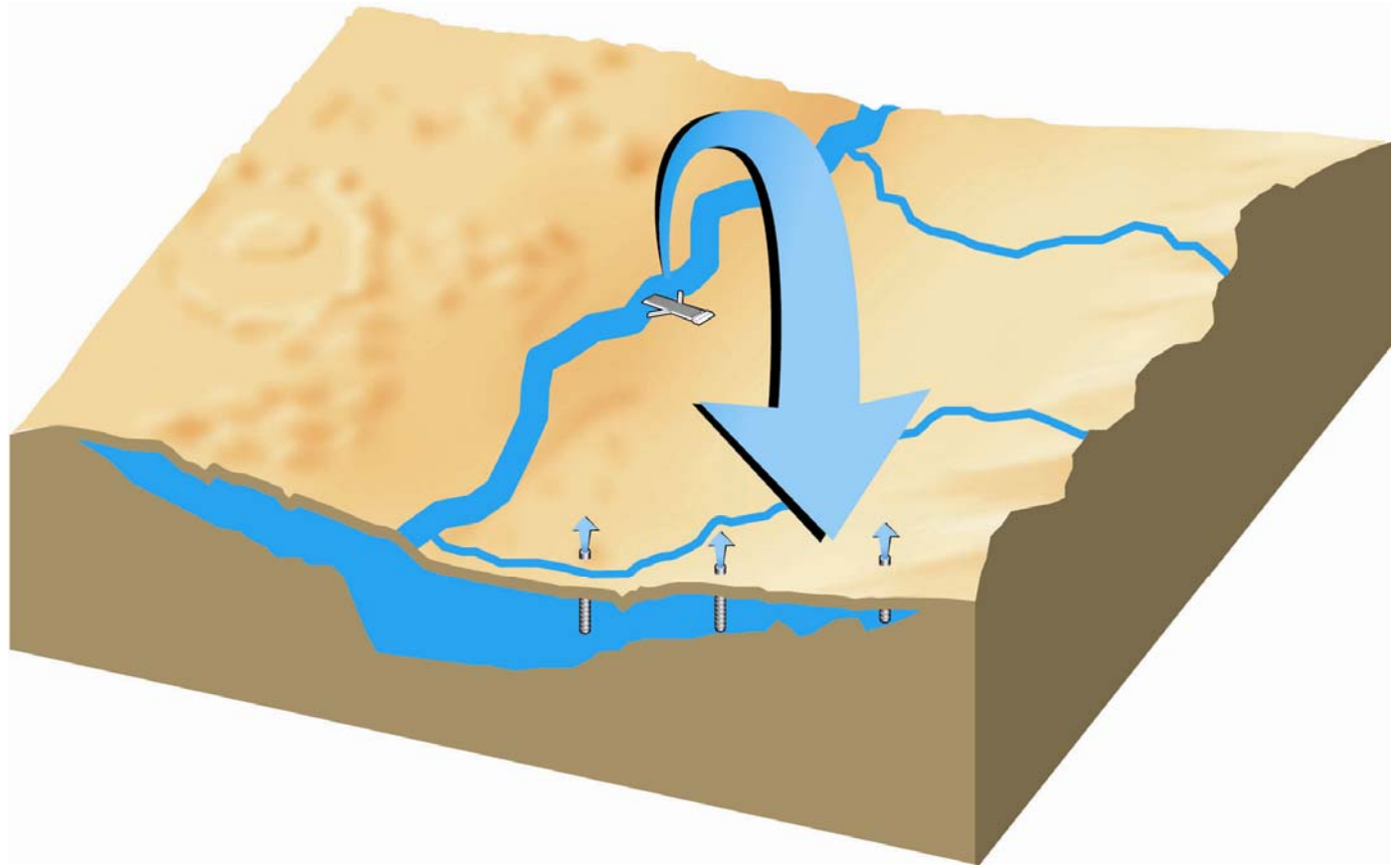


SANTA FE COUNTY CONJUNCTIVE MANAGEMENT PLAN FOR THE SANTA FE BASIN



January, 13th 2009

**Prepared by
Santa Fe County Attorney's Office and
Growth Management Dept: Water / Wastewater Operations**

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**Prepared for the Santa Fe County
Board of County Commissioners**

January 13th, 2009

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I. PURPOSE

The purpose of this Conjunctive Management Plan for the Santa Fe Basin (“the Plan”) is to set forth principles and planning objectives to guide the management of the County's water resources supplied from multiple sources. In addition, this document is intended to provide information to support the County's growth management strategy, and to guide similar planning efforts. The County's growth management efforts are focused on sustainable growth consistent with resources such as roads, utilities, water, access to education, police and fire services, and other important attributes of a civilized society.

