subdivision.</li> <li>• Limit residential development to low-density housing.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
<ul style="list-style-type: none"> <li>• Create a sustainable economy that bolsters self-sufficiency of the sub-regional communities, and helps prevent loss of the agrarian lifestyle.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop local agricultural **co-operatives.</li> <li>• Develop markets for local agricultural products (A-11).</li> <li>• Promote **Farmers’ Markets, and **sale of locally grown produce and meat.</li> <li>• Use creative marketing of livestock (organic, predator friendly, low-impact).</li> <li>• *Maintain a wide diversity of crops throughout the sub-regions.</li> <li>• Promote development of a diversity of crop markets including; native and traditional crops, contemporary crops, and new and emerging crops.</li> <li>• Implement new farming technologies that will help to increase production.</li> <li>• Plan and maintain a schedule for rotation of fallow acres.</li> <li>• Reduce the amount of presently</li> </ul>	<ul style="list-style-type: none"> <li>• Within 50 years</li> </ul>	<ul style="list-style-type: none"> <li>• Accomplished by passage of state statutes, and rigorous integration of county, state, &amp; federal policies and process.</li> <li>• Promote a “Very-Small-Business Center”.</li> <li>• Promote “locally-owned” businesses.</li> <li>• Work with local banks, Acequia, and Stockmen Associations to aid local agricultural producers who lack financial resources.</li> <li>• Provide low interest loans for enterprises that promote a rural lifestyle, cottage industries, eco-tourism, and co-operatives.</li> </ul>	<ul style="list-style-type: none"> <li>• Water use will match water supply.</li> <li>• Agricultural Cooperatives will promote and sustain agriculture through:.</li> <li>• Education, financial support, improved farming methods, crop diversity, shared use of equipment and teaching children about the importance and benefit of agriculture, and good agricultural conservation methods.</li> <li>• *Would not require farmers and ranchers to work away from the land in order to maintain it</li> <li>• *Would enable future generations to farm and ranch.</li> </ul>

<b>Goal: retain land use patterns that support and ensure a rural lifestyle and economy.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	fallow cropland, and prevent further cropland being taken out of production. <ul style="list-style-type: none"> <li>• *Maintain the numbers of livestock and tilled acres that best benefits the environment and economy together.</li> </ul>			
<ul style="list-style-type: none"> <li>• Increase efficiency of irrigation ditch system.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop protective zoning for acequia irrigated lands.</li> <li>• Use land use planning, and laws to prevent development on irrigated or non-irrigated farmland.</li> <li>• Prohibit sale of water out of sub-region.</li> <li>• Develop a consistent and sustained supply, and distribution of irrigation water.</li> <li>• Provide annual maintenance to all irrigation ditches (mains and laterals).</li> <li>• Repair and construct head, and farm gates for water control.</li> <li>• Line irrigation ditch systems and laterals, where necessary, with concrete or PVC pipe.</li> <li>• Repair blown out culverts and broken flumes.</li> <li>• Redirect ditches to reduce gradient where possible.</li> <li>• Reduce and prevent increased incising of irrigation ditches.</li> <li>• Re-contour segments of ditches that have become channelized.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Provide a topography that makes application of water to fields more.</li> <li>• Reduce sheet and rill erosion which causes channelization.</li> </ul>

<b>Goal: promote conservation of water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Create water-wise residents and communities.</li> </ul>	<ul style="list-style-type: none"> <li>• *Utilize new technologies.</li> <li>• Disseminate water-saving</li> </ul>	<ul style="list-style-type: none"> <li>• Over the next 50 years.</li> </ul>	<ul style="list-style-type: none"> <li>• Guide water use reduction in a trickle down</li> </ul>	<ul style="list-style-type: none"> <li>• Public understanding of water conservation will</li> </ul>

**Goal: promote conservation of water.**

OBJECTIVE	ACTIONS	LENGTH	FUNDING/POLICIES	BENEFITS
	information (A-56). <ul style="list-style-type: none"> <li>• Develop water budget to understand water recharge and water use.</li> <li>• Develop local water conservation and drought plans (A-18).</li> <li>• Fund domestic water cooperatives to improve their water systems.</li> <li>• Fund acequias to increase operating efficiency (A-60).</li> <li>• Adopt graduated water rates in all domestic systems (A-21).</li> <li>• Adopt a conservation fee added to all water systems for promotion of water conservation.</li> <li>• Promote adoption of domestic water-saving technologies (A-22).</li> <li>• Promote greywater reuse (A-24).</li> <li>• Encourage rainwater harvesting (A-44).</li> <li>• Improve storm water management (A-34).</li> <li>• Use agricultural methods that reduce water utilization.</li> <li>• Reduce water loss in acequias.</li> <li>• Promote projects to increase irrigation efficiency (A-10).</li> <li>• Reduce artificial open water evaporation (A-45).</li> <li>• Meter all water supply wells (A-8).</li> <li>• Limit wells that could impair surface or groundwater (A-61).</li> <li>• Capture flood flows.</li> <li>• *Institute incentives for water conservation and recycling.</li> </ul>		fashion to the state level, and similarly from state level to local levels. <ul style="list-style-type: none"> <li>• Key federal legislation.</li> <li>• Tax incentives and credits.</li> <li>• Funding.</li> </ul>	increase.
*Promote local control and	<ul style="list-style-type: none"> <li>• *Ensure modernized, well-</li> </ul>	•	•	•

<b>Goal: promote conservation of water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
discretionary authority.	maintained water systems. <ul style="list-style-type: none"> <li>• *Create an inter-water-systems board.</li> <li>• *Coordinate water use among area water systems.</li> <li>• *Create cooperation among area water systems.</li> <li>• *Implement and apply the right of self-determination in local governance of water issues.</li> </ul>			

<b>Goal: promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Create water conscious communities by providing education centered on soil and water conservation, and alternative energy and building methods.</li> <li>• Studies show a close link between detrimental impacts to the local ecology and economic losses of local producers.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop school curricula and outdoor projects on these subjects.</li> <li>• Develop school curricula concerning water conservation (A-56).</li> <li>• Develop school curricula concerning water conservation methods, such as, mulching, composting, swales, rain barrels and other catchment systems, and uses hands on training.</li> <li>• Work with local schools to involve children and young adults in agriculture.</li> </ul>	<ul style="list-style-type: none"> <li>• Within 10 years ensure every education level includes water and land use curricula.</li> </ul>	<ul style="list-style-type: none"> <li>• Funding will support the education process (as above).</li> </ul>	<ul style="list-style-type: none"> <li>• Public understanding of the:.</li> <li>• idea of healthy land and healthy watersheds as personal and community wealth.</li> <li>• sacredness of water.</li> <li>• interrelationship of water and land management in watersheds.</li> <li>• roles of watersheds to store and release winter snowmelt and dissipate summer downpours.</li> <li>• central roles of climate and fire in the ecology of natural communities.</li> <li>• natural limits to the productivity of land.</li> <li>• natural limits to plant, wildlife and human dependence on land.</li> <li>• factors conducive to</li> </ul>

<b>Goal: promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
				erosion, and methods to reduce or prevent it. <ul style="list-style-type: none"> <li>• importance of riparian and wetland areas.</li> <li>• alternative methods of livestock handling, such as: fencing, pasturing, rotational grazing and other methods to reduce overgrazing and erosion.</li> <li>• relevant contemporary farming technologies and practices, such as: low impact agricultural methods-shallow or no plowing-, alternative and expanding crop markets.</li> <li>• benefits, and means of water conservation.</li> </ul>
<ul style="list-style-type: none"> <li>• *Assist future generations in learning about water.</li> </ul>	<ul style="list-style-type: none"> <li>• Provide a secondary education facility.</li> <li>• *Create a Natural Resource Educational Program (partner school districts with agencies such as Cuba Soil and Water Conservation District).</li> <li>• *Educate about ways to wisely use and reuse water.</li> <li>• Provide seminars and courses at local schools.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Funding will support educational facilities (as above).</li> </ul>	<ul style="list-style-type: none"> <li>• Allow local residents to stay in the area.</li> <li>• Teach technology and business skills needed to develop water and land centered occupations and enterprises.</li> <li>• Train youth to create occupations, mini businesses and enterprises.</li> </ul>

<b>Goal: promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>*Educate people (farmers and non-farmers) about the importance of land and water stewardship.</li> </ul>	<ul style="list-style-type: none"> <li>*Share local agriculture knowledge.</li> <li>*Share local knowledge and traditions regarding nurturing the land and husbanding the water.</li> <li>Make educational packets available at Pueblo and Forest Service offices.</li> <li>Promote an attitude of stewardship of the integrity of the ecosystems.</li> </ul>	•	•	•
<ul style="list-style-type: none"> <li>*Reduce misunderstandings between newcomers, tourists, and long time residents.</li> </ul>	<ul style="list-style-type: none"> <li>*Educate newcomers and visitors about local traditions and lifestyles.</li> </ul>	•	•	•

