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The Acequias of New Mexico and the Public Welfare

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Research Report #008 Spring 1996

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Southwest Hispanic Research Institute

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Final Report

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PREFACE

This report was prepared at the request of the Northern New Mexico Legal Services (NNMLS) as a background paper to better define "public welfare" in water rights transfer cases that adversely impact the acequia communities of New Mexico. Initially, I was retained as an expert witness to testify on behalf of the ditch associations located on the Anton Chico Land Grant. In the midst of preparing my affidavit, the water transfer applicant in this case, the Pecos River Learning Center, withdrew the request. Anticipating that the acequia communities of the region would need to protest other applications in the future, NNMLS commissioned me to draft a full report on the public welfare protections afforded in state statutes based on the social, historical and cultural values perculiar to the acequia way of life. Funds for the project were made possible by grants to NNMLS from the McCune Foundation and the New Mexico Community Foundation.

To compile my report I relied on many published and unpublished sources, each one contributing to the building of a more comprehensive account. I also interviewed acequia and land grant officials in Anton Chico just before the transfer application was withdrawn. Preliminary drafts of the report were reviewed by a number of knowledgable individuals who graciously provided invaluable comments, suggestions, and critiques: F. Lee Brown, Elizabeth Checcio, Malcolm Ebright, Denise Fort, Devon Pena, and David Benavides of NNMLS. In the end, I remain responsible for all aspects of the report. The interpretations, opinions and conclusions are my own and do not necessarily represent the views of the Northern New Mexico Legal Services or any of the reviewers.

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THE ACEQUIAS OF NEW MEXICO AND THE PUBLIC WELFARE

INTRODUCTION

In the arid uplands physiography of northcentral New Mexico, watercourses and their tributaries appear as the single most defining feature critical to all forms of life, biotic and human. For centuries, this region has been a homeland to the aboriginal peoples, the Pueblo Indians, and the descendants of the first European settlers, the *hispano norteamericanos*, both of whom revere water and treasure it as the virtual lifeblood of the community. The upper *Río Grande*, the *Río Chama*, the upper *Río Pecos* and other rivers and creeks in northcentral New Mexico stand out as the dominant natural systems of this southern Rocky Mountain province. Nestled within the canyons and valley floors, tiny villages dot the landscape; their earthen ditches, native engineering works known locally as *acequias* and lateral *sangrías*, gently divert the precious waters to extend life into every tract and pocket of arable bottomland.

Since the early 1960s, however, water markets and the demographic forces behind them, such as population growth, in-migration and land development pressures, have placed these fragile communities at great risk. No one disputes anymore the potential of the emerging water markets, if left unchecked, to sever water from the traditional agricultural uses in the region

and in so doing place rural villages in conditions of significant economic stress. Lesser known, however, are the broader impacts on the regional and state economies that can result if these historic villages literally dry up--economies based, as they are, largely upon the cultural tourism business of the state as well as the high-tech industry companies which often locate in New Mexico attracted to the cultural, scenic, recreational and other enchanting amenities which the rural landscapes of northcentral New Mexico provide.

The prevailing wisdom, according to development advocates, says that "you can't stop progress," even if it means moving water uphill to the highest bidder in order to obtain the so-called "highest values and best uses." This report calls into question whether such a value or policy is sustainable in the long run. Is unbridled growth, aided by the available water market mechanisms, sustainable for current and future generations? Analogous to the blacktopping of prime farmland, are water transfers practicably irreversible once they are set in motion under current water law in New Mexico? Or will the public interest of the state and its people best be served by policies which support rather than supplant regenerative land and water management practices? Perhaps it is time for citizens of the State to consider the extent to which the protection of historic places and traditional resource management institutions is a worthy policy goal in and of itself. It is also time, perhaps, to understand and calculate the indirect economic relationships that the villages share with the state's investments in tourism and strategies to attact outside industries.

The purpose of this report on the acequias of New Mexico and the public welfare is to inform the water policy discourse while there is still a chance for positive and concerted action at the local, regional, and state levels. Policy makers, legislators and water managers need to know and appreciate more the role of

acequia-based communities in the economy and social health of the state: (1) how they conserve and sustain the resource base for the common good; (2) what contributions they make to the cultural tourism trade and to amenities sought after by high-tech industries looking to relocate or expand their operations; (3) why the public interest is served by policies that recognize the cultural and community values of water.

The report was prepared at the request of the Northern New Mexico Legal Services (NNMLS) as a background paper on the definition of "public welfare" in a way that can be practicably applied to water rights transfer cases that might adversely affect acequia and land grant communities in the region. NNMLS recently completed a case of legal representation to a group of client communities on the Anton Chico Land Grant who depend on ditch waters diverted from the upper *Río Pecos*. While the applicant in the upper *Río Pecos* case eventually withdrew the request for the purchase and transfer of acequia waters, NNMLS determined that the water markets in the Santa Fe environs would continue to put pressure on existing water rights owners, especially those with earlier priority dates in the agricultural sector.

In particular, NNMLS requested an exploration of a set of critical issues and timely questions:

(1) The importance of maintaining the resource base, primarily land and water, in the rural economy. Should acequia-based communities be entitled to "reserved rights" in order to assure their own growth and the needs of future generations? Should protection and continuance of these historic irrigation communities matter to the state as a whole?

(2) Explain how the land base and the water resources tie-in as cultural and economic infrastructure, especially in regard to the Anton Chico Land Grant and other similar water-dependent communities in the region. Does the water transfer case on the upper Pecos provide arguments relating to the conservation and

public welfare values recognized in New Mexico water law? Can this case help define the public welfare values of acequia water uses in the region and the state?

(3) Explore how historic preservation designations, zoning, archeological surveys, environmental assessments, and other planning tools can help to increase public awareness about the value of acequia communities and land grants. Have there been precedents where the state has intervened in the market to protect culturally and historically important properties and places?

(4) Does the unique status of acequia associations as political subdivisions of the State of New Mexico permit them an additional window of opportunity to establish local criteria relating to the public welfare statute?

The main body of this report begins with a background analysis of New Mexico water rights law from the perspective of acequia historic and cultural traditions, followed by a case history of the attempted water rights transfer from one of the land grant acequia communities on the upper *Río Pecos*. The case study serves as a practical context for the analysis of issues important to the Anton Chico land grant heirs and to other traditional water users elsewhere in the region where water markets are active now or very likely will emerge in the near future.

NEW MEXICO WATER RIGHTS LAW: WATER AS A MARKET COMMODITY vs. HISTORIC AND CULTURAL USES

Since 1891 and later codified in the Water Codes of 1905 and 1907, water resources in the New Mexico have been allocated according to the doctrine of prior appropriation prevalent in most Western states. In prior appropriation jurisdictions, water is a public commodity subject to state regulation and control based on prior use, "first in time, first in right," and the application of water to beneficial use. Under this arrangement, water users prior to 1907 acquired water rights simply by applying water to beneficial use and continuing such use. Unlike the provisions in states that adhere to the riparian doctrine of water rights, water rights in New Mexico are based entirely on actual prior use and do not run automatically with any property which happens to border a watercourse or waterbody. (1)

The historic and cultural practices in the acequia communities of New Mexico do not fit neatly into either the modern prior appropriation doctrine nor the riparian doctrine. Where they clash perhaps the most with the doctrine of prior appropriation is on the question of severability of water rights from appurtenant lands. (2) Some of the *dichos* (folk sayings) from the region express this relationship poignantly:

> *"La tierra es la madre, y el agua es su sangre."*
> [Earth/land is our mother, and water is her blood.]
> *"Sin agua, la tierra no vale nada."*
> [Without water, the land is of no value.]

Some parts of the region were settled much earlier than the communities located within the Anton Chico Land Grant, the earliest dating back to around 1600. Spanning a period of almost 400 years, custom and tradition generally provided that neighboring acequias were all entitled to water both for domestic

and irrigation purposes, regardless of priority dates or periods of limited water quantities. Even in times of drought, water rotation schedules and other local conventions insured that everyone would have a turn. To sever water rights permanently from any parcel of irrigable land was unimaginable and counter to the initial principles of settlement and the gravity flow irrigation techniques which made agriculture possible in this arid environment.

The traditional practices have persisted within the acequia communities and so have the time-tested technologies and water management institutions. In most villages, the acequia association, made up of three elected ditch commissioners, a *majordomo* (superintendent or "ditch boss") and the *parciantes* (members) themselves, is the only form of local government at the subcounty level. The ditch rules that govern acequia affairs, and much of New Mexico acequia water law, for the most part simply codify the norms already imbedded in custom and tradition. When internal disputes arise, the acequia commission is the final arbiter. While ditch officials and members are aware of the superimposed (Anglo American) version of prior appropriation and the related notion that water rights are moveable and severable from the land, historically *parciantes* have not been forced to choose between the two opposing systems in any legal sense. Until the 1960s, the water markets in New Mexico were not strong or active enough to pose any direct threat to local uses. The business of managing the acequia waters has continued much as before: the local ditch rules based on custom and tradition carried the force of law. (3)

With remarkable consistency, numerous surveys, personal interviews, oral histories, and court affidavits have documented the inseparable link, in the Hispanic and Native American belief systems alike, between water and the land base. In both cultures, water is not a commodity to be sold or traded in the

marketplace, but a source of permanent livelihood, the very essence and source of all life:

> This ball we call the Earth is our Mother. We were born from it by a bag of waters. **That** is what we mean by our spirituality. And all the rain and water coming off the mountain are veins from the womb to restore our life.... Water **is** our life. We came from water; we will return back to dust.... [To call water] a property right to us is very distant thinking. (4)

The reverence for the life sustaining powers of water, as perceived by the traditional water communities of the region, is in stark juxtaposition to the property characteristics of water rights under the doctrine of prior appropriation. These laws allow water to be severed permanently from the land and to be bought and sold in the open marketplace, including the transfer of community water to other applications with supposed "higher and best uses." Acequia officials in the upper Pecos valley and elsewhere in the region are concerned that unchecked water markets, bolstered by the prevailing doctrines, laws, regulations, and the courts, will disturb and perhaps destroy their time-tested systems of land and water management which have sustained local economies and perpetuated the culture for nearly four hundred years.

