

12.13. IMPLEMENTATION - THE NEXT STEPS

12.13.1. Introduction¹

The Regional Water Planning Handbook sets out the criteria necessary to complete a plan. As can be seen in the previous sections of the subregional plan, an energetic attempt was made to provide enough information, analysis and documentation to answer the following questions:

- What is the water supply available to the region?
- What is the regions current and projected water demand?
- What alternatives are available to meet the projected demand with available supplies, including management alternatives to increase supply and reduction of demand via conservation or other measures?
- What are the relative advantages and disadvantages of each alternative?
- What is the selected set of alternatives that comprise the plan and how the alternatives may be implemented?

The results are not as robust as needed to completely and confidently answer the questions. Regional data was not usable at the subregional level to begin to answer the questions. As mentioned in Section 10, guidance was sought to address this disparity, with the response being to "assume that future water supplies may be limited, population and development may increase the demand for water, and water resources may be vulnerable to contamination. Therefore, the Plan should be focused on implementing water use efficiencies, drought contingency planning, water pollution control, protection of watershed recharge areas, etc. Technical information and water management alternatives developed for the Middle Rio Grande area can be 'transferred' for applicability to the rural settings in the Rio Puerco and Rio Jemez watersheds." (Trujillo, March 13, 2003).²

That method was applied to the extent possible. Since the subregions had developed separate mission, goals, objectives and alternatives, in accord with the Scope of Work, it was not easy to "transfer" the technical information. As noted in Section 3, the Steering Committees reviewed the Feasibility of Candidate Alternative Actions workbook of the 44 alternatives under consideration for the Middle Rio Grande Regional Water Plan. Included in the appendices are the white papers prepared for the Jemez y Sangre Regional Water Planning Region ("Area of Origin - Critical Management Areas," "Restore and Manage Forests," and "Manage Growth and Land Use") which addressed similar subregional alternatives and which were also reviewed. A chart was developed showing which Middle Rio Grande alternatives supported those from the

¹ This section (Section 12 in the October draft) was rewritten by the principal author after receiving and reviewing comments on the Draft.

² In recognition that three subregions make up the planning region, perhaps in acknowledgment that the data and information developed for the plan was predominantly geared to the Middle Rio Grande sub-region, the Mid-Region Council Of Governments' Water Resources Board stated that "We encourage adoption and implementation of policies that conserve use of groundwater *in the Middle Rio Grande sub-region* ..." ("Principle Policies For The Regional Water Plan," August 22, 2003; emphasis added.)

Río Puerco and Río Jemez, and vice versa. A discussion was held looking for similarities and differences and how to best address those. These discussions and resources were utilized to develop the matrix found in Section 12 entitled "Fifty Year Water Plan For The Río Puerco And Río Jemez Sub-Regions."

Thanks to the voices of the valleys
reflecting the strength of the mountains,
the words of the watersheds
are present in this plan.

The matrix provided a useful tying together of goals, objectives, actions and benefits. It also proved to be useful in tying together the myriad of comments, suggestions and recommendations received over the four-year time frame into a practical framework. Scenario building, alternatives discussions and dialogue all helped to meld participants --particularly in the Río Jemez-- into an ever-more cohesive group. When focused on a common task --listening and adjusting to others concerns and issues-- the group completed their assignment.

At the same time, due to the lack of data and information available to answer the above questions, an additional effort was undertaken to obtain facts as to land use, water supply, water demand, and population trends and projections. Data discrepancies and gaps were noted. Given such, it was not deemed realistic to project demands based upon inconsistent and unsound baseline data, nor to use with confidence that which was projected.