<b>Goal: provide for monitoring the implementation of the water plan.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>Public participation in the water planning process and water management.</li> </ul>	<ul style="list-style-type: none"> <li>Increase monitoring and modeling of surface and groundwater (A-38).</li> <li>Develop geographic watershed information system (A-73).</li> <li>Maintain watershed steering committees.</li> <li>Fund ongoing water planning (A-58).</li> <li>Ensure continued public participation in water issues (A-53) through local water assemblies.</li> </ul>	<ul style="list-style-type: none"> <li>Within 20 years</li> </ul>	<ul style="list-style-type: none"> <li>Use state and federal support.</li> <li>Legislation will create and support citizen water assemblies/forums until their functions can be integrated into all levels of executive and legislative branches</li> </ul>	•
<ul style="list-style-type: none"> <li>*None</li> </ul>	<ul style="list-style-type: none"> <li>*None</li> </ul>	•	•	•

**REGION 3 POLICY**

*Dealt with pueblo and Spanish American cultures of Northern NM as a unique resource in the National System.*

*Act of 1866- Right-of-Way from Highway Act*

*Prior to 1891 ditches were allowed to be constructed across public domain without permit or authorization, once constructed they were accorded easement status by local custom. 1971 memo FS HQ DC states legally recognized under Act of 1866.*

1848 Treaty of Guadalupe Hidalgo, Article 8-

*Property of every kind... present owners, heirs... and all Mexicans who (word?) acquire... property by contract shall enjoy with respect to its guarantees equally ample(?) as if belong to US citizen.*

These were included elsewhere so deleted (see Pg #s)

- *Implement rotation grazing practices (see \*\* pg 2).*
- Maintain diversity of *use by* wildlife and livestock. (unsure what the meaning of this is)
- \*Ensure good water quality (this is contained in a goal)
- \*Preserve the greatest amount of biological diversity (see \*\* Pg 4)
- GOAL: ENSURE TREATY of *Guadalupe Hidalgo*, WATER AND ACEQUIA RIGHTS TO PRESERVE AND PROTECT LOCAL AGRICULTURAL TRADITIONS. (The goals have already been finalized, and presented and accepted by the public. They should not be amended without a public participation process)
- *Recognize & implement USDA-FS Reg. 3 policy (Wm D Hurst 1972). (Don't know what this is therefore it would probably need to be defined and accepted by the public)*
- \*Acequia water banking (see \*\* pg 6)
- Create and maintain local farmer markets (see\*\* Pg 9)
- Promote and encourage use of local crops (again see \*\* Pg 9)
- \*Maintain the rural nature of the sub-region with agriculture and ranching as an integral part. (again see Pg 9)
- *Establish Agricultural co-ops* (again see \*\* Pg 9)
- *Marketing* (again see \*\* Pg 9)
- \*Enhance conservation of water and preservation of the land (this is included in GOAL)



**DRAFT COMBINED RIO PUERCO y RIO JEMEZ SUB-REGIONAL SCENARIO: 2003-2050 (9/20/03)**

<b>Goal: restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>Restore a fire-adapted watershed.</li> </ul>	<ul style="list-style-type: none"> <li>Thin forests and woodlands in an ecologically sound manner (A-66).</li> <li>Treat grassland brush in an ecologically sound manner.</li> <li>Develop a network of natural and artificial fire and fuel breaks to define 5000+ acre fire management units throughout the watershed.</li> <li>Provide for adequate fire protection of structures to facilitate burning.</li> <li>Apply prescribed fire frequently and extensively to established fire management units.</li> <li>Create defensible spaces around all dwellings and structures.</li> <li>Manage forage utilization to maintain ground cover and carry fire.</li> </ul>	<ul style="list-style-type: none"> <li>30-year project</li> </ul>	<ul style="list-style-type: none"> <li>New federal fuel reduction and fire prevention funds for public lands.</li> <li>Tax rebates and credits for private land</li> <li>New state fuel reduction and fire prevention funds for state lands.</li> </ul>	<ul style="list-style-type: none"> <li>Create many local jobs for sawyer crews, earth moving machinery, and hand crews.</li> <li>Additionally value added industry, and permanent jobs would be created to maintain a healthy watershed.</li> </ul>
<ul style="list-style-type: none"> <li>Decrease soil erosion and increase water retention and infiltration.</li> </ul>	<ul style="list-style-type: none"> <li>Expand watershed management programs (A-33).</li> <li>Promote good soil management practices as a necessary corollary to an effective water conservation plan.</li> <li>Reduce and prevent surface water runoff on grazed lands resulting in sheet and rill erosion.</li> <li>Reduce development, and increasing use of unpaved roads.</li> <li>Use low impact agricultural methods such as shallow or no plowing.</li> <li>Apply soil conservation techniques such as installation of field borders, and conservation or no-till</li> </ul>	<ul style="list-style-type: none"> <li>Within 10 years</li> </ul>	<ul style="list-style-type: none"> <li>New federal fuel reduction and fire prevention funds for public lands.</li> <li>Tax rebates and credits for private land</li> <li>New state fuel reduction and fire prevention funds for state lands.</li> </ul>	<ul style="list-style-type: none"> <li>Reduce general deterioration of the land, and its uses, and increase benefit to landowners and producers.</li> <li>Retain soil nutrients, topsoil and seed.</li> <li>Increase benefit to landowners and producers.</li> </ul>

<b>Goal: restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	<p>methods.</p> <ul style="list-style-type: none"> <li>• Improve grazing management through methods such as: fencing, pasturing, **rotational grazing and other methods to reduce overgrazing.</li> <li>• Laser level irrigated fields.</li> <li>• Line the ditch system, or segments most prone to erosion, with concrete or PVC pipe.</li> <li>• Establish groundcover on rangeland.</li> </ul>			
<ul style="list-style-type: none"> <li>• Reduce, prevent and repair incising of arroyos.</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce formation of, and stabilize head cuts, gullies and arroyos.</li> <li>• Repair deeply eroded cuts with heavy equipment.</li> <li>• Repair smaller cuts with grade stabilization structures, weirs, net wire diversions, rock and brush dams, and other similar methods.</li> <li>• Use BMPs to catch soils and fill arroyos.</li> </ul>	<ul style="list-style-type: none"> <li>• Within 30 years</li> </ul>	<ul style="list-style-type: none"> <li>• New federal fuel reduction and fire prevention funds for public lands.</li> <li>• Tax rebates and credits for private land.</li> <li>• New state fuel reduction and fire prevention funds for state lands.</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce general deterioration of the land, and its uses.</li> <li>• Retain soil nutrients, topsoil and seed.</li> <li>• Increase benefit to landowners and producers.</li> <li>• Raise the water table and recharge springs and seeps.</li> </ul>
<ul style="list-style-type: none"> <li>• Rehabilitate freshwater areas. Reduce, prevent, and repair habitat loss along streams, ephemeral waterways, and in wetlands.</li> </ul>	<ul style="list-style-type: none"> <li>• Re-vegetate along streams and ephemeral waterways, plant willow and cottonwood trees at unstable banks and along non-vegetated segments.</li> <li>• Construct fencing to protect riparian and wetland areas, and plantings from livestock.</li> <li>• Stabilize channel banks by installing J-Hooks and other similar structures.</li> <li>• Re-create and induce stream meanders.</li> <li>• Prohibit development in areas within flood plains, or which have hydrologic problems (storm water</li> </ul>	<ul style="list-style-type: none"> <li>• Within 15 years</li> </ul>	<ul style="list-style-type: none"> <li>• Increase federal water and wetland funds for public lands.</li> <li>• Tax rebates and credits for private land.</li> <li>• New or increase state water and wetland funds for state lands.</li> </ul>	<ul style="list-style-type: none"> <li>• Guard against water reduction, and loss of important plant species such as willow and cattails in drought years, and both silting up and scouring out of important wetlands due to flooding during years of heavy precipitation.</li> <li>• Improve degraded riparian and wetland habitats to provide both winter and summer habitat for numerous wildlife species, and migratory birds</li> </ul>

