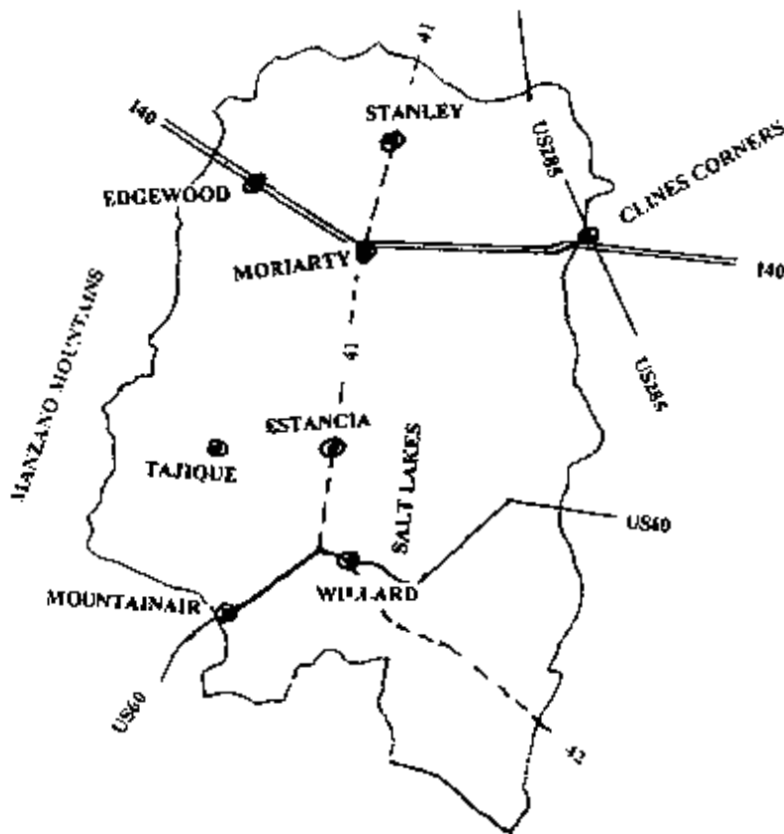


ESTANCIA BASIN
RECOMMENDED REGIONAL
WATER PLAN
(YEAR 2000 TO YEAR 2040)

EXECUTIVE SUMMARY



Estancia Basin Water

Planning Committee

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EXECUTIVE SUMMARY

In the late 1980's and early 1990's residents of the Estancia Basin became increasingly concerned about declining water levels, and their perception that water quality was deteriorating in the Basin. In late 1993 Torrance County established the Estancia Basin Water Planning Committee composed of citizens representing major stakeholders in the Basin to address water resource related concerns. In mid-1995 the Committee was formally established as a tri-county entity (Torrance, Bernalillo and Santa Fe) to address water resource related issues through an integrated Basin-wide approach. With funding from the New Mexico Interstate Stream Commission, basin entities and counties, the Committee began to develop this Water Plan as its Number One Priority.

In 1995, 1996 and 1998 the Committee held a series of public meetings throughout the Basin to gather public input about water related concerns and possible recommended solutions, and to obtain public input on the Phase I Report (past and present water resource related data and future growth, population and use projections). Several concerns, comments and suggestions were offered. The major public concerns and recommendations have been summarized below:

THE TOP PUBLIC CONCERNS/RECOMMENDATIONS

- **EXPORTATION OF WATER – prohibit or severely limit (the Number One Individual Concern)**
- **WATER RIGHTS – protect existing water rights; prevent additional appropriation of more water rights; address State of New Mexico “use it or lose it” policy to make rural conservation work**
- **SUSTAINABLE WATER SUPPLY – protect present lifestyle(s) and ensure future economic health of the Basin**
- **RECHARGE AND OTHER AQUIFERS – what is available in the other aquifers and how does recharge work**
- **BASIN MANAGEMENT (LOCAL CONTROL/LOCAL PROGRAMS) – Single-focused local entity with dedicated funding and basin-wide programs and policies that are developed and executed at the local level**
- **COMPREHENSIVE PROGRAMS–in the following areas:**
 - *Conservation *Education *Information
 - *Monitoring *Metering *Investigations