The water-dependent communities know that the pressures of the water markets will continue and more than likely intensify. They know that they will have to continue asserting their historic claims and rights in other forums yet to come, and with more refined strategies. They now understand clearly that the value differences are fundamentally at odds and cannot be expected to go away--conflict will no doubt continue. (5) For their part, the acequia communities desire to prepare alternative water-based plans, and where necessary, legal arguments with supporting evidence that protect their rights and their livelihoods. In latter sections, this report illustrates some of

the positions and strategies that the Anton Chico land grant heirs and their neighbors from throughout the region may want to consider, particularly in relation to the public welfare statute passed by the the New Mexico State Legislature in 1985.

The traditional ways have guided the acequia water users in their day to day decision-making and ditch operations, irrespective of New Mexico's water laws since the imposition of U.S. jurisdiction. At the same time, there exists a substantial base of supporting principles from the legal system and statutory history which the *parciantes* have never discarded. Firstly, the Kearny Code of 1846, adopted when the New Mexico territory fell into U.S. possession, recognized the existing watercourses and clearly stated they should remain undisturbed in accordance with "*las leyes hasta aquí vigentes*" [the laws heretofore in force]. Secondly, the territorial laws enacted by the Legislative Assembly in 1851 and again in 1852 reiterated and confirmed into law the provisions of the Kearny Code, including the legal force of prexisting ditch "*arreglos*" or rules:

> *Que de las acequias ya establecidas no se embaraze su curso.* [That the course of ditches (*acequias*) already established shall not be disturbed.] (Sec. 8, Rev. Statutes and Laws of the Territory of New Mexico, Art. I, Ch. I, Act of the 20th July, 1851.)
>
> *Que todos los ríos y corrientes de agua en este Territorio, anteriormente conocidos como acequias públicas, son por este decreto establecidos y declarados a ser acequias públicas.* [That all rivers and streams of water in this Territory, formerly known as public ditches (*acequias*), be, and are hearby established and declared to be public ditches (*acequias*).] (Sec. 9, Act of 7th January, 1852.)
>
> *El arreglo de las acequias que ya están trabajadas quedará establecido tal como se hizo y permanace hasta hoy....* [The regulations of ditches (*acequias*) which have been worked, shall remain as they were made and remain up to this day....] (Sec 21, Act of 7th January, 1852.)

Thirdly, numerous State Supreme Court cases and Attorney General opinions have granted the ditch institutions special standing as political subdivisions of the state of New Mexico, a unique status as public entities much like that afforded counties, townships, and school districts. More recently, the federal government has also recognized the acequia associations as public entities. In Public Law 99-662, the Water Resources Development Act of 1986, the U.S. Congress directed the Army Corps of Engineers to "consider the historic Acequia systems ... of the southwestern United States as public entities [allowing] them to enter into agreements and serve as local sponsors of water-related projects..." authorized and funded by Congress.

Interestingly, this federal law supports unabashedly the cultural and historic values that acequia communities themselves have been advocating at the state level:

> The Congress finds that ... these early engineering works have significance in the settlement and development of the western portion of the United States.... [and therefore] declares that the restoration and preservation of the Acequia systems has cultural and historic values to the region.... The Secretary [of the Army] is authorized and directed to undertake, **without regard to economic analysis**, such measures as are necessary to protect and restore the river diversion structures and associated canals attendant to the operations of the community ditch and Acequia systems in New Mexico.... (emphasis added) (6)

Together, these legal designations have supported the acequia water users' belief that somehow acequia water rights are not severable from their ancestral lands. A more recent policy instrument is the addition of water conservation and public welfare criteria to the New Mexico water transfer statute in 1985. The State Engineer is now instructed by statute to endorse and approve permit applications only if the proposed transfers do not impair existing water users "and are not contrary to conservation of water within the state and not detrimental to the

public welfare of the state." (See New Mexico Water Law, Appropriation and Use of Surface Water, 72-5-23). Although this phrase is repeated several times in the statute, the key terms are not defined. Some experts have come to conclude that this omission was intentional to allow the State Engineer latitude on a case by case basis, including the consideration of testimony presented by either side, the applicant and any protestants. The statute provides that potentially affected water users, political subdivisions and agencies of the state and others, have standing to protest proposed changes or transfers, as the Anton Chico Land Grant acequias did in the case study which follows.

THE ACEQUIA COMMUNITIES OF THE ANTON CHICO LAND GRANT vs. THE PECOS RIVER LEARNING CENTER

In the summer of 1987 the Office of the State Engineer notified the Pecos River Learning Center, Inc. (PRLC), based in Santa Fe, that the water supply wells for their international retreat and executive training compound located in adjacent San Miguel County were overdrafted and would have to be shut off unless PRLC acquired more water rights beyond their allocation of six acre feet per year drawn from two domestic wells. As of July 8, just six months into the water year, PRLC had already drawn 13.64 acre feet, more than twice their annual entitlement of 6.0 acre feet.

PRLC was fairly new to the area, having opened its training facility in 1983 for the purpose of assisting corporate clients prepare for and perform competitively in future business environments. The firm owned and operated the Pecos River Ranch and Conference Center, 45 miles outside of Santa Fe, where the training activities took place. Occupying some 1,600 acres nestled in the foothills of the Sangre de Cristo mountain range on the highway to Las Vegas, New Mexico, the Ranch compound included conference rooms and facilities, a restaurant, and hotel accomodations for fifty guests. The two wells on site pumped groundwater from the aquifer hydrologically connected to the *Río Pecos* to supply the needs of the Ranch and its conference participants. Approved water uses included domestic and sanitary purposes with some incidental irrigation of trees, shrubs and lawns adjacent to the facility structures.

By the mid-summer of 1987, the Ranch had exceeded its permit to draw its maximum of 6.0 acre feet of water. As an emergency measure to resolve this predicament, PRLC obtained some 31 additional acre feet through an arrangement for surface water

rights leased from two property owners in the neighboring farm village of San Jose, a few miles south of the PRLC Ranch in San Miguel County. Approximately 24 acre feet were leased from the *Acequia de la Agua Caliente* and 7 acre feet from the *Ancón de Sarasino* ditch, both prototypical community ditches in the Hispanic region of northcentral New Mexico.

The State Engineer's Office approved both leases through a five year period from 1987 through 1991, presumably more than sufficient time for the Pecos River Learning Center to develop a permanent source of water rights. But PRLC waited until three and a half months prior to the lease expiration date of December 31, 1991, before initiating a process to purchase permanent water rights. PRLC decided to move forward with what they thought would be a routine market transaction: to acquire permanent water rights some forty miles downstream from the training compound. Unwittingly, however, they sought to remove or sever water rights from 45.35 acres of irrigated farmland located on the largest, still-functioning community land grant in the Hispanic American heartland, the Town of Anton Chico Land Grant, described in historic documents as the *Nuestra Señora y Sangre de Cristo* [Our Lady and Blood of Christ] grant.

The process of conveyance for this New Mexico land grant was typical of the land grant system under Spanish and Mexican laws. Petitioned in 1822, first by Salvador Tapia and then by Manuel Rivera and a group of thiry-six settlers, the Anton Chico Land Grant straddled the upper *Río Pecos* and gave rise to seven village communities by the turn of the century: *Anton Chico Arriba, Anton Chico Abajo, las Colonias de San José, La Loma, Tecolotito, La Placita de Abajo*, and *Dilia*. Descriptions of the surrounding landscape explain how the natural resources in and around these land grant settlements have nourished and sustained human occupancy for one and three-quarters centuries:

> The Anton Chico Land Grant, located on the high plains near Las Vegas, New Mexico, just south of the Santa Fe Trail, is a 378,587.50 acre tract of land. Much of the the land to the south is rolling grassland, dotted with small lakes that are in reality catch basins for rainwater. To the north, the grant consists of sparsely forested mesa land. Diagonally, from northwest to southeast the Pecos River flows across the grant. Where the flood plain of the the Pecos broadens, land is farmed with water from the irrigation ditches that run along the edges of the plains. (7)

As with other land grant settlements, the Anton Chico petitioners were required by the *alcalde constitutional* and Spanish city planning ordinances, the *Ordenanzas de Descubrimiento, Nueva Población y Pacificación de las Indias* (1573, recompiled in 1681), to establish town sites with *solares* set aside for homesites, *suertes* for irrigated pastures and farmland, and *ejidos* for communal use as livestock grazing and timber harvesting properties. According to the settlement criteria under Spanish laws, for sites to qualify as suitable for human occupation (ordinance 35), they "should be in fertile areas with an abundance of fruits and fields, of good land to plant and harvest, of grasslands to grow livestock, of mountains and forests for wood and building materials for homes and edifices, and of good and plentiful water supply for drinking and irrigation." (8)

The construction of a ditch irrigation system, along with the building of a local church, were among the very first community development projects in Anton Chico and other land grant villages. On May 2, 1822, Governor Facundo Melgares authorized that Manuel Baca, the consititutional justice and *Alcalde* (Mayor) from the jurisdiction of San Miguel del Bado, place the petitioners in possession of the grant. *Alcalde* Manuel Baca stipulated that the petitioners were to comply with and perform, according to law, three conditions: (a) that the place selected should be held in common not only for themselves but for

future settlers; (b) they should equip themselves with firearms and arrows for proper defense of the grant; and (c) the labor of the town, such as the digging of the ditches and other works for the common good, should be performed by each and all settlers. (9) Except for a brief period of time when the area had to be vacated due to Comanche raids, c. 1827-1834, (10) the settlers and their heirs have continuously occupied the villages and have managed the Land Grant commons as a collective property resource.

When the Pecos River Learning Center took the initial steps, in the fall of 1991, toward the purchase of 45.35 acre feet of water rights from a landowner who held water rights on one of the ditches on the land grant, the *Bado de Juan Paiz* Ditch located in *Dilia*, the surrounding communities rose in protest. Compounding the problem, for the applicant, was the fact that the PRLC application for the State Engineers' Office permit was not published until February of 1992, several weeks after the five year lease had expired, leaving the Ranch facilities with only the original 6.0 acre feet of water rights per annum.