<b>Goal: restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	ponding, poor drainage, high water table). <ul style="list-style-type: none"> <li>Prohibit development in wetlands or riparian areas.</li> </ul>			
<ul style="list-style-type: none"> <li>Increase both the bio- **diversity and production of rangelands, and croplands.</li> </ul>	<ul style="list-style-type: none"> <li>Work with relevant agencies to manage sagebrush monocultures and reduce numbers of juniper trees.</li> <li>remove non-native vegetation from riparian areas.</li> <li>Control or eliminate noxious, invasive, and non-native weed species (A-1).</li> <li>Seed with native grasses, and plants.</li> <li>Develop grass banks and other cooperative mechanisms to reduce grazing during drought.</li> <li>Include diversity of both wildlife and livestock.</li> </ul>	<ul style="list-style-type: none"> <li>Within 20 years</li> </ul>	<ul style="list-style-type: none"> <li>Develop Federal, and state funding.</li> </ul>	<ul style="list-style-type: none"> <li>Benefit the watersheds.</li> <li>Use work corps and student labor.</li> <li>Increase forage, native grass production, and groundcover.</li> <li>Increase benefit to landowners and producers.</li> <li>*Healthy and productive plant and animal communities in an ecosystem with a diversity of species, size classes, and ages.</li> </ul>
<ul style="list-style-type: none"> <li>Provide for an increased, consistent and sustainable source, and adequate distribution of rangeland water.</li> </ul>	<ul style="list-style-type: none"> <li>Drill wells for development of alternative upland water.</li> <li>Install improved well pump technology on existing wells.</li> <li>Install water pipelines and drinking troughs.</li> <li>Use various methods to reduce competition for forage between livestock and wildlife.</li> <li>Prohibit sale of water out of sub-region.</li> </ul>	<ul style="list-style-type: none"> <li>Within 15 years</li> </ul>	<ul style="list-style-type: none"> <li>Develop Federal, and state funding.</li> </ul>	<ul style="list-style-type: none"> <li>Reduce general deterioration of the land, and its uses.</li> <li>Increase water availability and distribution to reduce competition for water resources between livestock and wildlife.</li> <li>Achieve a balanced animal-use pattern across the landscape to reduce overgrazing, and increase size and productivity of wildlife and livestock.</li> </ul>
<ul style="list-style-type: none"> <li>*Maintain agriculture and ranching as part of the whole ecosystem.</li> </ul>	<ul style="list-style-type: none"> <li>*Implement management practices that are environmentally friendly and sustainable.</li> </ul>	<ul style="list-style-type: none"> <li>Within 15 years.</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li>*Would not require farmers and ranchers to work away from the land in order to</li> </ul>

<b>Goal: restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	<ul style="list-style-type: none"> <li>• *Create and implement local management plans.</li> <li>• *Retain customary laws and practices that promote soil and water conservation.</li> <li>• *Promote an attitude of stewardship of the integrity of the ecosystems.</li> </ul>			maintain it <ul style="list-style-type: none"> <li>• *Would enable future generations to farm and ranch.</li> <li>• Increase benefit to landowners and producers.</li> </ul>
<ul style="list-style-type: none"> <li>• *Maintain the scenic and ecological conditions which attracted us to the area.</li> </ul>	<ul style="list-style-type: none"> <li>• *Include forests, rangelands wetland/riparian areas; ranching and agriculture.</li> </ul>	<ul style="list-style-type: none"> <li>• Over the next 50 years.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Provide sustainable tourist industry.</li> <li>• Promote general well being of residents.</li> </ul>

<b>Goal: support the cultural and spiritual values of water, and the universal need for and importance of water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• *Realize the spiritual benefits of ancient forests, free-flowing rivers, living deserts and the abundance of life flourishing in all these areas, aside from the economic benefits.</li> </ul>	<ul style="list-style-type: none"> <li>• Promote appreciation of the dependence of all life on water.</li> <li>• Promote the sanctity of watercourses.</li> <li>• Promote a spring water festival in which knowledge of water as a sacred gift is restored by blessing of the local acequias and streams by priests and medicine men.</li> <li>• Promote a fall harvest festival linked to the County Fair to celebrate the perseverance and cohesion of rural agricultural communities.</li> <li>• Promote water events throughout the year to keep people focused on the importance of water and soil management.</li> <li>• Develop public parks and interpretive areas along perennial streams near villages.</li> <li>• Develop adopt-a-watercourse</li> </ul>	<ul style="list-style-type: none"> <li>• Within 30 years.</li> </ul>	<ul style="list-style-type: none"> <li>• Integrate community and spiritual leaders around water and land care.</li> </ul>	<ul style="list-style-type: none"> <li>• Cohesion of the community regarding care for the ecosystems that sustain us.</li> </ul>

<b>Goal: support the cultural and spiritual values of water, and the universal need for and importance of water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	programs. <ul style="list-style-type: none"> <li>• Develop community gardens.</li> <li>• *Maintain local cultural and religious traditions.</li> </ul>			

<b>Goal: ensure treaty water and acequia rights to preserve and protect local agricultural traditions.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Create agriculture conscious communities.</li> </ul>	<ul style="list-style-type: none"> <li>• Form local agricultural cooperatives to maintain productivity of agricultural lands in local communities.</li> <li>• Support acequia and agricultural land improvement programs.</li> <li>• Develop mechanisms to prevent transfer of surface and ground water rights from their locality. (Prohibit sale of water out of sub-region).</li> <li>• Map, catalog, and describe acequias including annual water use.</li> <li>• “Rural Agricultural Areas” would protect and preserve areas presently and historically used for agricultural practices.</li> <li>• Develop **water banking to maintain local water rights.</li> <li>• Meter all surface water diversions (A-7).</li> <li>• Include in-stream flow as a beneficial use (A-63).</li> <li>• Address ground/surface water interactions in state water-rights statutes (A-144).</li> <li>• Identify, quantify, and adjudicate surface water rights and order of wet water utilization (A-71)</li> </ul>	<ul style="list-style-type: none"> <li>• Within 30 years.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop new funding and/or increase Federal and state funding.</li> <li>• Solicit funds from state and federal government agencies.</li> <li>• Work with legislators and local officials to develop mechanisms and legislation to integrate protection of water for agriculture into current and new statutes.</li> <li>• Work with legislators and local officials to develop mechanisms and legislation to expand on ways to protect water rights for agriculture into current and new statutes.</li> <li>• Work with legislators and local officials to develop mechanisms and legislation to protect water for the natural environment into current and new statutes.</li> </ul>	<ul style="list-style-type: none"> <li>• Increase the ways in which agricultural water can be used without loss of water rights.</li> </ul>
<ul style="list-style-type: none"> <li>• *Promote respect for existing rural, tribal and</li> </ul>	<ul style="list-style-type: none"> <li>• *Form lobbying groups.</li> <li>• *Form local Acequia/Ag</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Recognition of the diversity of historic, and</li> </ul>

<b>Goal: ensure treaty water and acequia rights to preserve and protect local agricultural traditions.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
farming/ranching lifestyles.	Associations. <ul style="list-style-type: none"> <li>*Promote customary laws &amp; practices in existence prior to the 1848 Treaty of GH that promote soil and water conservation, and communal property.</li> </ul>			prehistoric cultures and traditions. <ul style="list-style-type: none"> <li></li> </ul>
<ul style="list-style-type: none"> <li>*Maintain the integrity of the traditional acequia systems that have existed for generations.</li> </ul>	<ul style="list-style-type: none"> <li>*Protect acequia priority of right-of-way.</li> <li>Have Acequias pass bylaws to approve a change of diversion in accord with §73-2-21(E).</li> <li>Have Acequias pass bylaws to create a water bank in accord with §73-2-55.1.</li> <li>See other methods under “Land Use” Goal.</li> </ul>	•	<ul style="list-style-type: none"> <li>*Would not require farmers and ranchers to work away from the land in order to maintain it</li> <li>*Would enable future generations to farm and ranch.</li> <li>Increase benefit to landowners and producers.</li> </ul>	<ul style="list-style-type: none"> <li>Maintains the diversity of historic, and prehistoric cultures and traditions.</li> <li>*Would not require farmers and ranchers to work away from the land in order to maintain it</li> <li>*Would enable future generations to farm and ranch.</li> <li>Increase benefit to landowners and producers.</li> </ul>
<ul style="list-style-type: none"> <li>*Protect agricultural lands from development.</li> </ul>	<ul style="list-style-type: none"> <li>*Implement land use management tools that prevent paving over and building on agricultural lands.</li> <li>*Require that “growth and development” planning consider impacts on traditional cultures and lifestyles.</li> <li>Prevent loss of agricultural options due to “cumulative effects”.</li> </ul>	•	•	<ul style="list-style-type: none"> <li>*Maintains the option to pursue farming/ranching full or part-time.</li> </ul>
<ul style="list-style-type: none"> <li>*Keep water with the land.</li> </ul>	<ul style="list-style-type: none"> <li>*Create an assessment fee for removal of land or water from an acequia system.</li> <li>*Create a mechanism to ensure water rights are not lost if water is kept in or returned to the river. or conversely,</li> <li>Create a mechanism to allow water to be kept in or returned to the river without loss of water rights.</li> </ul>	•	•	<ul style="list-style-type: none"> <li>Maintains a link to the Customary Laws and Practices of historic and prehistoric cultures and traditions.</li> </ul>

<b>Goal: retain land use patterns that support and ensure a rural lifestyle and economy.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>*Base regional growth, planning, and zoning on retaining the health of the entire ecosystem.</li> </ul>	<ul style="list-style-type: none"> <li>*Tie land-use to demonstrated availability of water.</li> <li>*Implement land use plans that preserve both rural and urban areas.</li> <li>*Manage growth by putting geographical or numerical limits on the population.</li> <li>*Encourage areas of higher density with clean, eco-friendly, nearby businesses, and industries.</li> <li>*Use creative planning that does not require commuting.</li> <li>*Include the cost of environmental damage when assessing planning alternatives.</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>
<ul style="list-style-type: none"> <li>Protect and improve the quality of the domestic supply of surface and ground water.</li> </ul>	<ul style="list-style-type: none"> <li>Identify and protect groundwater recharge areas (A-47).</li> <li>Limit and reduce vehicular low-water stream crossings.</li> <li>Clean up watercourses, remove garbage, trash, and vehicles from arroyos.</li> <li>Require sewage treatment systems in higher density communities (A-26).</li> <li>Use constructed wetlands for final sewage treatment (A-36).</li> <li>Remove trace elements.</li> </ul>	<ul style="list-style-type: none"> <li>Within 10 years</li> </ul>	<ul style="list-style-type: none"> <li>New federal &amp; state taxes and tax incentives and rebates.</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>
<ul style="list-style-type: none"> <li>Provide for increased, consistent and sustainable sources of both domestic and irrigation water.</li> </ul>	<ul style="list-style-type: none"> <li>Work with relevant agencies to implement projects to thin trees and brush on public and private land.</li> <li>Work with relevant agencies to implement controlled burn projects on public and private land, and along the irrigation ditches.</li> <li>Construct water storage reservoirs or other storage facility.</li> <li>Install Domestic supply wells.</li> </ul>	<ul style="list-style-type: none"> <li>Within 10 years</li> </ul>	<ul style="list-style-type: none"> <li>New federal &amp; state taxes and tax incentives and rebates.</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>