- **BUREAUCRACY – needs to be local effort and local control**
- **FUNDING – Basin specific Water Resources Trust Fund with dedicated sources of funding controlled at the local level**

Given the concerns and recommendations of Basin residents, the Committee compiled and reviewed known data on water resources in the Basin and developed future economic, population and water use projections (Phase I Report); evaluated and summarized the data; developed conclusions, goals and alternatives; applied the New Mexico Interstate Stream Commission Criteria from the NMISSC Regional Planners Handbook and Template to analyze five basic scenarios; developed the Water Plan; presented the Water Plan for public scrutiny and comment; finalized the Water Plan and presented it to the New Mexico Interstate Stream Commission.

PUBLIC INPUT–THE KEY: Public participation has been the key in the development of this Water Plan. The Committee is composed of citizens appointed by the respective County Commissions in each county and by the major stakeholders in the Estancia Basin. Committee meetings have been advertised in the Basin media, have been open to the public, and have been well attended by the appointed committee members and citizens interested in the effort. Newspaper articles, presentations to local civic groups, public presentations, briefings for the Office of the State Engineer and New Mexico Interstate Stream Commission and all three county commissions, and a series of public input meetings (1995, 1996 and 1998) have been conducted to ensure that the Plan reflects the concerns, needs and public welfare of Basin residents. The Water Plan has received positive press coverage in the Basin media and newspapers and has generally been well received by Basin residents.

DECLINING WATER LEVELS: Data indicates that water levels in the Valley Fill Aquifer (the primary aquifer supplying Basin water needs) are declining with a present annual average loss rate of about 45,000 acre-feet per year. The average loss (depletion) rate is projected to increase over the next 40 years to about 50,000 acre-feet per year based on the population and growth projections in and near the Basin by the Bureau of Business Economic Research. Irrigated agricultural acreage, the largest water user, while fluctuating based on market and climatic conditions is projected to remain generally constant over the next 40 years. The Office of the State Engineer's administrative and mined basin policies are projected as likely to continue. Recent presentations by the Middle Rio Grande Council of Governments to the press and media indicate significantly increased development in the northern portions of the Basin and in the areas adjacent to the northwestern portion of the Basin in the next 50 years. The amount of water supply available in the Valley Fill Aquifer is known with a reasonable degree of certainty. The water supply present in the other aquifers is quite uncertain. It is likely that significant amounts of water exist where there is major faulting and fracturing, but that the bulk of the other aquifers may have much less water than some would like to believe. Even if the other aquifers hold significant amounts of water, many residents of the Basin are not in a position to drill to the

depths required to tap these questionable water supplies. The economic hardship on Basin residents to shift to other sources of water (deeper aquifers or transportation of water over significant distances) will create severe economic hardship for many.

DETERIORATING WATER QUALITY: Deteriorating water quality, particularly in the more heavily developed and developing areas, is a concern. Increased nitrate levels have been observed and other contaminants are suspected, although the New Mexico Environmental Department and the counties have no specific evidence of widespread water quality deterioration. Significant concern about abandoned wells, poorly functioning or broken septic systems, the increasingly heavy concentration of septic systems in some areas of the Basin, and brine (salt water) intrusion into the aquifers exists. In addition, an E-coli incident from surface contamination in the Town of Estancia's water supply due to a break in their water supply system occurred last winter. Concern has been expressed about agricultural contamination (pesticides, fertilizers and animal waste) although no significant documented cases exist at this time.