As noted by the ISC, "[t]ying the Goals to the Preferred Alternatives is a good step and Table 12.10.3 (now 12.12.2.) is a good list of action items." However, as further noted, there is "no technical analysis of the alternatives provided, the time frame is vague, there is no estimated wet water yield pursuant to the alternatives, and there is no estimated costs of implementing these alternatives provided-- especially those that are capital investments such as upgrading the ground water model, implementation of watershed management programs, impoundments, ditch improvements, measuring and metering programs, improvements to sewage treatment, and small water system improvements. (Follingstad, December 18, 2003)

While certain other ISC comments were addressed, the above could not be. Far outside the Scope of Work, analysis was not practical to initiate in Phase II. However, to responsibly choose alternatives, such analysis is required.³ Hence, filling in the data gaps and analyzing alternatives are unmistakable recommendations for the next phase.

Nevertheless, the results to date provide a basic platform upon which to proceed. The subregions benefited greatly from the participation by the Pueblos of Zia and Jemez. The planning benefited greatly from the earlier efforts to manage the watersheds, and the knowledge gained. The process was fortunate to build upon efforts of local existing groups. As Section 14 suggests,

³ The ISC requires that each proposed alternative should include a description of specific and practical means by which the supply of the region may be reconciled with the present and future demands of the region. Alternatives should contain: management, water conservation, water development, and infrastructure development components, plus a water quality management plan. Each alternative should be analyzed on the following bases: social issues and evaluation (public welfare), political issues and evaluation, and institutional evaluation. (ISC 1998)

several water-related projects are underway. In March 2004, the Río Puerco Management Committee awarded grants for watershed restoration projects. A nascent effort is beginning in order to manage water quality issues in the Río Jemez.

Even if the data were improved, the image portrayed can only ever be a snapshot. What will the region look like in 50 years? Many scenario team members, looking back over the past 50 years, could not fathom the depth of changes possible. To some degree, addressing change may be within the control of the subregion, and to some degree, it is not. The ISC requires regional plans to "identify all unresolved interregional conflict (s) at the time of completion." The growth and increased uses at the bottom of the basin and just outside are already affecting the Río Jemez and is thought to be a matter of time before also affecting the Río Puerco. Although the missions of the subregion and the Middle Río Grande are different -- common threads weave back and forth. Listening and considering the values of various water users, given the multitude of jurisdictions and limitations, ways need to be found to equitably manage water.

12.13.2. Next Steps

This subregional plan is meant to assist the water users in the Río Puerco and Río Jemez. To plan for their future, and to participate fully in the regional water planning, further activities are necessary. The following next steps are meant to be recommendations, and by no means exclusive ones. As planning, implementation and monitoring proceed, it will be necessary to adjust and update the recommendations.

The Río Puerco and Río Jemez subregions are not alone in finding out, once planning activities were underway, that the water picture was blurry. In a subsequent subsection, specific data discrepancies are discussed. Surprising gaps were also found. One example was the number of USGS gauges no longer used, creating fewer data points. Crafting a better water picture could, for example, enable the small watersheds to create water budgets, if the need is to balance supply and demand, to fit into a larger one. It could enable the subregion to establish baselines so as to monitor activities.

Workshop participants stressed the importance of implementing the subregional plan, and building on the work and information already compiled. To carry this work forward (both financial and qualified personnel), adequate resources need to be identified. In part to obtain ISC acceptance, the following series is suggested:

The first step would be to refine and supplement the paucity of current information/data, including:

- research users and uses within the subregion (riparian usage; vacation homes, etc.),
- quantify the water uses, reaching agreement as to the baseline information,
- quantify the available supplies specific to the subregions,

- review projections specific to the subregions, and
- quantify the projected demand specific to the subregions, factoring in the demands that will undoubtedly be placed on the resource from outside of the subregions (ie. growth in Rio Rancho and Albuquerque).

The second step would require preparation of the following:

- a realistic water budget that addresses the current shortages as well as projected demands,
- a Drought Contingency Plan,
- a Water Conservation Plan,
- water quality management plans, particularly for stream stretches which exceed pollutant levels,
- a technical analysis of the alternatives described in this plan, including the estimated wet water yield from each, as well as the costs of implementing each alternative,
- establishing benchmarks or measurable outcomes for each of the objectives in this subregional plan and assigning responsibilities for implementation (federal, state, local), and
- connecting the projects (already in the pipeline and those planned) to the plan's goals, describing how each project furthers the stated objectives.