<b>Goal: retain land use patterns that support and ensure a rural lifestyle and economy.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	<ul style="list-style-type: none"> <li>Identify and provide for residential fire-fighting water.</li> </ul>			
<ul style="list-style-type: none"> <li>Create a program that systematically fosters a greater cooperation among various sectors of the communities with water as a primary focus.</li> </ul>	<ul style="list-style-type: none"> <li>Manage growth within the limits of water, and a rural landscape (A-52).</li> <li>Adopt policies to integrate land use planning and water resource management (A-30).</li> <li>Maintain large areas of mostly vacant and predominantly undeveloped land.</li> <li>Authorize no well permits on tracts of less than 40 acres.</li> <li>Require water availability before land subdivision.</li> <li>Limit residential development to low-density housing.</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>
<ul style="list-style-type: none"> <li>Create a sustainable economy that bolsters self-sufficiency of the sub-regional communities, and helps prevent loss of the agrarian lifestyle.</li> </ul>	<ul style="list-style-type: none"> <li>Develop local agricultural **co-operatives.</li> <li>Develop markets for local agricultural products (A-11).</li> <li>Promote **Farmers’ Markets, and **sale of locally grown produce and meat.</li> <li>Use creative marketing of livestock (organic, predator friendly, low-impact).</li> <li>*Maintain a wide diversity of crops throughout the sub-regions.</li> <li>Promote development of a diversity of crop markets including; native and traditional crops, contemporary crops, and new and emerging crops.</li> <li>Implement new farming technologies that will help to increase production.</li> <li>Plan and maintain a schedule for</li> </ul>	<ul style="list-style-type: none"> <li>Within 50 years</li> </ul>	<ul style="list-style-type: none"> <li>Accomplished by passage of state statutes, and rigorous integration of county, state, &amp; federal policies and process.</li> <li>Promote a “Very-Small-Business Center”.</li> <li>Promote “locally-owned” businesses.</li> <li>Work with local banks, Acequia, and Stockmen Associations to aid local agricultural producers who lack financial resources.</li> <li>Provide low interest loans for enterprises that promote a rural lifestyle, cottage industries, eco-tourism, and co-operatives.</li> </ul>	<ul style="list-style-type: none"> <li>Water use will match water supply.</li> <li>Agricultural Cooperatives will promote and sustain agriculture through:.</li> <li>Education, financial support, improved farming methods, crop diversity, shared use of equipment and teaching children about the importance and benefit of agriculture, and good agricultural conservation methods.</li> <li>*Would not require farmers and ranchers to work away from the land in order to maintain it</li> <li>*Would enable future generations to farm and ranch.</li> </ul>



<b>Goal: retain land use patterns that support and ensure a rural lifestyle and economy.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	rotation of fallow acres. <ul style="list-style-type: none"> <li>• Reduce the amount of presently fallow cropland, and prevent further cropland being taken out of production.</li> <li>• *Maintain the numbers of livestock and tilled acres that best benefits the environment and economy together.</li> </ul>			
<ul style="list-style-type: none"> <li>• Increase efficiency of irrigation ditch system.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop protective zoning for acequia irrigated lands.</li> <li>• Use land use planning, and laws to prevent development on irrigated or non-irrigated farmland.</li> <li>• Prohibit sale of water out of sub-region.</li> <li>• Develop a consistent and sustained supply, and distribution of irrigation water.</li> <li>• Provide annual maintenance to all irrigation ditches (mains and laterals).</li> <li>• Repair and construct head, and farm gates for water control.</li> <li>• Line irrigation ditch systems and laterals, where necessary, with concrete or PVC pipe.</li> <li>• Repair blown out culverts and broken flumes.</li> <li>• Redirect ditches to reduce gradient where possible.</li> <li>• Reduce and prevent increased incising of irrigation ditches.</li> <li>• Re-contour segments of ditches that have become channelized.</li> </ul>	•	•	<ul style="list-style-type: none"> <li>• Provide a topography that makes application of water to fields more.</li> <li>• Reduce sheet and rill erosion which causes channelization.</li> </ul>
<b>Goal: promote conservation of water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>

**Goal: promote conservation of water.**

<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Create water-wise residents and communities.</li> </ul>	<ul style="list-style-type: none"> <li>• *Utilize new technologies.</li> <li>• Disseminate water-saving information (A-56).</li> <li>• Develop water budget to understand water recharge and water use.</li> <li>• Develop local water conservation and drought plans (A-18).</li> <li>• Fund domestic water cooperatives to improve their water systems.</li> <li>• Fund acequias to increase operating efficiency (A-60).</li> <li>• Adopt graduated water rates in all domestic systems (A-21).</li> <li>• Adopt a conservation fee added to all water systems for promotion of water conservation.</li> <li>• Promote adoption of domestic water-saving technologies (A-22).</li> <li>• Promote greywater reuse (A-24).</li> <li>• Encourage rainwater harvesting (A-44).</li> <li>• Improve storm water management (A-34).</li> <li>• Use agricultural methods that reduce water utilization.</li> <li>• Reduce water loss in acequias.</li> <li>• Promote projects to increase irrigation efficiency (A-10).</li> <li>• Reduce artificial open water evaporation (A-45).</li> <li>• Meter all water supply wells (A-8).</li> <li>• Limit wells that could impair surface or groundwater (A-61).</li> <li>• Capture flood flows.</li> <li>• *Institute incentives for water</li> </ul>	<ul style="list-style-type: none"> <li>• Over the next 50 years.</li> </ul>	<ul style="list-style-type: none"> <li>• Guide water use reduction in a trickle down fashion to the state level, and similarly from state level to local levels.</li> <li>• Key federal legislation.</li> <li>• Tax incentives and credits.</li> <li>• Funding.</li> </ul>	<ul style="list-style-type: none"> <li>• Public understanding of water conservation will increase.</li> </ul>

<b>Goal: promote conservation of water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	conservation and recycling.			
*Promote local control and discretionary authority.	<ul style="list-style-type: none"> <li>• *Ensure modernized, well-maintained water systems.</li> <li>• *Create an inter-water-systems board.</li> <li>• *Coordinate water use among area water systems.</li> <li>• *Create cooperation among area water systems.</li> <li>• *Implement and apply the right of self-determination in local governance of water issues.</li> </ul>	•	•	•

<b>Goal: promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Create water conscious communities by providing education centered on soil and water conservation, and alternative energy and building methods.</li> <li>• Studies show a close link between detrimental impacts to the local ecology and economic losses of local producers.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop school curricula and outdoor projects on these subjects.</li> <li>• Develop school curricula concerning water conservation (A-56).</li> <li>• Develop school curricula concerning water conservation methods, such as, mulching, composting, swales, rain barrels and other catchment systems, and uses hands on training.</li> <li>• Work with local schools to involve children and young adults in agriculture.</li> </ul>	<ul style="list-style-type: none"> <li>• Within 10 years ensure every education level includes water and land use curricula.</li> </ul>	<ul style="list-style-type: none"> <li>• Funding will support the education process (as above).</li> </ul>	<ul style="list-style-type: none"> <li>• Public understanding of the:.</li> <li>• idea of healthy land and healthy watersheds as personal and community wealth.</li> <li>• sacredness of water.</li> <li>• interrelationship of water and land management in watersheds.</li> <li>• roles of watersheds to store and release winter snowmelt and dissipate summer downpours.</li> <li>• central roles of climate and fire in the ecology of natural communities.</li> <li>• natural limits to the productivity of land.</li> <li>• natural limits to plant, wildlife and human</li> </ul>