DEMAND (USE) CONCERNS: The bulk of the Basin's current demand and water supply comes from the Valley Fill Aquifer, about 95 percent. Most of that water is used to support irrigated agriculture. The remainder serves the needs of the towns of Willard, Estancia, Moriarty and Mountainair and various individual domestic well users. About five percent of the Basin's water supply requirements are served by the other aquifers. Much of the new development projected over the next 40 years is located in areas that might be served by the other aquifers, assuming that the water is present and reasonably available. Many people believe that these other aquifers are interconnected with each other and the Valley Fill Aquifer, and may be providing some amount of water to the Valley Fill Aquifer. If true, depletion of water from the other aquifers could worsen the problem facing people and businesses who are dependent on the Valley Fill Aquifer. While portions of the Glorieta Sandstone and Madera Limestone Aquifers may be excellent sources of water, there are indications in some areas that yields are dropping and that well levels are declining in these aquifers as well. It is clear from reading the water level logs of wells over time that the water levels in most wells in the Basin are declining, some by as much as 60 feet in the past 30 years. Thus, a conservative approach to water resource management is required to forestall and lessen hardship on Basin residents.

RECHARGE CONCERNS: The recharge of the Valley Fill Aquifer seems to be averaging about 13,000 acre-feet per year based on demand and depletion data. The water level declines in the various wells in the majority of the Valley Fill area seem to bear this out as well. Recharge to the Basin as a whole appears to be about 37,000 acre-feet. While it is possible that this recharge goes into the Madera, Glorieta and other aquifers, it is also possible that invasive vegetation in the western part of the Basin and other activities may be intercepting much of that recharge. The Plan includes monitoring and investigation programs to begin to see if we can find out what's really happening to the recharge. Further, it has been suggested in the public meetings by old time oil and gas drillers and geologists that the other aquifers may not be as extensive as is presently believed. Again, the suggested programs should help to address these questions and concerns.

AN UNCERTAIN FUTURE: Based on the projections and past and current usage data about 120 years of water supply appears to remain in the Valley Fill Aquifer, the Basin's major source of water. The amount of water in storage in the other aquifers has not been determined with any real accuracy. The State Engineer administers the Basin based on the water in storage in the Valley Fill Aquifer and assumes that the Valley Fill Aquifer serves as the recharge mechanism for the other aquifers. Current water management policies ("mined basin," approved exportation of water, appropriation of new water rights) contribute to the continued depletion of the aquifers and do not assist in moving the Basin towards the goal of a sustainable water supply as required by the New Mexico Interstate Stream Commission. About three to four times more water rights have been recognized by the State Engineer than have been put to use, causing further concern. Under the current block water rights appropriation policies it appears that many more acre-feet of water rights could be appropriated than currently exist, causing even more concern.

REQUIREMENT-SUSTAINABILITY/SELF-SUFFICIENCY: The New Mexico Interstate Stream Commission has directed that regional water planning be based on the water supply available in a specific region. The guidelines published in their Regional Water Planning Handbook and Template emphasize that any regional water plan must be based on self-sufficiency and a sustainable water supply. The Estancia Basin Water Planning Committee has combined this guidance with that provided by the three counties (Santa Fe, Bernalillo and Torrance) and the concerns and recommendations received from Basin residents to guide the development of this Water Plan. It needs to be recognized that there is a significant conflict between the New Mexico Interstate Stream Commission guidance and the mined basin and block water rights appropriation policies that the Office of the State Engineer uses to manage the Estancia Basin.

SCENARIO DEVELOPMENT AND EVALUATION: The Committee developed five scenarios:

- Scenario #1 – "Status Quo" where current practices and policies continue
- Scenario #2 – "1910 Condition" where the Valley Fill Aquifer is returned to 8.1 million acre-feet of water supply in storage
- Scenario #3 – "1960 Condition" where the Valley Fill Aquifer is returned to 7.8 million acre-feet of water supply in storage
- Scenario #4 – "Year 2000 Condition" where the Valley Fill Aquifer is maintained at its present level of water supply in storage
- Scenario #5 – "Year 2040 Condition" where some continued mining is accepted over the next 40 years as the programs envisioned by the Water Plan are developed and executed