II. OVERVIEW

The County is in the process of acquiring and diversifying its sources of water supply. Because the ground and surface waters available from the Santa Fe Basin are not sufficient to meet long-term demands, the County, along with its partners, the City of Santa Fe and Las Campanas, has embarked on a major surface diversion project on the Rio Grande known as the Buckman Direct Diversion (BDD) Project. Instead of relying solely on local water resources to supply residents of the Santa Fe Basin, the use of San Juan-Chama Project water and native Rio Grande water from the BDD will conserve water resources within the Santa Fe Basin.

Once the BDD becomes operational, the County will be able to deliver up to 2,200 acre-feet per year (afy) (1,700 afy directly from BDD and 500 afy from the City of Santa Fe through a wholesale water agreement). This water will be available for distribution to County customers. Although water from the BDD will provide additional supplies from a historically reliable source (the Rio Grande) and will lessen the demand on local supplies, this Plan recognizes that surface flows on the Rio Grande can be variable. Therefore, the County has identified potential facilities, mechanisms and sources of supply that may be used in conjunction with the County's primary source of supply from the BDD, as described in this Plan.

This Plan is intended to cover the period from commencement of operations of the BDD until the County portion of the project reaches its maximum capacity of 1,700 afy, which is expected in about 20 years. The County recognizes that it will need to develop other sources of supply in the future not described in this Plan in order to meet demands in the long-term.

Implementation of this Plan is intended to provide the following major benefits to the Santa Fe Basin:

- **Protection of Local Water Resources:** By using surface water from the Rio Grande as the primary source of supply, use of local ground water resources will be minimized and water in the local aquifer will be preserved.
- **Reliability of Supply:** By establishing a back-up groundwater supply, water supplied by the County water utility will be made reliable even during those times when Rio Grande surface supplies may be inadequate, because of drought or other conditions affecting river flow, including the potential impact of climate change.

- Acequia Preservation: This plan also affirms the County policy of protection of acequia water rights.
- Optimization of Public Assets: By proposing a multi-year rolling average for groundwater use, this Plan will dramatically reduce the number of local groundwater rights needed by the County and will optimize the rights already controlled by the County.
- Benefits to Other Water Rights Holders: By shifting the predominant source of supply from local groundwater to Rio Grande surface supplies, depletions effects on area springs and surface water tributaries will be reduced.
- Environmental Benefits: In addition to reducing depletions to springs and tributaries, this Plan contains a specific proposal to increase flows in the Santa Fe River.
- Regional Coordination: A critical foundation of this plan is regional cooperation and coordination with other stakeholders, including acequia associations, the City of Santa Fe and the Pueblos of Nambe, Pojoaque, San Ildefonso and Tesuque.

III. SURFACE SUPPLY FROM THE RIO GRANDE

A. The Buckman Direct Diversion (BDD) Project.

The BDD project is the major ongoing initiative to bring a new and substantial source of supply to the Santa Fe Basin. To be located on the east side of the Rio Grande three miles south of the Otowi Gage, the project will divert surface flows of the Rio Grande, provide treatment, and provide potable water for distribution and use by the City and the County. Las Campanas will receive raw, untreated water from the project. Slated to be completed and commence operations in 2011, the BDD will be authorized to divert 8,730 afy, allocated among the project's three partners

Table 1: Allocation of BDD Annual Diversion Capacity

PARTICIPANTS	ALLOCATION OF CAPACITY (AFY)
Santa Fe County	1,700
City of Santa Fe	5,230
Las Campanas	1,800
Total	8,730

B. Purpose and Need for the Project.

On February 11, 2008, the U.S. Forest Service and the Bureau of Land Management authorized issuance of the Record of Decision approving the BDD as proposed in the Final Environmental Impact Statement dated September 2006 (BDD EIS). The BDD EIS describes the purpose and need for the project as follows:

As demonstrated by drought conditions in 1996, 2000, and 2002, continuing water shortages in the City and County resulted in a critical and immediate need for water. To meet this need, the applicants are seeking sustainable means of accessing surface water supplies that would use the applicants' water rights by diverting San Juan-Chama Project water and native Rio Grande water while reducing their reliance on over-taxed ground water resources.

The Buckman Well Field, a group of ground water wells located near the river in the vicinity of the Buckman site, is currently being used to access existing water rights in order to provide water to the City and County water service areas and Las Campanas. However, the well field cannot provide a reliable and sustainable source of water. Well yields have been reduced; hydraulic heads in the confined ground water aquifer near the well field have undergone substantial declines; and depletions of nearby streams could cause limitations to pumping. At current well production levels, undesirable consequences to ground water levels and continued depletion of nearby streams are expected to occur unless an alternate reliable water supply is found. (BDD EIS, pages 1 & 17).