Another step would be to coordinate this subregional plan with the Middle Rio Grande Regional Water Plan.⁴ Although the subregional plan should remain distinct and separate, the future of the subregion is intertwined with the explosive growth in the rest of the region. Coordination would require:

- careful examination of both plans side-by-side to determine potential conflicts as well as areas where both support and reinforce each other,
- meetings and educational forums to encourage representatives and the public from both the regional and subregional planning efforts to meet and consult with each other, and
- tracking implementation efforts of both plans in the future.

Finally, the Steering Committee should be encouraged to reconvene in order to establish a monitoring program consistent with Goal #7. If the planning and implementation process continues and resources are identified, Cuba Soil and Water Conservation District has agreed to continue operating as fiscal agent for the subregion.

⁴ Similarly, the Middle Rio Grande RWP needs to coordinate with the State Water Plan so this could be a case study.

In many ways, the subregions can be compared to the complex topography and culture of Region 6, which includes the Río San José, a tributary to the Río Puerco. Table 12.13-1. summarizes two recommendations which are similar to those contained in this section.

Table 12.13.-1. Two Region 6 Recommendations

<p>* <u>Set up Technical Advisory Boards and Citizen Panels.</u></p> <ul style="list-style-type: none">• Nearly every locality within the region would benefit from continuing research with regard to available water resources, and further development of management practices.• To quantify water savings from specific actions, educate the public, and provide political support for difficult issues, it is recommended that local and tribal governments set up these boards and give them specific mandates to examine these issues and develop proposals.• Since the ISC is requesting that water plans specifically quantify the water saved or acquired resulting from local actions, local and tribal plans would benefit from a technical review of proposals. <p>* <u>Regional Planning Committee.</u></p> <ul style="list-style-type: none">• Related to the recommendation regarding technical advisory boards is a recommendation that local and tribal governments continue to participate in the Steering Committees. This committee could meet on a quarterly or bi-annual basis, and have sub-committees to work through sub-regional issues on a more regular basis.• Planning and research on a regional basis has three main advantages: 1) it can reduce the costs of research and policy development for smaller governmental bodies; 2) it provides a forum for problem solving between communities; and 3) it can provide political leverage for State and Federal assistance, or for making hard policy decisions.• Although this region has many water management issues that might be best resolved on a river-basin level, it also has several overlapping issues that spillover river-basin boundary lines.

12.13.3. An example of analysis and quantification

One concern, expressed in steering committee meetings as well as workshops, has been that the watershed at the higher elevations is so overgrown that not only do the trees evapotranspire the

water, but that the snow never even reaches the ground before melting. An alternative high on everyone's priority is to restore the watershed. In so doing, it may be that the supply will be augmented -- but without more formal data gathering and base-line setting, this will be difficult to assess.

Particularly lacking is data as to the water usages and needs of the watershed itself. In meeting after meeting, concerns were raised about springs drying up, about the number of stems in the forest, and about new users and uses in the watershed and downstream. Suggestions were made to restore the watershed, such as reducing the number of stems by logging or fire, so as to build back the "sponge." In turn, the watershed would be better able to supply the needs of those in its folds. Better information and understanding with respect to water usage will in turn provide better guidance to decision-makers.

Advantage can be taken of work done in other regions. For example, in the Jemez y Sangre Regional Water Plan, one consideration was to restore watersheds, protecting existing water supplies. As can be seen below, it was felt that the higher elevations would benefit most from watershed restoration.⁵

8.2.3 Category I: Recommended Actions to Protect Existing Supplies

1. *Restore watersheds.* Pursue restoration of piñon-juniper, ponderosa pine, and higher elevation vegetative zones (e.g., mixed conifer) to reduce risk of catastrophic fire and severe erosion and subsequent filling of reservoirs with sediment and debris. Restoration of the forests and riparian areas is also recommended to improve overall ecosystem health.