Figure E1: SCENARIO EVALUATION – SUMMARY

<u>Scenario</u>	<u>Annual Depletion Reduction Goal</u>	<u>Start-Up Costs (Initial)</u>	<u>Annual Cost</u>	<u>Remarks</u>
#1-Status Quo (Depletion of the aquifers continues, approx 4.5 mil ac-ft in storage-Yr 2040)	0 ac.-ft.	\$0	\$2,500K-\$5,000K	Wells dry up & Aquifer runs out of water in about 120 years. <u>Not Acceptable.</u>
#2-1910 Condition (8.1 mil ac-ft in storage by the Yr 2040)	85,000 ac.-ft.	\$1,500K	\$12,250K	Requires new water from the Rio Grande and a massive infrastructure to return to the 1910 water supply in the aquifer. <u>Not feasible.</u>
#3-1960 Condition (7.8 mil ac-ft in storage by the Yr 2040)	75,000 ac.-ft.	\$1,250K	\$9,625K	Same as Goal #2 except returns to the 1960 water supply level in the aquifer. <u>Not feasible.</u>
#4-Year 2000 (Current level of 6.5 mil ac-ft)	50,000 ac.-ft.	\$1,000K	\$3,615K	Requires an immediate stop to depletion. Holds available water supply at about 6.5 million ac-ft. <u>Not feasible.</u>
#5-Year 2040 (5.2 mil ac-ft remains in storage in the Valley Fill Aquifer by the Yr 2040)	30,000 ac.-ft.	\$920K	\$2,115K	Accepts another 1.3 million ac.-ft. depletion over the next 40 years while programs become operational. Stretches Water supply out 380 years before it runs out. <u>Feasible.</u>

SCENARIO NO. 5 – SELECTED AS THE BASIS FOR THE WATER PLAN!

SUSTAINABILITY/SELF-SUFFICIENCY-NOT ACHIEVABLE IN 40 YEARS

SUSTAINABILITY/SELF-SUFFICIENCY-NOT ACHIEVABLE IN 40 YEARS: The Committee does not believe that the Basin can be brought to a sustainable, self-sufficient water resource posture (available supply and recharge versus projected demand) in the next 40-year period. The Water Plan is based on actions that have worked elsewhere to reduce the aquifer depletion and updated policies which appear prudent. Execution of the Plan should reduce the projected aquifer depletion of 50,000 acre-feet per year to about 20,000 acre-feet per year by the Year 2040. That reduction lengthens the life of the Valley Fill Aquifer from about 120 years to about 380 years. While this Plan does not achieve a sustainable water supply in the next 40 years as stated, the Committee feels this is the least disruptive, most reasonable approach given the unknown and disputed data reference the other aquifers. Executable programs have been developed through a conservative approach based on achieving 50 percent of the reported results of other area water plans. **It is possible that a pro-active locally driven effort may achieve a sustainable water supply in the Basin. The key to success is an unselfish, cooperative commitment by all water users in the Basin aided by local, county, state and federal governmental agencies.**

WATER PLAN PROGRAMS SUMMARY: The programs recommended in the Plan for the next 40 year period will enable us to better educate ourselves on the actual challenges we face and the potential solutions that may lead to a "sustainable, self-sufficient water resource posture" during the next century. The plan is divided into four major program areas with goals, objectives, priorities, time lines and program budget estimates. The four major program areas are summarized in the following chart:

Figure E2: WATER PLAN PROGRAMS – SUMMARY

<u>Program</u>	<u>Annual Depletion Reduction Goal</u>	<u>Start-Up Cost (Initial)</u>	<u>Annual Cost</u>
• Management Program	4,500 ac.-ft.	\$210K	\$355K
• Conservation Program	20,500 ac.-ft.	\$277K	\$1,235K
• Water Development Program	5,000 ac.-ft.	\$297K	\$260K
• Water Quality Program	<u>N/A</u>	<u>\$195K</u>	<u>\$510K</u>
Total	30,000 ac.-ft.	\$979K	\$2,360K