<b>Goal: promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
				dependence on land. <ul style="list-style-type: none"> <li>• factors conducive to erosion, and methods to reduce or prevent it.</li> <li>• importance of riparian and wetland areas.</li> <li>• alternative methods of livestock handling, such as: fencing, pasturing, rotational grazing and other methods to reduce overgrazing and erosion.</li> <li>• relevant contemporary farming technologies and practices, such as: low impact agricultural methods-shallow or no plowing-, alternative and expanding crop markets.</li> <li>• benefits, and means of water conservation.</li> </ul>
<ul style="list-style-type: none"> <li>• *Assist future generations in learning about water.</li> </ul>	<ul style="list-style-type: none"> <li>• Provide a secondary education facility.</li> <li>• *Create a Natural Resource Educational Program (partner school districts with agencies such as Cuba Soil and Water Conservation District).</li> <li>• *Educate about ways to wisely use and reuse water.</li> <li>• Provide seminars and courses at local schools.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Funding will support educational facilities (as above).</li> </ul>	<ul style="list-style-type: none"> <li>• Allow local residents to stay in the area.</li> <li>• Teach technology and business skills needed to develop water and land centered occupations and enterprises.</li> <li>• Train youth to create occupations, mini businesses and enterprises.</li> </ul>

<b>Goal: promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• *Educate people (farmers and non-farmers) about the importance of land and water stewardship.</li> </ul>	<ul style="list-style-type: none"> <li>• *Share local agriculture knowledge.</li> <li>• *Share local knowledge and traditions regarding nurturing the land and husbanding the water.</li> <li>• Make educational packets available at Pueblo and Forest Service offices.</li> <li>• Promote an attitude of stewardship of the integrity of the ecosystems.</li> </ul>	•	•	•
<ul style="list-style-type: none"> <li>• *Reduce misunderstandings between newcomers, tourists, and long time residents.</li> </ul>	<ul style="list-style-type: none"> <li>• *Educate newcomers and visitors about local traditions and lifestyles.</li> </ul>	•	•	•

<b>Goal: provide for monitoring the implementation of the water plan.</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Public participation in the water planning process and water management.</li> </ul>	<ul style="list-style-type: none"> <li>• Increase monitoring and modeling of surface and groundwater (A-38).</li> <li>• Develop geographic watershed information system (A-73).</li> <li>• Maintain watershed steering committees.</li> <li>• Fund ongoing water planning (A-58).</li> <li>• Ensure continued public participation in water issues (A-53) through local water assemblies.</li> </ul>	<ul style="list-style-type: none"> <li>• Within 20 years</li> </ul>	<ul style="list-style-type: none"> <li>• Use state and federal support.</li> <li>• Legislation will create and support citizen water assemblies/forums until their functions can be integrated into all levels of executive and legislative branches</li> </ul>	•

These were included elsewhere so deleted (see Pg #s)

- *Implement rotation grazing practices (see \*\* pg 2).*
- *Maintain diversity of use by wildlife and livestock. (unsure what the meaning of this is)*
- *\*Ensure good water quality (this is contained in a goal)*
- *\*Preserve the greatest amount of biological diversity (see \*\* Pg 4)*
- *\*Acequia water banking (see \*\* pg 6)*
- *Create and maintain local farmer markets (see\*\* Pg 9)*
- *Promote and encourage use of local crops (again see \*\* Pg 9)*

- \*Maintain the rural nature of the sub-region with agriculture and ranching as an integral part. (again see Pg 9)
- *Establish Agricultural co-ops* (again see \*\* Pg 9)
- *Marketing* (again see \*\* Pg 9)
- \*Enhance conservation of water and preservation of the land (this is included in GOAL)

History: Laws 2003, ch. 54, § 1 and Laws 2003, ch. 132, § 1.

73-2-21 E.

E. Pursuant to the rules or bylaws duly adopted by its members, an acequia or community ditch may require that a change in point of diversion or place or purpose of use of a water right served by the acequia or community ditch, or a change in a water right so that it is moved into and then served by the acequia or community ditch, shall be subject to approval by the commissioners of the acequia or community ditch. The change may be denied only if the commissioners determine that it would be detrimental to the acequia or community ditch or its members. The commissioners shall render a written decision explaining the reasons for the decision. If the person proposing the change or a member of the acequia or community ditch is aggrieved by the decision of the commissioners, he may appeal the decision in the district court of the county in which the acequia or community ditch is located within thirty days of the date of the decision. The court may set aside, reverse or remand the decision if it determines that the commissioners acted fraudulently, arbitrarily or capriciously, or that they did not act in accordance with law. (also 73-3-4.1. Commissioners; additional duties; approval of changes in place or purpose of use of water; appeals. (Effective March 1, 2004.). )

73-2-55.1. Water banking; acequias and community ditches.

An acequia or community ditch may establish a water bank for the purpose of temporarily reallocating water without change of purpose of use or point of diversion to augment the water supplies available for the places of use served by the acequia or community ditch. The acequia or community ditch water bank may make temporary transfers of place of use without formal proceedings before the state engineer, and water rights placed in the acequia or community ditch water bank shall not be subject to loss for non-use during the period the rights are placed in the water bank. An acequia or community ditch water bank established pursuant to this section is not subject to recognition or approval by the interstate stream commission or the state engineer.

**FINAL DRAFT COMBINED RIO PUERCO y RIO JEMEZ SUB-REGIONAL SCENARIO: 2003-2050 (9/21/03)**

<b>Goal: restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Restore a fire-adapted watershed</li> </ul>	<ul style="list-style-type: none"> <li>• Thin forests and woodlands in an ecologically sound manner (A-66)</li> <li>• Treat grassland brush in an ecologically sound manner</li> <li>• Develop a network of natural and artificial fire and fuel breaks to define 5000+ acre fire management units throughout the watershed</li> <li>• Manage forage utilization to maintain ground cover and carry fire</li> <li>• Apply prescribed fire frequently and extensively to established fire management units</li> <li>• Create defensible spaces around all dwellings and structures</li> <li>• Provide for adequate fire protection of structures to facilitate burning</li> </ul>	<ul style="list-style-type: none"> <li>• Within 30 years</li> </ul>	<ul style="list-style-type: none"> <li>• New federal fuel reduction and fire prevention funds for public lands</li> <li>• Tax rebates and credits, and matching funds for private land</li> <li>• New state fuel reduction and fire prevention funds for state lands</li> <li>• Use Best Management Practices</li> </ul>	<ul style="list-style-type: none"> <li>• Protect watershed, land and property values</li> <li>• Reduce potential of catastrophic wildfires</li> <li>• Save costs in suppression of catastrophic fires</li> <li>• Create many local jobs</li> <li>• Create value added industry, and permanent jobs</li> </ul>
<ul style="list-style-type: none"> <li>• Decrease soil erosion and increase water retention and infiltration</li> </ul>	<ul style="list-style-type: none"> <li>• Expand watershed management programs (A-33)</li> <li>• Promote good soil management practices</li> <li>• Reduce and prevent surface water runoff on grazed lands</li> <li>• Reduce development and increasing use of unpaved roads</li> <li>• Use low impact agricultural methods such as shallow or no plowing</li> <li>• Apply soil conservation techniques such as installation of field borders</li> <li>• Improve grazing management through methods such as fencing, pasturing, rotational grazing</li> </ul>	<ul style="list-style-type: none"> <li>• Within 15 years</li> </ul>	<ul style="list-style-type: none"> <li>• New federal soil erosion funds for public lands</li> <li>• Tax rebates and credits, and matching funds for private land</li> <li>• New state soil erosion funds for state lands</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce deterioration of the land</li> <li>• Increase productivity of land</li> <li>• Increase benefit to landowners and producers</li> <li>• Retain soil nutrients, topsoil and seed</li> <li>• Reduce flash runoff and gullying</li> </ul>

<b>Goal: restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	<ul style="list-style-type: none"> <li>• Laser level irrigated fields</li> <li>• Line or pipe irrigation ditch systems, or segments most prone to erosion</li> <li>• Improve groundcover on rangeland</li> </ul>			
<ul style="list-style-type: none"> <li>• Reduce, prevent and repair incising of arroyos</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce formation of, and stabilize head cuts, gullies and arroyos</li> <li>• Use Best Management Practices to catch soils and fill arroyos</li> <li>• Repair deeply eroded cuts with heavy equipment</li> <li>• Repair smaller cuts with grade stabilization structures such as weirs, net wire diversions, rock and brush dams</li> <li>• Monitor and maintain all structures</li> </ul>	<ul style="list-style-type: none"> <li>• Within 30 years</li> </ul>	<ul style="list-style-type: none"> <li>• New federal erosion funds for public lands</li> <li>• Tax rebates and credits, and matching funds for private land</li> <li>• New state erosion funds for state lands</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce general deterioration of the land</li> <li>• Increase benefit to landowners and producers</li> <li>• Retain soil nutrients, topsoil and seed</li> <li>• Raise the water table and recharge springs and seeps</li> </ul>
<ul style="list-style-type: none"> <li>• Reduce, prevent, and repair habitat loss along streams, arroyos, and in wetland and riparian areas</li> </ul>	<ul style="list-style-type: none"> <li>• Re-vegetate along streams and ephemeral waterways, plant willow and cottonwood trees at unstable banks and along non-vegetated segments</li> <li>• Construct fencing to protect riparian and wetland areas, and plantings from livestock</li> <li>• Stabilize channel banks</li> <li>• Re-create and induce stream meanders</li> <li>• Enhance and protect floodplains</li> <li>• Prohibit development in areas within flood plains, or which have hydrologic problems such as storm water ponding, poor drainage, high water table</li> <li>• Prohibit development in wetlands or riparian areas</li> </ul>	<ul style="list-style-type: none"> <li>• Within 15 years</li> </ul>	<ul style="list-style-type: none"> <li>• Develop federal, state, local, and charitable funding</li> <li>• Work with relevant agencies and non-profit organizations</li> <li>• Tax rebates and credits, and matching funds for private land</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce loss of important plant species in drought years</li> <li>• Improve functioning of vegetation for flood and sediment control</li> <li>• Reduce flooding damages</li> <li>• Provide habitat for numerous wildlife species, and migratory birds</li> <li>• Increase opportunities for wildlife viewers and hunters</li> </ul>