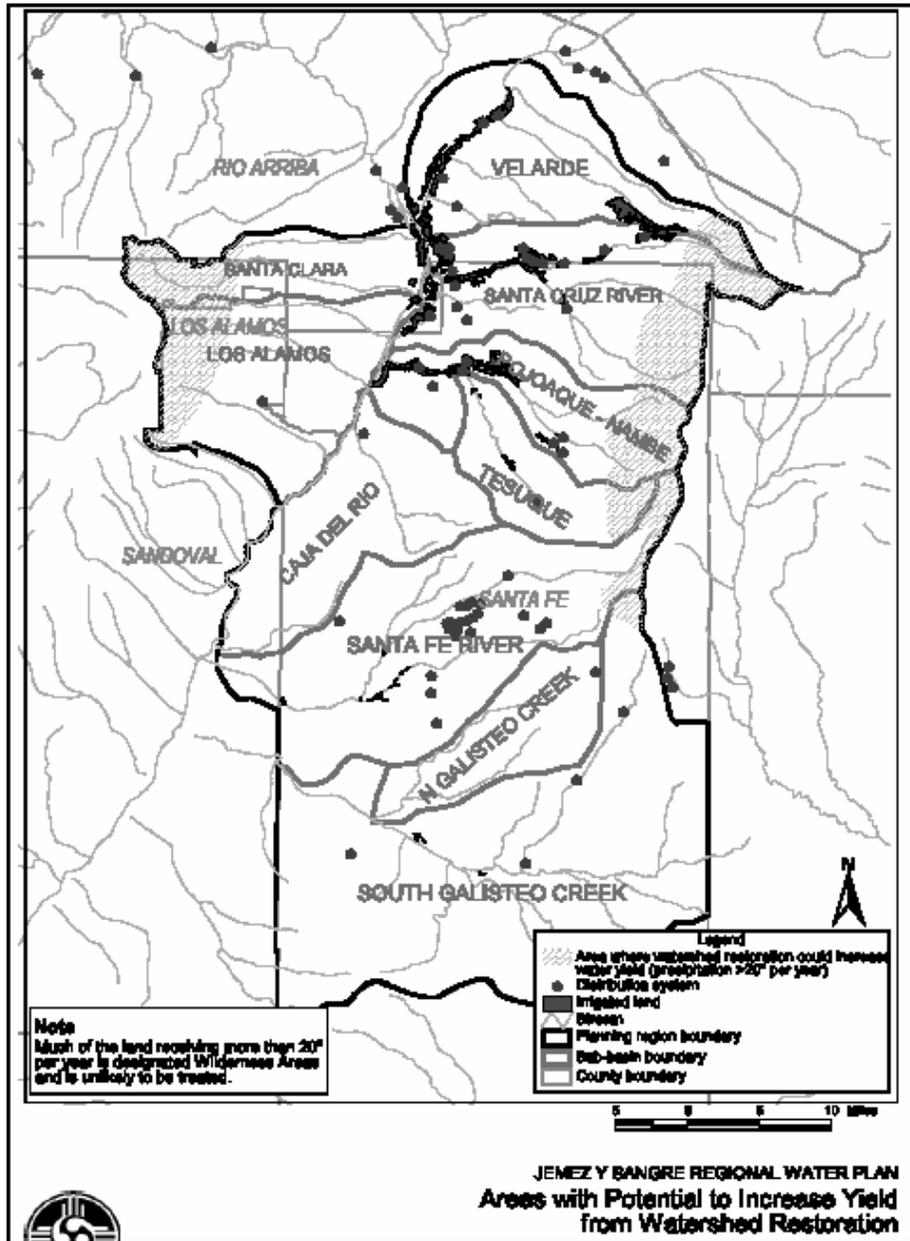
The improvement can be achieved by reducing tree densities in forests and increasing forb and grass cover. This will reduce runoff during high intensity storms and prolong duration of flow in ephemeral and intermittent streams. Overall annual yield of surface flows may increase if the tree canopy density is reduced, allowing more snow to reach ground and ultimately melt and run off in stream systems or recharge aquifers. Potential for improved watershed yield is greatest at higher elevations and least likely in piñon-juniper woodlands. The increase in steady flow in streams will not only provide greater, reliable supply to water diverters, but will also establish healthy riparian areas, which provide for stream bank stability and shade, which help New Mexico meet total maximum daily load standards for turbidity and temperature.