These four major programs were developed with several sub-programs that are intended to be more fully developed and executed by existing local governmental, civic action and private entities. There are ample opportunities for "partnering," and it is hoped that the Estancia Basin will become a "pilot region" where the state and others find out what really works in a largely rural setting. The Plan is intended to be implemented and is phased to facilitate implementation. The objective is to move the Basin towards a sustainable, self-sufficient water resource posture consistent with state guidance and local needs. Essentially, this is a walk before you run approach that will prevent duplicate efforts and minimize waste.

INFRASTRUCTURE: A fifth program area, Infrastructure, listed in the New Mexico Interstate Stream Commission guidance, was evaluated and eliminated because there are no major existing water resource infrastructure items (dams, canals, main system pipelines) that offer any promise for depletion reduction or development of new water supplies within the Basin. The only candidate would be the elimination of the infrastructure which exports water from the Basin; however, it was felt that the concerns raised by exporting water could be addressed best in the Management Program portion of the Water Plan. There are some infrastructure efforts, but they are included in the various program objectives in the four listed program areas.

PRIORITIES: The Estancia Basin Water Plan offers a comprehensive program to address the water resource needs of the Basin and a cohesive strategy to ensure a successful effort. However, how water rights are addressed will determine the overall success or failure of this Plan. Existing water rights must be protected, the appropriation of new water rights stopped with the exportation of water stopped or significantly limited. Without these fundamental changes in policy any effort to conserve water in a largely rural area with significant irrigated agricultural use and large individual water rights holdings will fail.

WATER RIGHTS – THE CRITICAL COMPONENT FOR SUCCESS

WATER PLAN – CRITICAL PRIORITIES

- **Single Focus Management and Adequate Funding**
- **Special Groundwater Management Area(s)**
- **Conservation, Water Resource Information and Education Programs**
- **Water Rights Program**
- **Comprehensive Monitoring, Metering and Investigations Programs**

- **Single Focus Management and Adequate Funding:** The establishment of a single-focus water resource Basin-wide entity with authority, necessary funding and a long-term approach enabling execution of the Plan and its programs year-after-year is absolutely crucial. (Management Programs—Programs No. 2 and No. 3)

- **Special Water Groundwater Management Area(s):** The Basin needs to be designated a Special Groundwater Management Area by all counties and the State of New Mexico to ensure focus, funding and effective coordinated efforts at all levels to address the concerns of water resource sustainability and self-sufficiency. (Management Programs—Program No. 1)

- **Conservation, Water Resource Information and Education Programs:** Aggressive, volunteer citizen driven Conservation, Information and Education Programs are critical to attain overall success. The amount of water pumped must be minimized, and that which is pumped from the aquifers must be used with maximum efficiency and reused again and again when possible. Residents must understand why it is in their best interests to conserve water, and how to best do so, given their individual circumstances. (Management Programs—Program No. 5; and Conservation Programs No. 1 through No. 7)

- **Water Rights Programs:** Crucial to any Conservation Program’s success in a largely rural area is a Water Rights Program(s) that rewards taking water rights out of production and not using existing recognized unused water rights, while protecting the validity and amount of water rights owned by each person or entity in the Basin. Must minimize pumping of groundwater while maximizing reuse. The State policy of “use it or lose it” must be changed. This program is the single most critical element to the success of the Water Plan. (Management Programs—Program No. 7)

- **Comprehensive Monitoring, Metering and Investigations Programs:** Comprehensive monitoring, metering and investigations programs are necessary to find out what is available, what is really being used, how the aquifers really interact and how recharge really works. The comprehensive monitoring program also functions as an “early warning system” in areas where contamination is or may become a concern. (Management Programs—Program No. 4; Conservation Programs—Program No. 4; & Water Development Programs—Program No. 4)