From the perspective of the acequia communities, this potential transfer of surface irrigation water rights out of the land grant area would be a first. For over one hundred and sixty years of continuous occupation, water and land uses within the grant had remained whole and intact. At stake were more than the 45.35 acres of farmland that would lie fallow permanently; the entire land grant was threatened. If the transfer was approved and the sale went through, perhaps other water rights owners in need, now or later, would sell out. The pressures would be too great to stop the hemorrhaging likely to ensue. In the folk wisdom of the local culture and spoken in the native dialect, it was said:

> *"Si se cai un grano de maíz del saco, se cai todo."*
> [If one grain of corn drops out of the sack, all of it falls out.]

"Si se rompe el corral y se sale una cabra, se salen todas." [If the corral is broken and one goat slips out, they all escape.]

While 45.35 acres of irrigated acreage is small in and of itself, the parcel owned by Mr. Amadeo Tenorio, a landowner who had moved out of *Dilia* and was residing in nearby Las Vegas, is an integral part of a much larger canal system of important and productive farmland totaling 2,612.82 adjudicated acres. The 45.35 acres in question are located on the *Bado de Juan Paiz* Ditch, itself composed of two segments, with the upper ditch irrigating 693.22 acres and the lower ditch 1,871.31 acres. Additionally, the *Paiz* ditch is an extension of the *Hormigoso* Ditch with 48.29 acres. In distance, this irrigation works system measures approximately 14 miles, all of it of earthen construction, its physical design since the time of settlement.

In opposition to the proposed transfer, area residents vehemently expressed their fears at a public meeting held in April of 1992, a couple of months following publication of the transfer notice: (a) the severing of water rights from ancestral farmlands went against local customs and values; (b) the gravity flow techniques of acequia irrigation require sufficient flow and head from the source in the river; (c) the transfer from one parcel would break the link in the chain, creating a domino effect of other sales, threatening the social fabric of the community. Area newspapers documented the alarm: "Residents fear that the proposed sale would be the first of many water rights transfers away from their communities, forcing an end to subsistence farming and way of life. ... [They] said the seller is offering to sell his share of [the] community's wealth ... and the community itself; ditch officials said the ditch needs Tenorio's allotment to keep water flowing in dry years." (The New Mexican, April 16, 1992 and April 12, 1992)

The concern over volume of water flow was especially worrisome to the downstream acequia users. The Pecos River Learning Center application had been for ground waters. The Tenorio water rights would function as an even swap, i.e., the retirement of surface (irrigation) water rights downstream in order to offset the increased water that the applicant would be permitted to pump upstream. But the acequia users to the south, were not convinced. The extra pumping, they reasoned, would lower the watertable so that the quantity of water in the river would be reduced. The decline in water flow volume would adversely impact the ancient gravity flow ditches--the lower water levels in the river might not be sufficient to "push" the water into and through the community acequias.

Through direct experience with the principles of gravity flow irrigation, acequia users feared that seemingly small amounts in the fluctuations of flow could have disasterous consequences, especially in drought years. Even in years with normal precipitation, the ditches cease to flow sometime in July. In dry years, they said, the alfalfa fields and vegetable gardens shrivel up by the middle of June, an omen for the future if the proposed transfer reduced the surface flow on a permanent basis. One ditch commissioner at the April 1992 meeting put it this way: "Our forefathers came here with picks and shovels and made this [community ditch] ...[But] all of it could go down the drain. This area won't be worth anything without water." (The New Mexican, April 12, 1992)

A short time after the community meeting, the Pecos River Learning Center decided not to pursue the purchase of Mr. Tenorio's water rights, opting instead for renewal of the lease with one of the San Jose farms, as PRLC had arranged before, this time for 23.87 acre feet. The State Engineer approved their lease renewal, and PRLC then withdrew temporarily the water rights transfer application involving Mr. Tenorio's property.

A year and a half later, on October 22, 1993, Mr. Tenorio and PRLC resurrected their efforts toward a water sale for permanent transfer. Mr. Tenorio applied for a permit to change the point of diversion and also the purpose of use from surface to groundwater; the impacted acreage was reduced from 45 to 30 acres. The legal notice stated that there would be a transfer of water rights that had heretofore been "diverted from the Pecos River via the *Bado de Juan Paiz* Community Ditch" and that this transfer would occur "by ceasing the irrigation of 30 acres of land described as *Dilia* ... of the Anton Chico/Preston Beck grant...." If approved, the Pecos River Learning Center would purchase the water rights for the purpose of supplementing "the current use of household and other domestic use, drinking and sanitary purposes" and the watering of the landscape "incidental to commercial enterprise purposes within the Pecos Ranch Partnership...." (Legal Notice released by the Office of the State Engineer, published in the Guadalupe County Communicator, November 25, 1993).

The refiling of the PRLC/Tenorio application only served to prolong the controversy; the reduction in impacted acreage from 45 down to 30 acres did not allay the fears of the acequia water users from *Dilia* and the other Anton Chico Land Grant communities. The protestations continued; the communications gap widened as the ditch officials and other users would not accept any arrangement that would sever water rights from any of the properties within the land grant. They were not opposed to Mr. Tenorio exercising his right to sell, if only he sold the land along with the water rights; they were adamant that the water rights remain in the community, as tradition and custom had always dictated.

To them the idea of severing water from the land was a foreign concept. Water from the land grant communities was not a

property right to be bought and sold in the marketplace; the *mercedes* [land grants], after all, were granted, directly or implied, with access to the life sustaining element in the uplands semi-desert environment, WATER. At the time of settlement, every petitioner had received a *sitio* or *solar de casa* for a homesite and an accompanying *suerte*, a farmland parcel 50 to 200 *varas* wide with its boundaries touching the river banks on the Pecos, an essential aspect of gravity flow irrigation for the original settlers and still the case.

Social scientists who have studied the water-dependent communities in the region would probably agree with the conclusions drawn by the villagers. In a 1987 study of the *Cañones* Valley in Rio Arriba County, for example, John R. Van Ness confirmed the absolute dependency of these early Hispanic settlements on the resource base and their own adaptations to the natural physiography when they introduced gravity flow irrigation and other land tenure modifications very different from that associated with commercial Anglo agriculture:

> The [Anglo] rectangular grid system of defining land units assumes that one unit will be essentially the same as the next; no allowance is made for regional topography, hydrology or climate. Thus, the system was unsuitable for adapting man to the environments of the uplands. The uplands are characterized by great variations in land forms, altitude, climate, and vegetation and valuable natural resources are distributed in a highly irregular fashion.... Therefore, from an ecological perspective the superiority of the Hispanic system of land tenure for a subsistence economy is clear. (11)

Professor Alvar Carlson, a cultural geographer who has conducted field studies in northcentral New Mexico for more than 20 years, reached similar conclusions, particularly in the land grant communities of the region. In his analysis, the irrigated bottomlands and the surrounding common lands on the *mercedes* (land grants) were essential to settlement objectives and the

maintenance of economic relationships in the community. Agreeing with historians and other land grant scholars that site selection for a community grant began with a search for arable bottomlands with access to irrigation waters, Carlson described the inseparability of water, land and other natural resources:

> Bottomland represented but a small fraction of the total grant. The adjacent meadows, *vegas*, and surrounding uplands were designated as communal pastures, *dehesas*, for livestock. Additional communal pasturage was to be found on those grants with mountains, *montes*, covered by forests of piñon, juniper, and ponderosa pine, which could be used also as sources for fuel, building materials, and game. (12)

> Colonization and population growth were accomodated by the development of riverine long-lots in a region characterized by scarcities of irrigation water and irrigable bottomland. This land system provided residents not only with the most advantageous utilization of resources but also with an egalitarian way of life in which they shared the disadvantages of the physical environment. (13)

"Eventually," Carlson concluded, the settlers maximized the use of the land resources and "developed a distinctive human ecology and folk culture," making the upper Rio Grande watershed "one of the most distinctive historic cultural regions in the United States." (14)

The extensive field work research of these experts reveals that the agricultural practices and irrigation methods provided cultural, practical as well as ecological solutions of adaptation to the natural environment. To the land grant heirs and other villagers of the uplands region, water is essential to continued economic subsistence. To sever water rights from the land is tantamount to extinguishing all life forms in the ecosystem. This relationship helps to explain why potential water transfers to uses outside the acequia communities are often protested with such fierce intensity, as illustrated by the Pecos Learning Center case. (15)

Settlement within the Anton Chico Land Grant boundaries was made possible by the presence of the waters on the *Río Pecos*. The land grant boundaries include the north and south banks of the *Río Pecos*, making the river function much like an *acequia madre* [mother ditch] with ability to irrigate a wide physiographic area; diagonally from northwest to southeast, the river flows through the grant for a distance of some fifty miles. From the time of first occupancy to the present, the land base and the availability of water have been essential to survival. At a community meeting in the summer of 1994, while the Pecos River Learning Center was still in pursuit of Mr. Tenorio's water rights, the acequia officials were clear about this symbiotic relationship. If water rights are transfered out of the community, they said, all will be lost,

> *También la merced, porque si no hay vacas, para que se usa la merced?* [Including the land grant, because if we have no cows, what good is the grant?]

When asked how the *merced* commons and the water rights from the *Río Pecos* worked together to support the communities, again their responses were direct. The *merced* is 130,000 acres [the commons portion] and surrounds all the villages for use as a *pasteo de animales* [grazing land for livestock], they said. All of the land grant heirs have access to these lands, primarily for use as summer grazing for *el ganado* [livestock]. But in the wintertime, the livestock are fed bales of hay which are grown on the irrigated private lands of each heir, initially a total of 8,000 acres across the land grant. The ditch water is essential for the production of hay as wintertime feed. Another use of river water occurs during periods of drought when the livestock have to be brought down from the open *pasteo* in order to provide them with drinking water right at the river; or water is taken to them by truck in tanks. "In drought years, you can see the cowboy trucks line up on the river banks; they take turns going

up the hill." Later in the fall, the *rastrojo* (stubble) from corn or other crops serves as supplemental forage out in the irrigated fields; alternately, some families plant a winter cover crop as a source of food for the livestock.