<b>Goal: restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Increase the bio-diversity and production on public and private lands including wild and domestic species</li> </ul>	<ul style="list-style-type: none"> <li>• Manage sagebrush monocultures and reduce numbers of juniper trees</li> <li>• Remove non-native vegetation from riparian areas</li> <li>• Control noxious, invasive, and non-native weed species (A-1)</li> <li>• Seed with native grasses, and plants</li> <li>• Develop grass banks and other cooperative programs</li> <li>• Develop drought management plans for grazing</li> </ul>	<ul style="list-style-type: none"> <li>• Within 20 years</li> </ul>	<ul style="list-style-type: none"> <li>• Develop federal, state, local, and charitable funding</li> <li>• Work with relevant agencies and non-profit organizations</li> <li>• Tax rebates and credits, and matching funds for private land</li> </ul>	<ul style="list-style-type: none"> <li>• Healthy and productive plant and animal communities in an ecosystem with a diversity of species, size classes, and ages</li> <li>• Increase drought resistance</li> <li>• Increase forage, native grass production, and groundcover</li> <li>• Create local jobs</li> <li>• Increase benefit to landowners and producers</li> </ul>
<ul style="list-style-type: none"> <li>• Provide, consistent and sustainable sources, and adequate distribution of rangeland water</li> </ul>	<ul style="list-style-type: none"> <li>• Drill wells for development of alternative upland water</li> <li>• Install improved well pump technology on existing wells</li> <li>• Install water pipelines and drinking troughs</li> <li>• Use various methods to reduce competition for forage between livestock and wildlife</li> </ul>	<ul style="list-style-type: none"> <li>• Within 15 years</li> </ul>	<ul style="list-style-type: none"> <li>• Develop federal, state, local, and charitable funding</li> <li>• Work with relevant agencies and non-profit organizations</li> <li>• Tax rebates and credits, and matching funds for private land</li> </ul>	<ul style="list-style-type: none"> <li>• Achieve a balanced animal-use pattern across the landscape to reduce overgrazing, and increase size and productivity of wildlife and livestock</li> <li>• Increase water availability and distribution to reduce competition for water resources between livestock and wildlife</li> </ul>
<ul style="list-style-type: none"> <li>• Maintain agriculture and ranching as part of the whole ecosystem</li> </ul>	<ul style="list-style-type: none"> <li>• Implement management practices that are environmentally friendly and sustainable</li> <li>• Create and implement local management plans</li> <li>• Promote an attitude of stewardship of the integrity of the ecosystems</li> </ul>	<ul style="list-style-type: none"> <li>• Over the next 50 years</li> </ul>	<ul style="list-style-type: none"> <li>• Develop federal, state, local, and charitable funding</li> <li>• Work with relevant agencies and non-profit organizations</li> <li>• Work with land management agencies to develop plans</li> <li>• Work with local planners to create and maintain relevant zoning</li> </ul>	<ul style="list-style-type: none"> <li>• Increase sustainability of farming and ranching</li> <li>• Increase benefit to landowners and producers</li> </ul>
<ul style="list-style-type: none"> <li>• Maintain the scenic and</li> </ul>	<ul style="list-style-type: none"> <li>• Create and implement local</li> </ul>	<ul style="list-style-type: none"> <li>• Over the next 50</li> </ul>	<ul style="list-style-type: none"> <li>• Work with land</li> </ul>	<ul style="list-style-type: none"> <li>• Promote general well</li> </ul>

<b>Goal: restore and manage the watersheds on public and private land to enhance water retention and quality and to reduce the threat of wildfire, and to preserve natural systems dependent on water</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
ecological conditions which attracted our ancestors and us to the area	management plans <ul style="list-style-type: none"> <li>• Include forests, rangelands wetland/riparian areas; ranching and agriculture</li> </ul>	years	management agencies to develop plans <ul style="list-style-type: none"> <li>• Work with local planners to create and maintain relevant zoning</li> </ul>	being of residents <ul style="list-style-type: none"> <li>• Provide sustainable tourist industry</li> </ul>

<b>Goal: support the cultural and spiritual values of water, and the universal need for and importance of water</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Realize the spiritual benefits of ancient forests, free-flowing rivers, living deserts and the abundance of life flourishing in all these areas, aside from the economic benefits</li> </ul>	<ul style="list-style-type: none"> <li>• Promote appreciation of the dependence of all life on water</li> <li>• Promote the sanctity of watercourses</li> <li>• Promote a spring water festival in which knowledge of water as a sacred gift is restored by blessing of the local acequias and streams by priests and medicine men</li> <li>• Promote a fall harvest festival linked to the County Fair to celebrate the perseverance and cohesion of rural agricultural communities</li> <li>• Promote water events throughout the year to keep people focused on the importance of water and soil management</li> <li>• Develop public parks and interpretive areas along perennial streams near villages</li> <li>• Develop adopt-a-watercourse programs</li> <li>• Develop community gardens</li> <li>• Maintain local cultural and religious traditions</li> </ul>	<ul style="list-style-type: none"> <li>• Within 10 years</li> </ul>	<ul style="list-style-type: none"> <li>• Integrate community and spiritual leaders around water and land care</li> </ul>	<ul style="list-style-type: none"> <li>• Promote cohesion of the community regarding care for the ecosystems that sustain us</li> </ul>

<b>Goal: ensure treaty, water, and acequia rights to preserve and protect local agricultural traditions</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>

<b>Goal: ensure treaty, water, and acequia rights to preserve and protect local agricultural traditions</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>Promote agriculture and its beneficial use of water</li> </ul>	<ul style="list-style-type: none"> <li>Form local agricultural cooperatives to work fallow land</li> <li>Support acequia and agricultural land improvement programs</li> </ul>	<ul style="list-style-type: none"> <li>Over the next 50 years</li> </ul>	<ul style="list-style-type: none"> <li>Develop federal, state, local, and charitable funding</li> <li>Work with relevant agencies and non-profit organizations</li> <li>Work with legislators and local officials to develop mechanisms and legislation which integrates and expands on ways to protect water for agriculture</li> </ul>	<ul style="list-style-type: none"> <li>Maintain productivity of agricultural lands</li> <li>Maintain agricultural water rights</li> <li>Protect and preserve areas presently and historically used for agricultural practices</li> </ul>
<ul style="list-style-type: none"> <li>Maintain the integrity of the traditional acequia systems that have existed for generations</li> </ul>	<ul style="list-style-type: none"> <li>Protect acequia priority of rights-of-way</li> <li>Encourage acequias to pass bylaws to review any change of diversion in accord with §73-2-21(E)</li> <li>Encourage acequias to pass bylaws to create a water bank in accord with §73-2-551</li> <li>Map, catalog, and describe acequias including annual water use</li> <li>Identify, quantify, and adjudicate surface water rights and order of water utilization (A-71)</li> </ul>	<ul style="list-style-type: none"> <li>Over the next 50 years</li> </ul>	<ul style="list-style-type: none"> <li>Develop federal, state, local, and charitable funding</li> <li>Work with relevant agencies and non-profit organizations</li> <li>Work with legislators and local officials to develop mechanisms and legislation which integrates and expands on ways to protect acequias</li> </ul>	<ul style="list-style-type: none"> <li>Maintains the diversity of historic, and prehistoric cultures and traditions</li> <li>Increase benefit to landowners and producers</li> </ul>
<ul style="list-style-type: none"> <li>Increase efficiency of irrigation ditch systems</li> </ul>	<ul style="list-style-type: none"> <li>Develop a consistent and sustained supply, and distribution of irrigation water</li> <li>Provide annual maintenance to all irrigation ditches</li> <li>Line or pipe irrigation ditch systems</li> <li>Construct head, and farm gates for water control</li> <li>Maintain and repair culverts, flumes, head, and farm gates</li> <li>Re-contour and repair segments of ditches to reduce gradient, and prevent</li> </ul>	<ul style="list-style-type: none"> <li>Within 10 years</li> </ul>	<ul style="list-style-type: none"> <li>Develop federal, state, local, and charitable funding</li> <li>Work with relevant agencies and non-profit organizations</li> <li>Work with legislators and local officials to develop mechanisms and legislation which integrates and expands on ways to maintain acequias</li> <li>Tax rebates and credits, and matching funds for</li> </ul>	<ul style="list-style-type: none"> <li>Increase productivity of irrigated land</li> <li>Increase availability of water during drought</li> <li>Provide a topography that makes application of water to fields more</li> </ul>