Figure E3: SUMMARY — WATER PLAN PROGRAMS

<u>Programs</u>	<u>Estimated Water Savings Goal</u>	<u>1999 Program Budget</u>	<u>Five-Year Program Budget</u>
<u>Management Programs</u>	<u>4,500 ac-ft</u>	<u>\$210K</u>	<u>\$1,775K</u>
Program No 1—Special Grd Wtr Mgmt Area	(N/A)	(N/A)	(N/A)
Program No 2—Coord, Plning & Oversight	(N/A)	(\$80K)	(\$600K)
Program No 3—Water Trust Fund	(N/A)	(\$80K)	(\$500K)
Program No 4—Comprehensive Monitoring	(N/A)	(\$20K)	(\$500K)
Program No 5—Information and Education	(N/A)	(\$10K)	(\$50K)
Program No 6—Local Codes and Ordinances	(4,500 ac-ft)	(\$20K)	(\$25K)
Program No 7—Geographic Information and	(N/A)	(N/A)	(\$100K)
<u>Conservation Programs</u>	<u>20,500 ac-ft</u>	<u>\$277K</u>	<u>\$6,175K</u>
Program No 1—Audit and Budget	(200 ac-ft)	(\$20K)	(\$100K)
Program No 2—Plumbing Retrofit	(300 ac-ft)	(\$20K)	(\$250K)
Program No 3—Ag Irrigation Efficiency	(5,000 ac-ft)	(\$102K)	(\$325K)
Program No 4—Metering	(5,000 ac-ft)	(\$30K)	(\$500K)
Program No 5—Watering Practices	(500 ac-ft)	(\$5K)	(N/A)
Program No 6—Codes and Ordinances	(N/A)	(N/A)	(N/A)
Program No 7—Water Rights	(9,500 ac-ft)	(\$100K)	(\$5,000K)
<u>Water Development Programs</u>	<u>5,000 ac-ft</u>	<u>\$297K</u>	<u>\$1,300K</u>
Program No 1—Cloud Seeding	(4,000 ac-ft)	(\$120K)	(\$500K)
Program No 2—Terrain & Vegetation Mod	(1,000 ac-ft)	(\$156K)	(\$300K)
Program No 3—Undeclared Area Annex.	(N/A)	(\$11K)	(N/A)
Program No 4—Underground Investigation	(N/A)	(\$10K)	(\$500K)
<u>Water Quality Programs</u>	<u>N/A</u>	<u>\$195K</u>	<u>\$2,550K</u>
Program No 1—Information	(N/A)	(\$10K)	(\$100K)
Program No 2—Monitoring	(N/A)	(N/A)	(N/A)
Program No 3—Aquifer (Well) Protection	(N/A)	(\$10K)	(\$500K)
Program No 4—Septic Tank Remedial	(N/A)	(\$121K)	(\$1,025K)
Program No 5—Sewer System Remedial	(N/A)	(\$20K)	(\$250K)
Program No 6—Septic Tank Effluent	(N/A)	(\$20K)	(\$500K)
Program No 7—Adv Indiv Treatment Sys.	(N/A)	(\$20K)	(\$250K)
Program No 8—Codes and Ordinances	(N/A)	(N/A)	(N/A)
Program No 9—Watershed Management	(N/A)	(\$4K)	(\$25K)

ACTIVITIES-1999: The Year 1999 will be utilized to develop understanding and gain acceptance, support and funding for the Estancia Basin Regional Water Plan, and to develop the programmatic and administrative mechanisms needed to implement the Plan successfully. The programs, projected funding, action items and agencies for the Year 1999 and follow-on efforts and funding for the Year 2000 through the Year 2004 are shown as part of the recommended individual program outlined in the main body of the Water Plan. The Plan is intended to be executed in five-year increments with updates, revisions and reports as necessary. Given the nature of the water resources business it was felt that five years was the best time frame to use for implementation efforts.