In the minds of the *parciantes*, the land and water together allow them to hold onto their family herds and maintain the local livestock economy:

> The *merced* depends on rainfall, but also on the water rights. The *mercedes* were granted with access to water--it was understood that water rights were included. If the ditch waters are removed, it will destroy the community. The *Americanos* will then come in and buy the land cheap; that's what they are waiting for: to buy the *merced* land; chip away with the water rights being sold off--and slowly erode the base.

Land grant scholars concur with the unique status of the Anton Chico Land Grant. In his study of the land grant legacy in New Mexico Professor Clyde Eastman acknowledged that the vast majority of original land grant acreage passed on into individual, corporate and public ownership, modifying the earlier land use maps which depicted the predominance of land grants in northcentral New Mexico and the middle Rio Grande valley. In his own study Eastman then set out to document the contemporary status of the remaining land grants with commons lands still intact and "large enough to make a significant difference to the community in a cultural or an economic way." (16)

After applying his criteria for selection, Eastman identified only fourteen grants with substantial amounts of remaining commons lands, some used and valued for traditional activities such as grazing and wood cutting but others for their mineral, residential, recreational or other commercial potential. Of the fourteen land grants included in the study, Anton Chico topped the list at 104,319 acres, with all other grants ranging

in size from only 786 to 79,000 acres. Eastman pointed out that "the sheer size" of the Anton Chico Land Grant "provides operational options not feasible on smaller grants, including ability to allow multiple uses of the commons such as livestock grazing, wood cutting, and sand and gravel hauling for personal use." He concluded that

> ... the sociocultural value of grazing for a few livestock [per land grant heir or member] plus free access to woodland should not be underestimated. These tangible benefits, together with the ties to ancestral lands, constitute a significant cultural legacy that is well worth preserving. (17)

The value of the land grant resources documented by Eastman was known to the Anton Chico heirs and their acequia neighbors without them having to read his report. Their unrelenting opposition to the proposed transfer of water rights out of the grant boundaries ultimately resulted in a compromise solution satisfactory to them. In August of 1994, the State Engineer denied the request for the transfer of 30 acre feet, but he approved the continuation of the leasing agreement with the lessor from the community of San Jose, this time for 10 acre feet. The lease would be in effect and valid for two more years; the Pecos River Learning Center would have to apply for a new permit beyond that period should it continue to need additional water for its enterprise activities.

When contacted by an area newspaper, one of the ditch commissioners from the Anton Chico area reiterated the fundamental objections the *parciantes* shared when they protested the water rights sale and transfer. Speaking as President of the Anton Chico Acequia Commission, Mr. Flavio Larranaga stated that he and the others had protested the Tenorio/PRLC application because the acequia water rights in the area have continued intact with the same families since 1836, and that a chain reaction would have likely resulted had the Tenorio sale been

approved by the State Engineer: "... none of our water rights have ever been sold. ... We thought if one person would sell, then everyone would sell. And our little community would cease to exist." Appropriately for the protestants, the newspaper byline which reported the final outcome, read: "State nixes water-rights sale: Move protects Anton Chico." (The New Mexican, August 31, 1994)

Meanwhile, the Pecos River Learning Center presumably continued with other plans it had announced a few months prior to the denial: the ranch and conference center facilities in San Miguel county would be put on the market for sale, with the property sale likely to be consummated by the end of the year to an undisclosed entity with a similar mission. PRLC maintained that the water rights dispute had not influenced the company's decision to sell the 1,600 acre ranch. (Albuquerque Journal, North Edition, April 19, 1994)

Despite this apparent "victory," the acequia water users downstream from the ranch concluded they could not afford to stop pressing forward with their counter initiatives to safeguard their land grant economy. Now more than ever, they sensed the absolute need to retain all historic and existing water rights strictly within the boundaries of the Anton Chico Land Grant. Along with the Northern New Mexico Legal Services attorneys who had represented them in the protest case, they determined that the time had come to assess the full value and implications of the public welfare criteria as an additional argument to block water transfers to other uses outside their communities.

In the upper *Río Pecos* case, the 30-45 acres of land that would have gone fallow might not seem significant to the outside observer, but within the acequia system, custom and tradition require that all water users participate in the upkeep and maintenance of the entire system. These practices are reinforced

by way of simple ditch rules which are based on cooperation, reciprocity and, when necessary, sanctions. The annual cleaning of the ditch, for example, requires all water users to help or to hire a *peon* from the community to take their place. To lose one of the acequia members results in a greater burden on the rest of the association, both in labor and in the more costly repairs that are needed from time to time. Best stated by cultural anthropologist, Sylvia Rogriquez,

> ... each time a parcel loses its water rights, a proportional amount of labor and ditch fees is also lost to the system as a whole, thereby increasing the burden of maintenance upon the remaining *parciantes*. Each member is a link in the chain of community water use and control, and each time a member and his quota of water and labor are lost, the overall chain is weakened. (18)

During the debate over the Tenorio/PRLC proposed transfer, the acequia members from the Anton Chico area were fully cognizant of the deleterious effect a series of transfers would have on their entire system if more and more land would be retired from agriculture. To ascertain the degree and extent of community concern, they undertook a survey during the crucial summer months of 1994 and administered a public opinion questionnaire to a large sample of residents from the land grant area attempting to gauge what the public had to say about the possible transfer of water rights. In total, 371 persons were contacted; only 4 refused to participate. Of the 367 final respondents, the great majority, 263, were water users who irrigated fields similar to that of Mr. Tenorio. When asked a direct question of whether they favored or opposed "transferring water rights from the *Acequia del Bado de Juan Paiz* in *Dilia* to the Pecos River Learning Center," only 9 respondents were in favor while 356 were opposed, and 2 were undecided.

When asked to identify their reasons for or against the transfer, 187 stated their belief that "water should stay with

the land," the most typical of all responses checked. In a related and follow-up question, of all respondents, when asked their opinion about "separating water rights from irrigation land and transferring them to other locations for other uses," only 6 said it was "OK to do" while an overwhelming number, 360, said they would "oppose." (One person was "undecided.")

Interview data gathered for this report shortly after the survey provided more details. One of the local ditch commissioners explained the need for solidarity: "This is the first time that we have faced an application to transfer water out of the area. It is a chain that will be broken. Lose one, and we lose them all.... [Our] heirs down the road will also lose. If someone wants to buy water rights, it is a sign that they are worth holding onto."

Others, especially the elders in the interview group, expressed themselves in the bilingual folk language of the villages:

> *Si vende uno, venden otros--dentro de 10 a 20 años se vende todo.* [If one sells out, so will others--within 10 to 20 years all will be sold]. *Se abre la puerta y se hace todo legal.* [The door will be opened--makes it all legal.] So we have to protest it now. Some sales of land say water runs with the land. *Cualquier siego lo mira--sin agua, la tierra no vale nada--para que se usa si no se puede regar?* [Any blind person can see it--without water, the land is of no value--what can you use land for, if you cannot irrigate it?]

When asked how the proposed transfer of surface water rights in the area to water wells upstream on the *Río Pecos* would affect them directly, the acequia members did not hesitate in identifying a wide range of adverse impacts:

> (a) If more sales followed, especially to accomodate the "spill-over" effects of population growth in Santa Fe, the labor and cash resources for ditch operations and

maintenance would be diminished; some ditches are so long that they require the entire community to turn out for annual cleanings, especially those sections that are dug out by hand shovels. Or when major repairs become necessary, for example backhoe work to repair sections of the ditches or culverts damaged by seasonal floods, the costs have to be distributed across all water users in order to hire contractors and equipment, $3000-$5000 each time or up to $30,000 in the case of repairing the main diversion dam on the river.

(b) Unlike surface water flows intended for irrigation uses, the groundwater withdrawals at the Pecos River Ranch would be constant, even in times of drought when others downstream would bear the impacts resulting from intermittent, reduced flows.

(c) If the acequias were to run dry, all would be lost, from the vegetable gardens for home use to cash income from the livestock which depend on land grant grazing areas in the summer and alfalfa hay bales--watered by the acequias during the growing season--in the winter.

(d) Over time, perhaps a short ten to twenty years away, the dwindled village population would not be sufficient to support a school, a local post office, or any of the community centers.

THE WATER CONSERVATION AND PUBLIC WELFARE STATUTE: POLICY ISSUES AND ACEQUIA PERSPECTIVES

The Pecos River Learning Center applications in 1992 and again in 1993 provide a real case study from which to offer the Anton Chico communities positions they can advance as public welfare testimony should similar applications for water transfers be filed with the Office of the State Engineer in the future. These public welfare arguments are illustrative only and are not meant to provide any conclusive evidence nor legal advice. The next application for a water transfer may be very different from the PRLC case, and therefore may involve a different set of issues that need more detailed analysis and appropriate testimony.

Also, the acequia users should not rely solely on protestant objections which they are entitled to make as protestants to a pending transfer proposal. It is equally important that they take direct steps as a community to assert the value of maintaining their water rights intact, in anticipation of future water transfer applications. Direct community actions in the long run may in fact best express and demonstrate the public welfare values peculiar to the historic acequia communities of New Mexico. Examples of some pro-active strategies and initiatives are provided later in this report. Next, however, the report highlights four public welfare perspectives generated from the upper *Río Pecos* case study and other related water resources research.

Public Values and the Cultural Aspects of Water Resources

The notion that water as a natural resource has a public value and justifies governmental regulation is not new. As documented in legal scholarship, environmental laws and other

government policies already intercede in the market to protect certain plant and animal species that depend on water habitats. Also, a battery of enviromental laws and regulations prohibit water pollution and contamination; other interventions mandate conservation practices; and government programs exist to subsidize some sectors and industries which require large amounts of water for their operations. (19)

Most of these types of market interventions have been designed in support of three basic values: economic, ecologic-environmental and social. Of the three, **economic values** have been the most often asserted, are most easily quantified, and have been the most subsidized, as in the example of hydropower infrastructure to supply huge amounts of energy required to stimulate industrial, municipal, and agri-business expansion. Starting in the 1930s, cost-benefit models have provided decision-makers with the favorable ratios needed to justify large public expenditures for dams, irrigation waterworks, and other river basin development projects in the Western states.