Figure 75 shows [shaded] areas for watershed restoration that would result in increased water yield. These areas are based on (1) vegetative zones that receive more than 20 inches of precipitation annually and (2) dependence on surface water supplies, as shown by the irrigated lands. ... Much of the land receiving more than 20 in/yr of precipitation is in designated Wilderness Areas and unlikely to be treated. Also not shown are the areas that, if restored, would reduce the risk of catastrophic fire and improve the characteristics of storm water runoff. The City of Santa Fe and the U.S. Forest Service have completed an EIS to restore the Santa Fe Watershed. The Hyde Park Water

⁵ Reaching agreement on standard terminology would help as well.

Association has also begun a restoration program and the community of Los Alamos is actively working on forest restoration both in areas that escaped the Cerro Grande Fire in 2000 and in areas that were burned.

Figure 12.13-1 Areas with Potential to Increase Yield from Watershed Restoration (JyS, 2003)



Source: Figure 75 of the Jemez y Sangre Regional Water Plan

The JyS WPC will convene a workshop to develop strategies for creating partnerships and seeking funding for this alternative. To implement a watershed restoration program,

the land holders, most likely including the U.S. Forest Service, must partner with local communities and develop alternatives for restoration that are sensitive to the ecosystem and reduce the risk of a catastrophic fire threat in a timely manner. Working together, partners can seek funding for grant dollars.

Watershed restoration and maintenance was repeatedly raised as a needed activity. Information such as that generated on behalf of the Jemez y Sangre Regional Water Plan, or that expected to come from some of the *Abousleman* projects, should be utilized to the extent possible.

A next step here could be to agree upon the definition of what watershed restoration includes and find ways as to how that will be accomplished. Agreeing on benchmarks and pilot projects would be a start. For instance, concurrence might be reached that a project could be used to demonstrate appreciable increases in spring flows, stream flows and/or local groundwater tables over time. After establishing measurement criteria, various trials could be established.

12.13.4. Interim Ideas

Several actions could be undertaken by the Steering Committees with or without additional funding. These could include:

- establish a calendar of activities to carry out, and then assess the interest of other potential partners to accomplish the list of tasks.
- discuss what measures might need to be drafted to create and adopt a conservation plan and a drought contingency plan⁶
- determine what steps to follow, draft a proposal to potential funders --including the ISC--, and seek ways to implement them.
- form partnerships to broaden the coalition, as well as helping with the tasks of implementation, monitoring and evaluation.
- (co) host an event, such as a workshop on acequias or a water fair to continue to engage the residents.
- teach a class at the local school or ask students to teach at an otherwise not well attended to event.

Several of these begin to address the goals in the plan. If the planning effort is to continue, the communication and education activities will be constant companions.

⁶ Noteworthy is the household water usage. When compared to the per capita usage in urban areas, it provides a platform to consider the notion of sharing conservation. For instance, it may not be equitable to implement a straight 10% conservation target.

12.13.5. Resources

The ISC calls for the regional water plans to include a drought contingency plan and a water conservation plan as it pertains to the water supply for the region. While the subregions did not yet address these, included in the appendices are "10 steps of Drought Planning, a "Sample Water Conservation Ordinance," and an "Agriculture Conservation Plan" (Appendix H of Colfax Regional Water Plan). These provide reliable guidance.