<b>Goal: ensure treaty, water, and acequia rights to preserve and protect local agricultural traditions</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	incising <ul style="list-style-type: none"> <li>• Laser level fields</li> </ul>		private land	
<ul style="list-style-type: none"> <li>• Keep water with the land</li> </ul>	<ul style="list-style-type: none"> <li>• Establish a severance fee to discourage removal of water and land from an acequia system</li> <li>• Develop mechanisms to ensure water rights are not lost if water is kept in or returned to a waterway</li> <li>• Develop mechanisms to prevent transfer of surface and ground water rights from their locality</li> <li>• Prevent sale of water out of sub-regions</li> <li>• Promote customary laws &amp; practices in existence prior to the 1848 Treaty of GH that promote agriculture and communal property</li> </ul>	<ul style="list-style-type: none"> <li>• Over the next 50 years</li> </ul>	<ul style="list-style-type: none"> <li>• Work with relevant agencies and non-profit organizations</li> <li>• Work with legislators and local officials to develop mechanisms and legislation which integrates and expands on ways to maintain traditional communal concepts</li> </ul>	<ul style="list-style-type: none"> <li>• Maintains a link to the customary laws and practices of historic and prehistoric cultures and traditions</li> <li>• Increase options for the use of agricultural water without loss of water rights</li> </ul>
<ul style="list-style-type: none"> <li>• Promote respect for rural, tribal, farming, and ranching lifestyles</li> </ul>	<ul style="list-style-type: none"> <li>• Form lobbying groups</li> <li>• Form local acequia and agricultural Associations</li> <li>• Educate about the importance of farming and ranching</li> </ul>	<ul style="list-style-type: none"> <li>• Over the next 50 years</li> </ul>	<ul style="list-style-type: none"> <li>• Work with legislators and local officials to develop mechanisms and legislation which integrates and expands on ways to maintain rural, tribal, farming, and ranching lifestyles</li> <li>• Work with school officials to develop curricula</li> </ul>	<ul style="list-style-type: none"> <li>• Recognition of the importance of agriculture and rural areas</li> </ul>

<b>Goal: retain land use patterns that support and ensure a rural lifestyle and economy</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Base regional growth, planning, and zoning on retaining the health of the entire ecosystem</li> </ul>	<ul style="list-style-type: none"> <li>• Tie land-use to demonstrated availability of water</li> <li>• Manage growth within the limits of water, and a rural landscape (A-52)</li> <li>• Require water availability before land subdivision</li> <li>• Manage growth by putting geographical or numerical limits on population</li> <li>• Implement land use plans that differentiate between rural, suburban, and urban areas</li> <li>• Maintain large areas of mostly vacant and predominantly undeveloped land, with limited low-density housing</li> <li>• Encourage designated areas for higher density housing with clean, eco-friendly, nearby businesses, and industries</li> <li>• Use creative planning that does not require commuting</li> <li>• Include the cost of environmental damage when assessing planning alternatives</li> <li>• Consider the cumulative affects of development</li> </ul>	<ul style="list-style-type: none"> <li>• Over the next 50 years</li> </ul>	<ul style="list-style-type: none"> <li>• Work with local and county planners</li> <li>• Work with legislators</li> </ul>	<ul style="list-style-type: none"> <li>• Promote general well being of residents</li> <li>• Provide a sustainable economy</li> <li>• Increase ability to withstand drought</li> </ul>

<b>Goal: retain land use patterns that support and ensure a rural lifestyle and economy</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>Develop a program that systematically fosters cooperation among various sectors of the sub-regions with water as a primary focus</li> </ul>	<ul style="list-style-type: none"> <li>Adopt policies to integrate land use planning and water resource management (A-30)</li> <li>Create an inter-water-systems board</li> <li>Enhance cooperation and coordinate water use among area water systems</li> <li>Promote local control and discretionary authority</li> <li>Implement and apply the right of self-determination in local governance of water issues</li> </ul>	<ul style="list-style-type: none"> <li>Within 10 years</li> </ul>	<ul style="list-style-type: none"> <li>Work with federal, state, county, and local agencies and officials</li> </ul>	<ul style="list-style-type: none"> <li>Share experience and knowledge</li> <li>Coordinate projects and activities</li> <li>Prevent duplication of effort</li> </ul>
<ul style="list-style-type: none"> <li>Create a sustainable economy that bolsters self-sufficiency of the sub-regional communities, and helps prevent loss of the agrarian lifestyle</li> </ul>	<ul style="list-style-type: none"> <li>Develop local agricultural cooperatives</li> <li>Encourage development of a wide diversity of crops throughout the sub-regions such as native and traditional crops, contemporary crops, and new and emerging crops</li> <li>Develop markets for locally grown produce and meat (A-11)</li> <li>Promote farmers' markets</li> <li>Develop creative marketing of livestock such as organic, predator friendly, low-impact</li> <li>Implement new farming technologies that will help to increase production</li> <li>Plan and maintain a schedule for rotation of fallow acres</li> <li>Reduce the amount of presently fallow cropland</li> <li>Manage the numbers of livestock and tilled acres that best benefits the</li> </ul>	<ul style="list-style-type: none"> <li>Over the next 50 years</li> </ul>	<ul style="list-style-type: none"> <li>Work with legislators and local officials to develop legislation and mechanisms which integrate county, state, and federal policies and processes <ul style="list-style-type: none"> <li>Promote a "Very-Small-Business Center"</li> <li>Promote locally-owned businesses</li> </ul> </li> <li>Work with local banks, and agricultural associations to aid local agricultural producers who lack financial resources <ul style="list-style-type: none"> <li>Provide low interest loans for enterprises that promote a rural lifestyle, cottage industries, eco-tourism, and cooperatives</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Agricultural cooperatives will promote and sustain agriculture through education, financial support, improved farming methods, crop diversity, shared use of equipment and teaching children about the importance and benefit of agriculture, and good agricultural conservation methods <ul style="list-style-type: none"> <li>Allow farmers and ranchers to work on the land, rather than elsewhere in order to maintain it</li> <li>Enable future generations to farm and ranch</li> <li>Provide sustainable tourist industry</li> </ul> </li> </ul>

<b>Goal: retain land use patterns that support and ensure a rural lifestyle and economy</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	environment and economy together			
<ul style="list-style-type: none"> <li>• Protect agricultural lands from development</li> </ul>	<ul style="list-style-type: none"> <li>• Develop “Rural Agricultural Areas”</li> <li>• Develop protective zoning for acequia irrigated lands</li> <li>• Require that planning and zoning consider impacts on traditional cultures and lifestyles, and cumulative effects</li> <li>• Prevent paving over and building on agricultural lands</li> </ul>	<ul style="list-style-type: none"> <li>• Over the next 50 years</li> </ul>	<ul style="list-style-type: none"> <li>• Work with legislators and local officials to develop laws</li> <li>• Work with land trusts to develop mechanisms to retain agricultural land</li> <li>• Work with officials to develop land use management tools to prevent development on irrigated or non-irrigated farmland</li> </ul>	<ul style="list-style-type: none"> <li>• Maintains an agricultural land base</li> <li>• Promote general well being of residents</li> <li>• Maintains rural atmosphere</li> </ul>
<ul style="list-style-type: none"> <li>• Protect and improve the quality of the domestic supply of surface and ground water</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and protect groundwater recharge areas (A-47)</li> <li>• Ensure modernized, well-maintained water systems</li> <li>• Limit and reduce vehicular low-water stream crossings</li> <li>• Clean up watercourses, remove garbage, trash, and vehicles from arroyos</li> <li>• Require sewage treatment systems in higher density communities (A-26)</li> <li>• Use constructed wetlands for final sewage treatment (A-36)</li> <li>• Remove trace elements</li> </ul>	<ul style="list-style-type: none"> <li>• Within 10 years</li> </ul>	<ul style="list-style-type: none"> <li>• Work with federal, state, county, and local agencies and officials</li> <li>• Develop federal, state, local, and charitable funding</li> <li>• Work with relevant agencies and non-profit organizations</li> <li>• Tax rebates and credits, and matching funds for private land</li> <li>• Create programs to aid rural water organizations with the proposal writing and funding process</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure satisfactory water quality</li> </ul>
<ul style="list-style-type: none"> <li>• Provide for increased, consistent and sustainable sources of both domestic and agricultural water</li> </ul>	<ul style="list-style-type: none"> <li>• Implement projects to thin trees and brush on public and private land</li> <li>• Implement controlled burn projects on public and private land</li> <li>• Construct water storage reservoirs and tanks</li> <li>• Install community domestic supply wells</li> <li>• Identify and provide for residential fire-fighting water</li> </ul>	<ul style="list-style-type: none"> <li>• Within 10 years</li> </ul>	<ul style="list-style-type: none"> <li>• Work with federal, state, county, and local agencies and officials</li> <li>• Develop federal, state, local, and charitable funding</li> <li>• Work with relevant agencies and non-profit organizations</li> <li>• Tax rebates and credits, and matching funds for</li> </ul>	<ul style="list-style-type: none"> <li>• Water use will match water supply</li> <li>• Increase ability to withstand drought</li> </ul>