Next in the order of quantification are **ecologic and environmental values**: stringent controls against water pollution, protective measures to safeguard water habitats necessary for plant and wildlife species, and other similar environmental protection programs still growing in scope and enforcement resources, notably the Clean Water Act, the National Environmental Policy Act, the Wild and Scenic Rivers Act, and the Endangered Species Act. At the state level, most Western states, not including New Mexico, by now have enacted statutes requiring a minimum amount of instream flows designed to support ecologic values by keeping water conveyance channels (rivers and streams) wet year round.

Social values in water policy and law are much more diverse, the least understood, and the least quantifiable, if at all.

Various policies and laws that protect social values have been in effect for a long while, but are not usually thought of as expressions of social policy or as market interventions. Water rights allocations awarded by the federal government to federal reservation areas such as national parks and Indian territories probably serve at the best examples of an early type of water policy with broad social purposes. Other social values often are obfuscated because they are actually secondary (but expected) results from projects which espouse other values, for example, hydropower installations which also provide recreational uses incidental of the primary benefits to agri-business, manufacturing industries and municipalities. But perhaps the most difficult social values to assert are precisely those that the Anton Chico Land Grant and acequia communities were attempting to have protected: **historic and cultural values**.

With increasing development pressures and the emergence of new water markets, transfers of water use from agricultural to municipal and industrial uses in New Mexico threaten to dry up the farmlands of the state as has happened elsewhere in the West, most notably in Arizona and Colorado. The greatest pressures will be on the so-called "lower-value uses" such as the subsistence and small scale farming practiced by the majority of acequia water users. From a market efficiency point of view, these water transfers are economically sound in that "they reallocate water from low-value crop production or meadow irrigation to more valuable second home developments, snowmaking, new suburbs, and other uses for which individuals are willing to pay far more for the water than its value for crop production." (20)

The challenge to public policy is to find a better way to account for the historic and cultural values of traditional water uses in the state. Westerners from arid states as a group value water beyond its material worth. Cyclical droughts and water

shortages motivate stakeholders to gain control of whatever supplies can be had in order to secure water for future needs, a conclusion reached by F. Lee Brown and Helen Ingram in numerous surveys and case studies they conducted in the states of Arizona and New Mexico. "This community value of water is particularly strong among many Indians and rural Hispanics" who perceive water as a symbolic resource beyond its material utility. Among other strategies, Brown and Ingram recommend that traditional water users ought to "assert their community values politically through elective and agency processes." (21)

But, how do state water officials and politicians evaluate the importance of community and other intangible values which cannot be accounted for in market efficiency terms? Is it the rightful business of water policy to mitigate impacts that threaten social cohesion, community stability, family support structures, or the ancestral and historic farms of an endangered regional culture? There is no dispute that the rural villages of New Mexico historically have provided a "community safety net" to individuals and families in times of need. The extended family structure and the subsistence-based agriculture many times have buffered economic downturns in the outside economy. The acequia association itself functions as a problem-solving and decision-making institution in the absence of any other public body in the vicinity. For example, the annual cleaning of the community ditch not only marks the beginning of the agricultural season in early spring, it is also an occasion to address other local issues, reconfirming the sense of place, belonging, and the importance of traditions that undergird community life. The irrigation ditch is the dominant self-help institution that supports small scale agriculture while insuring the continuation of local culture.

By any measure, it is clear that the resource base of land and water have knitted the community together enabling it to

provide mutual support and a system of reciprocal welfare assistance. For many generations, especially during and since the Great Depression of the 1930s, the family *ranchos* have served as economic havens for young people who have migrated out to the urban employment centers but, out of necessity, returned when jobs ran out, or when the regional mines closed down. The security of "*el pais*," (the homeland) as they call it, beckons their return from one economic cycle to another. In more modern times, often *el rancho*, mortgage free, is the only place where youth can expect to build affordable housing and somehow earn a livelihood by staying in or returning to the area.

Protection of Endangered Cultures and Keystone Communities

Another challenge to public policy is to strengthen institutions that are already self-reliant. How does the state validate the importance of mutual aid organizations? Other values are better understood because they can be measured or quantified in economic terms, or because they can be regulated. But the cultural values and social aspects of water use are not as tidy. The constituencies are fragmented; they lack a power base and the technical staffs. What is more important? Instream flow to protect wildlife and to provide for urban recreational demands such as fishing and rafting? Acequia uses to preserve sustainable agriculture and a way of life? Or transfer to "higher values uses" for cities and high-tech industries?

These are difficult issues, but as concluded in a recent study of water rights transfers in the Western states, New Mexico represents the most compelling case for recognition of social and water equity values:

> In the nineteenth century, Anglo property concepts were superimposed over the more communal traditions of the

> pueblos and Hispanic irrigation communities. Today New Mexico has a sophisticated water allocation system that basically treats water as a commodity to maximize the efficiency of use of the resource. But the clash of cultures makes northern New Mexico special; there are allocation tensions [here] that do not exist in other states. .... If one wanted to make a case for protecting communities as entities, northern New Mexico would be the example to use. (22)

The immediate obstacle is the legal designation of water as a property commodity which, under New Mexico water laws, can be severed from appurtenant land. However, the public welfare criterion adopted in 1985 provides a starting point to advance the traditional values of water. Other arguments or approaches may not succeed so long as the term "higher value uses" is only understood in economic terms. While it may not be possible to quantify the community value of water, the public welfare provision in the state statute does provide acequia communities with a lever to claim that the preservation of a unique culture and associated historic treasures is a worthy policy goal in and of itself.

Some precedents exist. Numerous times, governments (federal, state and local) have intervened in market arenas to preserve other natural resouces and historic treasures: national forests, wildlife refuge preserves, wetlands and other animal sanctuaries, land trust territories, state open space parks and trails, historic main streets, town plazas and buildings, among others. Acequia communities have a right to argue that there is a long tradition of public sector intervention in water, land and other property markets both to subsidize growth and to support the maintenance of a wide variety of public values.

The state government of New Mexico and its legislative body is no exception to the pattern above. In addition to state activism in the protection of land and other natural resources,

New Mexico laws and statutes have in the past extended to the cultural sphere from time to time. Since statehood in 1912, for example, the state constitution has guaranteed the use and availability of the Spanish language in all aspects of public life, from the schools to the electoral process. In more recent times, the State of New Mexico has enacted statutory procedures to designate cultural properties which can be exempted from the full burden of taxation. Indian arts and crafts products also receive state protection against imitations imported from outside or otherwise non-Indian suppliers. Growth and competing demands from other water users in the region provide a new arena for the state to safeguard indigenous cultures and their water-dependent communities that pre-date statehood and the Anglo-American doctrine of prior appropriation.

Acequia villages and towns should challenge the state to accept the proposition that their communities perpetuate a unique rural culture important to the region and the state as a whole. These rural enclaves are the keystones to a way of life which should be protected from urban spill-over effects, commercial exploitation, and the pressures of economic conversion. Rapid economic and demographic change inevitably will hasten the displacement of an already endangered regional culture and the diversity of the rural landscape which the acequia agroecosystem preserves. As noted in more general terms by conservation biologist Reed Noss:

> The only success stories in real multiple-use conservation are a handful of indigenous peoples who have somehow been able to coexist with their environments for long periods without impoverishing them. Some indigenous cultures have even contributed to the biodiversity of their regions...suggesting that humans have the potential to act as a keystone species in the most positive sense. (23)

Government has reason enough to check the unbridled influences and forces of private, outside capital and the market.

Government should not remain passive, leaving public welfare outcomes to chance alone. Meanwhile, the State Engineer has a duty to evaluate public welfare and apply a broad and contemporary analysis rather than a narrow interpretation.

Acequia Communities and State Economic Development

The case for preserving the old ways of subsistence irrigated agriculture in New Mexico often meets with skepticism, disdain and complete misunderstanding. Some of the competing stakeholders in the water arena perceive the acequia institution as antiquated and an obstacle toward growth and development. To the critics, the acequia methods are wasteful of a scarce resource, producing only marginal economic returns for small scale, subsistence agriculture. But upon close examination, public welfare analysis can demonstrate that the protection of acequia customs and traditions are not particularly at odds with the economic development goals of the state. The acequia communities already form part of the economic development infrastructure of the region in terms of the huge tourism industry which showcases the quaint village architecture, the farmers' markets in Santa Fe and other nearby cities, the lush greenbelts which define the landscapes of the river valleys, and, very importantly, the cultural production reknowned and marketed as "northern New Mexico village arts and crafts:" the *santos*, *retablos*, wood furniture, and other handcarved wood crafts pieces; the folk art, tinworks, jewelry, hand woven rugs, and other New Mexican products marketed worldwide.

These coveted objects cannot be replicated outside of the cultural environment from which they are inextricably connected; in the most fundamental sense, they serve as indigenous items of material culture and expression. Most of the skills and designs for these crafts have been passed on from generation to generation among families who depend on their products for cash

sales and income, but who rely as equally on the land base which has also been part of their inheritance. Waters from the family acequia sustain other aspects of their livelihood, season to season, year to year, for example, to irrigate pastures for small herds of cattle or flocks of sheep, or to irrigate the fruit orchards and family gardens. These rural landscapes and the amenities of the natural environment in the region in turn attract people to the neaby urban centers, particularly when the state successfully lures an outside industry to relocate to or expand its plant operations in New Mexico, "The Land of Enchantment."