The tasks set out above will require resources. Colfax County Regional Water Plan identifies several sources of funding for various management options, and which can be found in Funding Sources (Attch E4).

12.13.6. Data Discrepancies and Unknowns

As more fully set out in the Epilogue Appendix, there were various data discrepancies which made creating a sound water picture difficult. Along with a list are some recommendations:

1. Population: Several entities indicated that the growth they are experiencing is not reflected in the census numbers. The Jemez Springs Water Association issues a steady stream of new hookups. Yet the census information only shows an increase of 26 people between 1990 and 2000 in Jemez Springs, and another 11 to July 2002. Likewise, in a recent proposal by the Pueblo of Jemez, it was stated that "the village of Jemez Pueblo is home to nearly 3,000 Jemez Pueblo members" (Environmental Assessment of Environmental Quality Incentives Program for Pueblo of Jemez Tribal Trust Lands GPA 2002). The census shows 1,953.

To counter some of the population discrepancies, census records should be checked with other information. For example, a good source of information would be the domestic water associations' records of hookups -- thus including Cañon's and Ponderosa's 600 people. Another source would be to cross check those figures with the Jemez Valley Electric Co-op hook-ups and building permits. Additional sources of data are necessary to provide an accurate picture of water usage today and trends for tomorrow.

Also notable is where the domestic and public water supply use is coming from. It may well be that population increases are not increasing the demand so much as an increase in second homes or once-children coming back to the area as part-time farmers or retirees.

2. Irrigated acreage: While MRCOG's 2000 land-use map shows irrigated agriculture to be 586 acres in the Río Jemez, Shomaker reported that 1,233 acres were irrigated in 1987. Recently, the Pueblo of Jemez stated that 2,100 acres were irrigated, and the 2000 NMOSE reports that 1,655 acres were irrigated, of which 1,585 utilized surface water (Wilson 2003). The *Abousleman* adjudicated water rights for 1,234.25 acres, plus there are an additional 3,535.40 acres reported for Pueblo irrigation. In the Río Puerco, MRCOG's 2000 land-use map shows irrigated agriculture to be 553 acres. Shomaker reported that in 1987, 3,266.50 acres were irrigated. The 2000 NMOSE reports that 2,040 acres were reported as irrigated (Wilson, 2003). The *Abousleman* adjudicated 715.62 to the Nacimiento Ditch, and La Jara claims to irrigate 1,610 acres (*La Jara Geographical Priority Area Application 2002*).

The difference in water usage between 586, 1,585 or 4769.65 acres will clearly affect the water use reported, as well as change the water projections. Using the Future Water Use Projections (MRCOG, 2001), while included, is not recommended at this time. Since uses are expected to change in the future, it is necessary to know how water is being used presently. NRCS records, BIA records and internal acequia records should be cross-checked to counter the discrepancies noted above.

3. Riparian evapotranspiration and open water evaporation: No data for riparian usage or open water evaporation was available for the Río Puerco, although it is clear that such usage exists. Usage is reported in the Río Jemez. By not including a usage may skew the water picture. For example, while agricultural water usage is 10% of the overall usage, it is well over 50% if riparian and open water (47%) and reservoir (34%) evaporation are removed.

To counter that, an extrapolation might be made from other similar basins. Or, an extrapolation made based upon the river miles, together with the vegetation types, slope and altitude.

4. Watershed conservation use: One alternative the subregions want to implement is watershed restoration. In order to determine whether that results in water saved or gained, measurements are needed to begin now.

5. Omitted water use categories: No category exists for cultural and spiritual water usage. One goal of the two watersheds is to "support the cultural and spiritual values of water, and the universal need for and importance of water." An accounting of uses should include them as well.

6. Endangered Species Impact: Unknown at this time as to the impact of the endangered species currently listed will be on watershed restoration. Habitat of the spotted owl has been known to affect logging plans in the Jemez.