<b>Goal: retain land use patterns that support and ensure a rural lifestyle and economy</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	<ul style="list-style-type: none"> <li>• Limit domestic wells to 16 per section</li> <li>• Address ground/surface water interactions in state water-rights statutes (A-144)</li> <li>• Limit wells that could impair surface or groundwater (A-61)</li> <li>• Develop local drought plans (A-18)</li> </ul>		private land <ul style="list-style-type: none"> <li>• Create programs to aid rural water organizations with the proposal writing and funding process</li> </ul>	

<b>Goal: promote conservation of water</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Develop water-wise residents and communities</li> </ul>	<ul style="list-style-type: none"> <li>• Disseminate water-saving information (A-56)</li> <li>• Develop local water budgets to understand water recharge and water use</li> <li>• Develop local water conservation and drought plans (A-18)</li> <li>• Adopt graduated water rates in all domestic systems (A-21)</li> <li>• Institute incentives for water conservation and recycling</li> <li>• Adopt a conservation fee added to all water systems for promotion of water conservation</li> <li>• Meter all water supply wells (A-8)</li> <li>• Meter all surface water diversions (A-7)</li> </ul>	<ul style="list-style-type: none"> <li>• Within 15 years</li> </ul>	<ul style="list-style-type: none"> <li>• Work with federal, state, county, and local agencies and officials</li> <li>• Develop federal, state, local, and charitable funding</li> <li>• Work with relevant agencies and non-profit organizations</li> <li>• Tax rebates and credits, and matching funds for private land</li> </ul>	<ul style="list-style-type: none"> <li>• Increase in public understanding of water use and conservation</li> <li>• Increase in water conservation</li> </ul>
<ul style="list-style-type: none"> <li>• Increase efficiency of water use</li> </ul>	<ul style="list-style-type: none"> <li>• Encourage use of new water-saving technologies (A-22)</li> <li>• Encourage greywater reuse (A-24)</li> <li>• Encourage rainwater harvesting (A-44)</li> <li>• Improve storm water management (A-34)</li> <li>• Capture flood flows</li> </ul>	<ul style="list-style-type: none"> <li>• Within 15 years</li> </ul>	<ul style="list-style-type: none"> <li>• Work with federal, state, county, and local agencies and officials</li> <li>• Develop federal, state, local, and charitable funding</li> <li>• Work with relevant agencies and non-profit organizations</li> </ul>	<ul style="list-style-type: none"> <li>• Reduction in water waste</li> </ul>



<b>Goal: promote conservation of water</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
	<ul style="list-style-type: none"> <li>• Reduce water loss in acequias</li> <li>• Increase irrigation efficiency (A-10)</li> <li>• Reduce artificial open water evaporation (A-45)</li> <li>• Fund domestic water cooperatives to improve their water systems</li> <li>• Fund acequias to increase operating efficiency (A-60)</li> </ul>		<ul style="list-style-type: none"> <li>• Tax rebates and credits, and matching funds for private land</li> </ul>	

<b>Goal: promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Create water conscious communities and assist future generations in learning about water</li> </ul>	<ul style="list-style-type: none"> <li>• Develop school curricula and outdoor projects on subjects such as soil and water conservation, and alternative energy and building methods (A-56)</li> <li>• Develop school curricula concerning water conservation methods, such as, mulching, composting, swales, rain barrels and other catchment systems, and uses hands on training</li> <li>• Provide a secondary education facility</li> <li>• Create a Natural Resource Educational Program (partner school districts with agencies such as Cuba Soil and Water Conservation District)</li> <li>• Educate about ways to wisely use and reuse water</li> <li>• Provide seminars and courses at local schools</li> </ul>	<ul style="list-style-type: none"> <li>• Within 10 years ensure every education level includes water and land use curricula</li> </ul>	<ul style="list-style-type: none"> <li>• Work with federal, state, county, and local agencies and officials, and non-profit organizations</li> <li>• Develop federal, state, local, and charitable funding</li> <li>• Work with local schools to develop water and land use projects and curricula</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding of healthy land and watersheds as personal and community wealth</li> <li>• Understanding of the interrelationship of water and land management in watersheds</li> <li>• Understanding of the role of watersheds to store and release water</li> <li>• Understanding of the central role of climate and fire in the ecology of natural communities</li> <li>• Understanding of the natural limits to the productivity of land</li> <li>• Understanding of the natural limits to plant, wildlife and human dependence on land</li> <li>• Understanding of factors conducive to erosion, and methods to reduce or prevent</li> </ul>

<b>Goal: promote education for area residents regarding the connection between land use, water and environmental health, and ways to conserve water</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
				it <ul style="list-style-type: none"> <li>• Understanding of the importance of riparian and wetland areas</li> <li>• Understanding of alternative methods of livestock handling,</li> <li>• Understanding of relevant contemporary farming technologies and practices,</li> <li>• Understanding of the benefits and means of water conservation</li> <li>• Understanding of the link between detrimental impacts to the natural environment and economic losses of local producers</li> </ul>
<ul style="list-style-type: none"> <li>• Educate people (farmers and non-farmers) about the importance of land and water stewardship, and farming and ranching</li> </ul>	<ul style="list-style-type: none"> <li>• Share local agriculture knowledge</li> <li>• Share local knowledge and traditions regarding nurturing the land and husbanding the water</li> <li>• Make educational packets available at Pueblo and Forest Service offices</li> <li>• Promote an attitude of stewardship of the integrity of the ecosystems</li> <li>• Involve children and young adults in agriculture</li> <li>• Educate newcomers and visitors about local traditions and lifestyles</li> </ul>	<ul style="list-style-type: none"> <li>• Within 10 years ensure every education level includes curricula regarding the importance of agriculture</li> </ul>	<ul style="list-style-type: none"> <li>• Work with federal, state, county, and local agencies and officials, and non-profit organizations</li> <li>• Develop federal, state, local, and charitable funding</li> <li>• Work with local schools to develop agricultural projects and curricula</li> </ul>	<ul style="list-style-type: none"> <li>• Allow local residents to stay in the area</li> <li>• Teach technology and business skills needed to develop water and land centered occupations and enterprises</li> <li>• Train youth to create occupations, mini businesses and enterprises</li> <li>• Reduce misunderstandings between newcomers, tourists, and long time residents</li> </ul>

<b>Goal: provide for monitoring the implementation of the water plan</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
<ul style="list-style-type: none"> <li>• Public participation in the water planning process</li> </ul>	<ul style="list-style-type: none"> <li>• Increase monitoring and modeling of surface and groundwater (A-38)</li> </ul>	<ul style="list-style-type: none"> <li>• Within 20 years</li> </ul>	<ul style="list-style-type: none"> <li>• Use state and federal support</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>

<b>Goal: provide for monitoring the implementation of the water plan</b>				
<b>OBJECTIVE</b>	<b>ACTIONS</b>	<b>LENGTH</b>	<b>FUNDING/POLICIES</b>	<b>BENEFITS</b>
and water management	<ul style="list-style-type: none"> <li>• Develop geographic watershed information system (A-73)</li> <li>• Maintain watershed steering committees</li> <li>• Fund ongoing water planning (A-58)</li> <li>• Ensure continued public participation in water issues (A-53) through local water assemblies</li> </ul>		<ul style="list-style-type: none"> <li>• Legislation will create and support citizen water assemblies/forums until their functions can be integrated into all levels of executive and legislative branches</li> </ul>	

Two laws, passed by the New Mexico legislature in 2003, give more control to the acequias, should they chose to exercise same:

- 1) §73-3-4.1. Commissioners; additional duties; approval of changes in place or purpose of use of water; appeals. (Effective March 1, 2004.). (2003)

Pursuant to rules or bylaws duly adopted by its members, an acequia or community ditch may require that a change in the point of diversion or place or purpose of use of a water right served by the acequia or community ditch, or a change in a water right so that it is moved into and then served by the acequia or community ditch shall be subject to the approval by the commissioners. The change may be denied only if the commissioners determine that it would be detrimental to the acequia or community ditch or its members. The commissioners shall render a written decision explaining the reasons for the decision. If the person proposing the change or a member of the acequia or community ditch is aggrieved by the decision of the commissioners, he may appeal the decision in the district court of the county in which the acequia or community ditch is located within thirty days of the date of the decision. The court may set aside, reverse or remand the decision if it determines that the commissioners acted fraudulently, arbitrarily or capriciously or that they did not act in accordance with law. (duplicate language is included in §73-2-21 (E) Commissioners' powers and duties; mayordomo's duties.) (Effective March 1, 2004, NMSA 1978 Comp. 2003.)

- 2) §73-2-551 Water banking; acequias and community ditches (2003)

An acequia or community ditch may establish a water bank for the purpose of temporarily reallocating water without change of purpose of use or point of diversion to augment the water supplies available for the places of use served by the acequia or community ditch. The acequia or community ditch water bank may make temporary transfers of place of use without formal proceedings before the state engineer, and water rights placed in the acequia or community ditch water bank shall not be subject to loss for non-use during the period the rights are placed in the water bank. An acequia or community ditch water bank established pursuant to this section is not subject to recognition or approval by the interstate stream commission or the state engineer. History: Laws 2003, ch 54, § 1 and Laws 2003, ch 132, §