In today's policy climate in support of sustainable development, the public welfare test is easily met by the intergenerational economies made possible by the village land base and the gravity flow ditches. In the end, the public preservation of the historic villages in New Mexico actually promotes economic development and the tourism industry rather than hinders it. Social infrastructure and the cultural ecologies of communities are important components of strategic regional planning, right alongside the technical and economic components. In this sense, preservation alternatives which follow established principles of sustainable development are not "non-economic." To sever the life sustaining waters from the villages would be counter-productive to the states' economic emphasis on cultural tourism and the attraction of high-tech and other outside industries to the major cities. (24)

The crafts industries of the state thrive in large part due to the setting in which objects and other handmade goods are produced by local artisans. Without water, these villages literally would dry up, as would the arts and crafts industry vital to the economic development goals of the State of New Mexico. From this perspective, maintenance of village economies, lifestyles, and other "community characteristics" could be

treated as "public goods" (25) worthy of legal or regulatory protections by the state. After all, acequia communities are a low-cost, renewable resource for the state's economy.

Acequia Institutions and Sustainable Resources

The acequia associations of the region constitute the oldest water management institution in New Mexico and probably in the entire United States. They have operated with a few basic rules and procedures based on customs and traditions that have stood the test of time. The historical record indicates that these institutions have managed communal property resources with minimal government assistance or regulation. Government does not have to invest any public funds in creating new forms of democratic participation, maintaining their functions or subsidizing their activities. Acequia institutions have long ago proven their sustainability as resource conservation and water management entities.

But it does behoove government to protect the ecosystem that allows the acequia institution to function properly. The watershed is at the heart of the acequia irrigation system. General principles of watershed planning in most states already advocate the protection of ecosystem values such as aquatic resources and biological diversity. As mentioned elsewhere, the public welfare statute provides an opportunity for New Mexico to protect unique cultural resources which have sustained the local economies over many generations.

At the time of settlement, the watershed formed the basis of the community economy and its sustainability. To sever water resources from the land base would preclude the acequia communities from considering other options for development in the future. As in other arid environments around the globe, water availability made settlement possible to start with--to remove it

from the land base would be the death knell for the community. Arid conditions make for a very fragile ecology; in northern New Mexico, life and the settlement have been maintained through a delicate balance of controls, water conservation rotations, and stewardship of communal resources by a water institution that is democratic, wholly indigenous and a model of resource sustainability with global implications.

As noted by Devon Peña in his studies of Hispano family farms in southern Colorado, the agropastoral villages of the upper *Río Grande* have been widely praised for a century or more as ingenious adaptations to the harsh climates associated with high altitude, arid lands environments. "At the heart of these farm and ranch communities is the watershed commons," with the high mountain peaks providing "water, timber, pasture, medicinal plants, and wildlife for use in common by the villages." (26) According to Peña, these watersheds form the basis of local self-governance and political organization, a unique integration of self-government by hydrographic unit which captured the attention of John Wesley Powell in 1890:

> The people of the Southwest came originally, by way of Mexico, from Spain, where irrigation and the institutions necessary for its control had been developed from high antiquity, and these people well understood that their institutions must be adapted to their industries, and so they organized their settlements as pueblos, or "irrigating municipalities," by which the lands were held in severalty while the tenure of the waters and works were communal or municipal .... [The goal of this irrigation tradition was] to establish local self-government by hydrographic basins. (27)

Contemporary principles of rural environmental planning confirm that local resources should form the basis for guiding economic development and growth that is sustainable and consistent with resource base capacities: the natural, human and cultural elements of development which serve as the building

blocks of any local economy. It is widely acknowledged that conventional approaches to economic development in the rural West, based on mineral extraction, industrial relocation, and capital intensive tourism have met with dismal results. Jobs may be created, but the benefits are inequitably distributed; growth may or may not occur, but poverty and underdevelopment persist, and in the process, the community loses control of the resources it needs for long-term sustainable economic activity. (28) The alternative is development that is integrated with local institutions and which conserves existing cultural resources. However, that possibility is foreclosed once water rights are lost, land use patterns are destroyed, and the acequias and other local institutions atrophy. (29)

Business ventures such as the training compound at the Pecos River Ranch do not extract natural resources in the conventional sense, and in fact, part of their marketing strategy is to lure customers from well outside the region by promoting the environmental resources in the local area, the blue skys, clean air, mountains, rivers, as well as the cultural attractions, such as the adobe architecture, the Indian and Hispanic arts and crafts, and other items associated with "the Santa Fe style." In the short run, tourism projects also produce jobs in the local economy, albeit at the lower end of the salary and wage scale. A single venture at a time might not amount to much harm, but a series of related industries, such as dude ranches, health resorts, world-class golf courses, and second-home developments, together and over time will very likely trigger an irreversible process of water transfers from adjacent acequia communities.

Under a high water transfer scenario, the resource base which made business and tourism attraction possible becomes depleted: the open space pastures would lie fallow and village life itself could possibly wither away. Increased development will drive up property values. More and more water will be

tranferred to fill the spas and swimming pools of the rich as happened already in parts of Santa Fe and Taos counties: condominiums, multifamily dwellings, and commercial subdivisions. Severing water rights from farmland for development purposes will erode the resource base that the acequia communities depend on. The economy of the region is resource dependent; the tourism industry in turn needs the rural and quaint village landscapes to sustain the attractions and amenities that tourists seek. The acequia communities have sound reasons to assert that a sustainable development policy is in the public interest: it promotes cultural tourism while supporting public welfare goals of self reliance, anti-poverty, and grassroots democracy at work.

Severing the most essential component of the resource base, water, does not contribute to the long-term maintenance of the region. Potential water transfers to uses outside the acequia communties often have been protested with fierce intensity when proposed developments seek to disturb the delicate watershed ecosystem balance that acequia villages depend on, as illustrated by the "Condo War" in Taos County during the early 1980s (30). Another much publicized case occured in neighboring Rio Arriba County when District Court Judge Art Encinias denied an application that would have transfered water rights from the Ensenada Ditch to a proposed lake development project. Though reversed later by the New Mexico Court of Appeals, Judge Encinias' ruling continues to be cited as a potent argument for the preservation of acequia-based culture:

> ... the evidence discloses a distinct pattern of distruction of the local culture by development which begins with small, seemingly insignificant steps. I am persuaded that to transfer water rights, devoted for more than a century to agricultural purposes, in order to construct a playground for those who can pay is a poor trade indeed. (Ensenada Land and Water Association vs. Howard Sleeper, 1985)

The State of New Mexico needs to consider the future: sustainability of the fragile economy in an arid lands region suggests that the long-run future of the state depends on how well it manages, protects, and integrates its many resources, natural, cultural and economic, and historic. Experience has shown that other forms of development are more wasteful of these resources, e.g., mining and other extractive industries that inevitably go "bust." To repeat a point raised earlier, the alternative is development that is integrated with local institutions and which conserves existing natural and cultural resources.

As a commodity property [vs. community property], the water markets, oddly, determine the highest and "best uses" of **public** (state) water resources. But this is a short-sighted, if not ironic, policy. No one favors waste anymore. Acequias operate about as close to natural systems as can be found anywhere. There early engineering works support current day thinking about regenerative design technologies that let natural systems do the work. (31) Acequia irrigation systems utilize gravity flow techniques rather than fossil fuel inputs. According to comparative systems research conducted in southern Colorado by Devon Peña, mechanical irrigation systems not only utilize exorbitantly more energy inputs compared with the near zero costs of acequia methods, but they also disrupt trophic and nutrient cycles which elimate habitat niches, impose uniform monocultures on the natural landscapes, and require high inputs of chemical supplements. (32)

For four hundred years, New Mexico's ditch works have been functioning as regenerative water systems, without the necessity of price supports or other government subsidies common in agribusiness welfare. New Mexico water policy should strengthen regenerative practices and oppose water transfers outside of the natural systems where they originate. In northcentral New

Mexico, the pressures work against the ancestral farmlands with their historic and valuable early priority dates. Environmental assessments already consider ecosystemic impacts and the need to protect natural habitats for plant and animal communities. Public welfare considerations suggest that the other native species, cultures or keystone communities should also be worthy of at least the same level of protection.

ACTION STRATEGIES AND LOCAL INITIATIVES

During the 1995 legislative session, New Mexico lawmakers considered over one hundred bills directly concerned with water: water quality, resource inventories, conservation tax credits, public participation, regional water planning, and other issues. Though vetoed by the Governor, the legislature passed a bill calling for an interim committee to review the entire corpus of state water law in light of mounting pressures on the quantity and quality of the state's most constrained resource. (33) The conclusions section of this report presents a number of water law reforms at the state level for possible consideration in 1997 or in other future sessions.

Acequia users, however, should not depend solely on legislative proposals which may or may not be enacted. The communities themselves are in a better position to demonstrate by direct action the cultural and social importance of water to community survival and continuance. To acequia members, the preceding evaluation of the community value of water is self-evident, much more so than it is to those who do not share a common cultural background. Acequia communities continue to be in a position of having to educate other segments of the public, including decision-makers. Often this is done through testimony by community members, expert witness testimony or opinion surveys produced while a legal dispute is pending, methods which tend to be reactive in nature.

This section of the report suggests a number of pro-active action strategies and initiatives which acequia communities should consider as mechanisms for expressing public welfare at the local level, an arena more in their control or where they have direct access to decision-makers. Actions taken prior to a dispute that illustrate the community value of water not only

provide a legacy of support for the community's position in the dispute, but the process of taking these actions becomes an educational one for those participants who are unfamiliar with the importance of acequias.

Acequia communities should not only define the cultural importance of water but they should also take concrete steps to protect their historic water rights from the potential of transfers and sales to uses outside the community. Examples of direct action which can originate at the local level include: the establishment of water rights trusts or banks to purchase or otherwise pool water rights in order to "keep them in the community;" the preparation of resource inventories and other documents to seek state and perhaps national designation of the villages and their communal properties as historic and cultural preservation sites; and the preparation of stream corridor and greenway conservation plans for adoption by county and state agencies. Below are a few in-depth illustrations, including some that can apply directly to the *Rio Pecos* case study.