FIRST STEP: The Estancia Basin Water Plan is the first step, not the final step towards a practical approach to water resources for the future. The Plan is intended to serve as a guide to start the Basin into the future with respect to sustainable water resources. While the programs and recommendations presented are based on successful programs ongoing elsewhere, it is anticipated that the Plan will be refined, changed and adjusted as we find out what really does and does not work in our Basin. The Plan is not the end, rather it is the beginning of an effort that needs the support and help of all of us to be successful.

LOCAL EFFORT: The intent is to use the existing sovereign entities (counties, municipalities, soil and water conservation districts, governmental agencies, civic organizations and school systems) to develop and conduct the programs under the overall coordination of the Estancia Basin Water Planning Committee, or a similar basin-wide single focus entity. Further, the Plan recommends control, development and execution of the individual programs at the local level to ensure that the Plan addresses the needs and concerns of the residents of the Basin. Clearly the Office of the State Engineer needs to provide overview and guidance from the state level as do the Environmental Department and the Department of Finance and Administration. However, only through local acceptance and action will the Plan achieve its goals.

FUNDING: Maximum use will be made of existing federal and state funded grant programs with the possible imposition of impact fees, tax credits, and/or a slight increase in the gross receipts tax in the Basin to establish a water trust fund. A royalties program on water or water rights sold to third parties and a secure funding source such as a water trust fund that can only be used for water and wastewater related activities under local direction are crucial to ensure program continuity, and ultimately Water Plan success. One of the first follow-on steps should be the appointment of an Estancia Basin Water Planning Committee Sub-Committee to study and develop the funding program and Trust Fund, if applicable. This Sub-Committee should be augmented by individuals with considerable expertise in the funding area, an understanding of state government and the legislative process, and legal expertise.

LOCAL PROGRAMS/LOCAL EFFORT: Outlines of programs which have been developed to serve as suggested guidelines for action entities are presented in the Appendix of the Water Plan; however, the specific development and execution of all programs is left to the various action agents at the local level. The Plan addresses "why" and "what," and suggests some approaches to "how," but leaves the actual "how" to the local action agents (Basin residents and their established forms of government and action). As an example, one of the Basin's Soil and Water Conservation Districts will probably function as the administrative and fiscal agent for the Water Plan and its programs.

THE PAST: There are a lot of myths, misconceptions, fears and false communication ongoing in the water resource world. This Water Plan is a practical, pro-active effort to ensure that future generations will have the opportunity to enjoy the lifestyle(s) that today's residents of the Basin find so appealing. The Plan is not in any way intended as criticism of anyone (individual, entity, local/state/federal governments or corporation). What has happened up to this moment has occurred because all of us and/or our ancestors played a part. The normal and very real tension that has developed between the rural agricultural lifestyle that has been present and formed the basis of much of the Basin's economy for many years, and a more suburban lifestyle that has become particularly prevalent in recent years in parts of the Basin has made it more difficult to deal with water resource concerns. That tension and the resulting perceptions need to be acknowledged and energies channeled towards creating progressive action plans and executing those plans and programs or success will be impossible to achieve. We also believe that there is no point in fighting among ourselves about the past. It happened! We need to concentrate on the future!

THE FUTURE: In looking to the future we need to work together to develop a sustainable self-sufficient water resource posture or all of us and/or those who follow us may ultimately lose out. The United States is replete with areas where residents failed to work together to solve common water resource concerns. Those areas are easily identified today by the ghost towns, decaying infrastructure and empty, deteriorating buildings that are present.

THE WATER PLAN – BOTTOM LINE

THIS WATER PLAN PROVIDES A PATH AND A FOCUS TO GUIDE US DURING THE NEXT FORTY (40) YEARS AND ON INTO THE NEXT CENTURY AS WE MOVE TOWARDS THE LONG-TERM VISION AND GOAL OF WATER RESOURCE SELF-SUFFICIENCY AND SUSTAINABILITY IN THE ESTANCIA BASIN.