The Historic and Cultural Preservation Strategy

The Pecos River Learning Center case study illustrates the potential of historic and cultural preservation strategies to help keep water rights within the community. PRLC's efforts had threatened the traditional water rights not just from any acequia on any stream but those on one of the most significant and still-functioning community land grants in the region. As has been the practice for many generations, the Anton Chico Land Grant Board regulates land use and land tenure and accounts for the single most important reason for the maintenance of a land based culture on that section of the upper Pecos River. The Land Grant Board of Directors is elected every two years by the heirs with representatives from each of the acequia communities. Membership in the grant is traced by descent from the original land grantees and by inheritance with each of the initial

grantees permitted a plot of land for a house and a parcel of irrigated land along the river. In addition, members are permitted to apply for grazing leases on common lands and for 40-acre tracts, called *quarentos*, to be used for dryland farming, grazing, or other uses. (34)

In 1985 initiatives were started to designate the area as a historic district in order to protect "one of best preserved land grant communities in New Mexico" representating 19th century farming and ranching in the region and regional folk architectural types. (35) The historic designation was eventually approved and provides an important spatial boundary that locates a specific human settlement deserving of protection from external pressures of change, a lever somewhat akin to environmental safeguards to protect the habitats of endangered species. The land grant is a unique cultural treasure, and its placement on the national historic register will help to validate that claim. Among other significant features noted in the historic nominations report, the villages within the grant, current and abandoned, serve as important examples of "early to late nineteenth century Hispanic frontier community organization, casa-corral architecture, historic archeological resources, and regional settlement patterns within New Mexico." (36)

Not all acequia communities retained their original land grant status or communal land properties, but the important point is that every rural village in the region has a link to the past which shapes its present day identity and character. Protection of these sites, landscapes or historic properties can help to convince water officials of the need to sustain the livelihoods of people who make up a community. In many instances, historic and cultural preservation projects, when completed, actually improve the economic value of a town and the surrounding region. The drive to achieve historic designation, however, must begin at the local level.

The Political Subdivision Strategy

The 1985 state statute on water conservation and public welfare does not provide concrete guidance in terms of defining the "public welfare." The fact that the State Engineer has very little to go on has already been mentioned. But, on the other hand, the vagueness in the law presents the acequia community itself with an opportunity to express "public welfare" on its own terms.

With this as a take-off point, the acequia communities, by way of their ditch irrigation organizations, hold a special and unique status as public entities. Most often, they are the only form of local government at the subcounty level; in this sense, they can assert their role as political subdivisions of the state of New Mexico and protest water rights transfers not only as parties who will be impaired "substantially and specifically" but also as public instrumentalities of the state that "have standing to file objections or protests" as stipulated in the statute.

In these types of cases, acequia associations should be aware of and exercise their status as public entities and that this status gives them, **if they protest**, automatic standing on public welfare grounds. Acequia leaders who object to proposed transfers would be well-advised to submit a formal protest (by the deadline) in the name of the acequia itself so as to take advantage of the special status to comment on public welfare. In addition, protestant comments should be obtained from other public entities concerned with water and natural resources conservation, especially county level governments.

In the specific case of the Pecos River Learning Center application, the Guadalupe County Board of Commissioners went on record against the transfer of water rights out of the area. The community of *Dilia* and most of the Anton Chico Land Grant are located within Guadalupe County. In a resolution passed on July

15, 1994, the County Board of Commissioners offered to assist the Office of the State Engineer in determining whether water rights transfers out of the local communities are detrimental to the public welfare. Their own conclusions were clear: the transfers are detrimental; the irrigation systems have historical and cultural value; they form the economic base of the community; transfers away from the county threaten the resources that provide economic and non-economic benefits to the public. (37)

The unique public entity status provides acequia associations the legal standing to express and define public welfare values from the community point of view, especially when it comes to the importance of water and the irrigation system. In water related matters acequia associations have long since been granted public standing equal to that of cities, counties and school districts. This special domain was recognized by the State Supreme in a 1914 case when the court considered and described the history and nature of the ditches: the arid conditions in the region required settlers to assure the availability of water to irrigate crops at the needed times (Snow vs. Abalos). In an earlier case in 1905, Candelaria vs. Vallejos, the court determined the public status of acequia associations as similar in class to other public, involuntary quasi corporations such as counties, townships and school districts. Later in 1912 at the time of statehood, the state constitution included community ditches in the list of governmental units that would be exempt from ad valorem taxation. (38)

Rural Conservation Programs

Rural conservation programs offer more comprehensive strategies with many concrete action steps that acequia communities can examine. In 1989 the National Trust for Historic Preservation (NTHP) published a guide which documents numerous rural conservation programs from twenty-eight different

communities throughout America that took action to fashion plans and programs that enhanced the environment **and** the economic values of their towns and regions. (39) The guide featured many case studies where communities were concerned with issues also important in the uplands region of northcentral New Mexico: protection of cultural landscapes; farmland preservation; restoration of historic sites and properties; the protection of irreplaceable public open spaces, river corridors and greenways.

The space limitiation in this report does not allow a complete recounting of the many rural conservations programs documented in the NTHP guide. Instead, below are a sample of techniques, methods, and strategies that perhaps can be replicated by the acequia communities of New Mexico. In each case, findings from the guide (in *italics*) are supplemented with commentaries on how acequia communities can design action strategies and other initiatives appropriate to the cultural and legal environment of New Mexico.

(1) ***Rural Concerns and Land Use***

It is very important to identify community values and concerns as a way to begin a rural conservation program. For example, if rural people feel strongly about protecting their riparian corridors, they should attempt to obtain local zoning and subdivision controls, easements, or other techniques that will restrict inappropriate uses on lands adjacent to watercourses. (NTHP Guide, pp. 7 and 22)

While acequia communities hold the status of political subdivisions, they do not have powers to regulate land use. In this regard it behooves the unincoporated acequia communities to work with county governments toward the adoption of a wide variety of supporting planning tools, for example, amending subdivision regulations as was done in Rio Arriba County, New Mexico, to control development when it threatens irrigated

farmland and water quality. In cases where subdivisions of farmlands are approved for conversion to other uses, perhaps rural counties could impose a development impact fee in order to replace the lost acreages by acquiring equivalent farmland elsewhere in the county, thus internalizing the impact. Acequia communities themselves should participate in efforts to protect farmland from conversion to other uses or abandonment. Their continued participation in the ongoing regional water planning process is critical.

(2) ***Historic Sites and Places***

Every community has a wealth of historic and property resources that give the community its identity: farmsteads, mills, schoolhouses, covered bridges, rural churches, general stores, trails used by pioneers and early settlers, etc. Protecting these buildings and landscapes conserves tangible and visible links with a community's past; the preservation of places that are important parts of a community identity also helps to retain historical information about how an area was settled, developed, or how it declined. (NTHP Guide, pp. 36-38)

The important point here is that each community has to identify which features or characteristics best define the community as a place or represent its very identity, for example, the land grant and the acequia. What is valued locally? Links with the past can help to galvanize support when a community's future is threatened. In the case of Anton Chico, the water users are not simply trying to retain resources for the sake of nostalgia--water resources are the fundamental life support systems on the land grant that make "community" possible today and for their heirs. Their agropastoral economies depend on the integration of water-dependent farmlands and adjacent open space in the land grant commons for livestock raising. Local residents took an important first step when they supported efforts to designate the area as a historic district.

(3) ***Cultural Resources***

Folklife traditions are as important to protect as more tangible reminders of the past: folk tales, arts, and crafts. Culturally distinct rural areas usually have had unique ways of building, laying out farms, and creating furnishings and foods; the varied legacy of traditional cultural heritage is in danger of extinction in all regions of the country. (NTHP Guide, p. 39)

Again, the acequia communities of New Mexico are not limited to protecting museum artifacts or other folklife traditions lost to history. Items of material culture continue to be produced from everyday life experiences, along with the revival of older forms and artifacts of culture, an economic asset. The cultural landscape is part and parcel of the infrustructure that supports the tourism trade in New Mexico--and, it is renewable. In weaving, for example, the Rio Grande and Chimayo traditional designs survive; but artistic experimentation, especially by the newer generation of weavers, creates new mixtures, blending the old with the new. These new forms would not be possible without the element of contemporary community life and the ability to transfer knowledge and techniques into succeeding generations.

(4) ***Inventory of Natural Area Resources***

One of the initial tasks of organizing a rural conservation program is determining a geographic area of concern, e.g., the watershed. An environmental inventory usually consists of a set of maps showing the location of resources and problem areas and a companion report describing the resources, how they were identified, why they are important, what threats they face, and how they can be protected. Drawings, photos, lists, statistics, etc., should be included in the report. Using the inventory, planning boards can steer development away from natural areas such as wetlands, prime farmland, erodible slopes, scenic vistas, and historic sites. (NTHP Guide, p. 86)

The resource base is essential to survival of the acequia communities, yet very little documentation exists as to the natural areas which the community believes are the most crucial and why. It may not be enough for acequia officials to **say** that the natural environment is important; with some technical assistance from university and state agency personnel, they need to identify, inventory and map the specific resources in their own areas that they believe should be protected. As a second step, they need to play an active and visible role in the implementation stages in partnerships with county government, not-for-profit organizations and preservation foundations to steer development away from valued natural areas.

(5) ***Critical Area Zoning***

Overlay zoning has been used to protect critical resources found throughout the community regardless of zoning, such as steep hillsides, a scenic river, historic districts, and other sensitive sites that the community values and believes should be protected. If any of these sites are privately owned, the local zoning board can develop voluntary, nonbinding agreements to honor the owners for having maintained the property in original condition, for example, "century farms" programs which recognize families who have owned and farmed the same property for a hundred years or more and agree to continue doing so. (NTHP Guide, pp. 143-44 & 174-75)

Sensitive natural areas may require strong enforcement tools such as zoning. To protect the area most critical to acequia family farmers, the Costilla County Board of Commissioners in the San Luis Valley of Colorado adopted a resolution during the summer of 1995 to safeguard watersheds above 8,000 feet elevations against adverse land use impacts of development which might threaten the forest canopies in the county such as those in the *Sierra* Mountain Tract, the originating water source for the

San Luis ditches in the bottomlands. (40) Not all traditional practices can be mandated by county zoning or other government regulations. It is equally important that acequia users demonstrate their own commitment to rural conservation goals by proposing and then participing in voluntary programs. A "centennial farms" program, involving acequia lands and families, is already in effect and successful in the San Luis Valley. (41)

(6) ***River Corridors and Greenways***

Landowners concerned with recreational impact on or near their agricultural lands can develop recreation management plans in conjunction with state agencies dedicating land along the river, by way of voluntary conservation easements, to serve as public access points. In return the state agrees to maintain the river corridor and enforce any pertinent regulations to protect water quality and the environment. With some outside expertise from the Trust for Public Lands, county commissioners can establish land trust foundations to preserve long stretches of greenways or "linear parks" which include the protection of natural areas. (NTHP Guide, pp. 180-82 & 241)

These techniques suggest a river and acequia corridor project for the upper *Río Pecos* and other acequia communities as a tool and process to determine public values. Scientific field inventories have established that acequia watercourses function as biological and wildlife corridors; they preserve the local biodiversity and greenbelt habitats which in turn nourish native species of willows, cottonwoods, *capulín* (chokecherry) and *cirguela* (native plum) tree shrubs, and the wildlife. Earthen ditches leak water into the land around them maintaining trees and shrubs with extensive root systems and other perennial vegetation, meanwhile creating wildlife habitats. (42) Corridor projects, perhaps under state sponsorship, can help educate the public as to the ecologic values of acequia irrigation systems and practices.

(7) ***Land Trusts and Revolving Funds***

A community land trust acquires property either through direct purchase or receives it as a gift with the intention of holding the property in perpetuity; it can then lease the land to individuals or organizations who will utilize the land in a desirable way for the purposes intended, for example, to keep agricultural land under production. Revolving funds are a companion mechanism which can help community land trusts and other organizations purchase a desired and threatened property or critical resource area. The revolving fund manager can then resell the property to a sympathetic buyer who agrees to develop or restore the property in accordance with any stipulated conservation easements or other deed restrictions. Proceeds from the sale can then be "revolved" in order to purchase additional properties for resale once again. (NTHP Guide, p. 198)

Acequia communities which are not attached to a land grant can form community land trusts as mechanisms to acquire irrigated farmland when local owners opt to sell. This approach retains the water rights on the original parcel of land for resale. Land grants presumably can already acquire new properties under their existing charters. With respect to water pooling, acequia associations under state law can function as both a community water trust and a revolving fund manager, but most acequia officials are unaware of these techniques or their full potential. Associations can own water rights, pool them, lease them, and sell them. Acequia associations should study the land trust and land revolving fund models and apply the concepts to water rights banking. An internal program to retain water rights in the community will serve as direct evidence of the importance of water to the land base when acequia users protest applications that seek to transfer water rights to outside uses or destinations.

In addition, water trusts or banks can be designed to retain local control over agricultural lands temporarily or permanently out-of-service. The Middle Rio Grande Conservancy District, for example, plans to establish a Water Bank which will purchase water rights when irrigated farmland is subdivided into other uses or when farmers opt not to forfeit water rights during temporary periods of non-use and instead decide to lease them to the Water Bank. (43) In like manner, acequia associations can pool surplus water rights in the community, avoiding forfeiture, and then lease them back out to open new irrigated lands or reinstate water rights on farmlands which perhaps have lost them. Recent state legislation exempts water conservation programs from the forfeiture provisions of the Surface Water Code, an additional instrument that will make water trusts even more feasible in the future.

CONCLUSIONS AND RECOMMENDATIONS

The action strategies and initiatives above are presented as suggestions for further study and should be taken as preliminary ideas that can be modified to suit local circumstances. Some of them may not be feasible for all acequia communities. Also, a number of them cannot be accomplished in New Mexico without enabling legislation at the state level or new land use and subdivision regulations enacted by county governments. Further research and analysis will be needed to identify specific recommendations on a program by program basis.

For now, however, this report closes with three state initiatives that can begin a review of possible legislative proposals, water law reforms, and other changes in statutes--none of them easy to accomplish. The 1985 public welfare statute cannot be expected to protect the interests of acequia communities by itself or in all instances. In addition to protections provided by the public welfare statute, more radical and sweeping policy changes are needed: water law reforms allowing riparian corridors; state and county legislative initiatives to encourage rural water conservation programs; and the enactment of an acequia community preservation law. A very brief sketch of each of these possibilities follows.

Water Law Reform: Riparian Corridors

State water law should be amended to allow the designation of "regional water resources conservation and historic zones." The purpose of this law would be to recognize the historic importance of river corridors in areas of the state which have sustained human settlements founded on principles of natural cycles and regenerative agriculture. Under such a law, stretches of rivers anywhere in New Mexico which meet this basic criteria would be declared state historic treasures. With respect to

water rights use, only historic uses would be permitted in these zones, that is, domestic, livestock, wildlife and agricultural. Transfers to other uses or to areas outside the river corridor zone would not be approved by the State Engineer. Lastly, in these zones only, water would run with the land in perpetuity and could not be severed or transfered to other uses or to other locations. This provision would not prevent water rights owners from selling altogether; they would be able to sell the land along with the water rights.

The preservation of historic riparian corridors can be compared to the state statute which protects the middle Rio Grande *bosque* and its unique strand of cottonwoods in the Albuquerque metropolitan area. Why not look at other unique natural watercourses and corridors that require special designation? The idea is to designate conditions, or special areas at the micro watershed level which are ecologically **and** culturally fragile, under which water cannot be severed from the land. Acequia community micro watersheds, it can be argued, are as much a as part of the state's heritage as are bosque cottonwoods.

Rural Water Conservation Programs

New laws and regulations may also be needed allowing county governments and acequia associations to develop rural water conservation programs such as critical areas overlay zones and to provide funding for farmland preservation. In addition, New Mexico does not yet have a minimum instream flow statute as exists in other states, despite the annual fluctuations in percipitation and stream flows. A minimum instream flow statute could be enacted to insure that transfer applications that propose to retire surface irrigation water from community ditches in order to pump an equivalent amount of ground water would be denied in streams that are subject to intermitent or no flows in years of drought, as is the case on the Pecos River.

The objective here would be to permit the natural hydrologic cycle to determine stream flow and to prohibit any interventions that would exacerbate the problem, so long as acequia users do not forego their priority rights. If enacted, an instream flow statute could assign junior rights to instream flow water based on the date of the statute. The proposed statute should state clearly that water cannot be severed if adjacent to watercourses, including community ditches, that require minimum flows to support scenic greenbelts, agricultural fields, plant and animal habitats, and other life forms that depend on a consistent supply of water. The pumping of groundwater for upstream development could be taxed in order to create a public fund for the purchase of other water rights needed to replenish flows into the river. As an additional protection, watershed sources at the *sierra* peaks should be designated as critical area zones, prohibiting adverse impacts from development or other land use projects such as timber havesting and road clearings which reduce the forest canopy needed to retain winter snow.

Acequia Community Preservation Act

The state legislature should also consider adopting a specific measure that would ensure the continuation of acequia communities as essential to the state's economy and cultural diversity. An "Acequia Community Preservation Act of 1997" should be adopted that would establish historic and cultural zones that protect acequia communities from water rights transfers out of the community. These communities pre-date Anglo settlement and statehood by hundreds of years. In historical perspective, the state water code (1905) is a relatively new invention, enacted some three hundred years after original settlement of the region by the Spanish crown. Similar to the proposed reforms in item one above, this statute would prohibit water rights transfers out of the water-dependent communities. The difference here is that this statute would not require a wholesale change from a prior appropriation to a hybrid riparian

state. Instead, existing New Mexico water laws would be amended to prohibit water rights transfers outside of an acequia community but still allow them within the acequia community itself.

The intent of the legislation in this case would be to insulate the acequia communities from the pressures of the water markets which are certain to intensify. If adopted, for the first time state water law would explicitly recognize social, historic and cultural values in the allocation of water rights and water use, protecting the rights of historic and traditional water users to maintain and sustain their way of life. As an implementation tool, the Acequia Community Preservation Act could authorize a compensatory program, perhaps through severance tax bonds, to create a public tax fund for the purchase of water rights within any of the designated zones. Landowners would be compensated for any water rights they voluntarily choose to transfer to the local acequia association or its water trust.

A Final Note

The watercourse has always been a vital part of the acequia community ecosystem. New Mexico policymakers need to look for ways to define, map, and protect the boundaries of the watercourse greenbelt, to include not just the river and adjacent *bosques*, but also the acequias traversing the foothills, the vegetated ditch banks, and the irrigated bottomlands. The watercourse is the most distinguishing feature of the typical acequia community and its relationship to the surrounding open and rural landscape: it shapes the edges of the varied terrain; it defines the natural and human-made boundaries; its sets the limits to growth; it allocates space for community development and the built environment; and it nourishes the plant and animal ecologic life within the corridor.

In the end, the most compelling argument that can be made is that the acequia as an institution perpetuates continuity, a sense of place, and a system of direct democracy which provides for communal management and stewardship of a life sustaining resource. In turn the acequia community as a whole provides for spatial balance in the region; these keystone villages form a network of settlements that depend on and therefore protect the watershed resource base for other stakeholders in the region, including the larger cities, the high-tech industries, and the vital tourism economy of the state. The ribbon-like greenways and acequia fields in the state act like a wetland system: the valley bottomlands and acequia watercourses are sponges which retain water, control soil erosion, recharge the aquifers, nurture the cottonwood forests and other native vegetation, shelter the wildlife and fish habitats by maintaining instream flows, all the while preserving farmlands, open space and historic cultures.

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39. See Samuel N. Stokes, et. al., for the National Trust for Historic Preservation, Saving America's Countryside: A Guide to Rural Conservation. Baltimore: Johns Hopkins University Press, 1989.

40. See draft resolution published in La Sierra newspaper, San Luis, Colorado, June 23, 1995

41. Devon Peña, op. cit., "Anatomy of the Disappeared," p. 42.

42. See Devon Peña, op. cit., "Anatomy of the Disappeared," p. 32

43. See "Conservancy Plans Water Bank," Dialogue, New Mexico Water Dialogue, Vol. 4, No. 2, October 1995, p. 23.