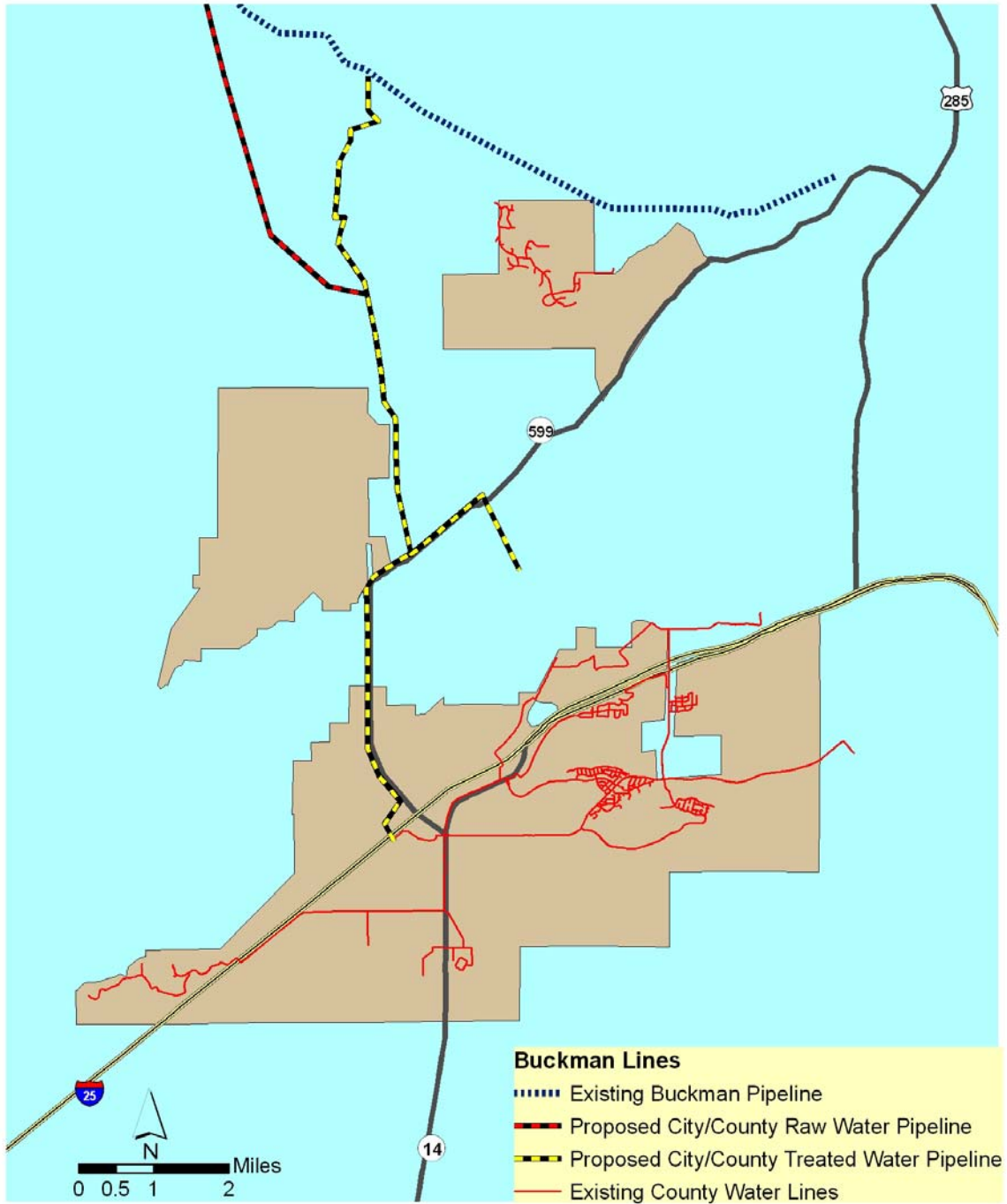
As described in the EIS, the no-action alternative would mean the project would not be built and, instead, the project participants would continue to rely on the limited resources of the Santa Fe Basin. However basin surface water is not available for new uses and local groundwater levels are in decline. Below the City of Santa Fe reservoirs flow in the Santa Fe River is intermittent, only occurring when reservoirs are full because of high snow pack or rainfall or after storm events. The vast majority of the time, the river bed is dry.

Drawdown effects and subsidence caused by pumping of the City of Santa Fe's Buckman Well Field have revealed the limited capacity of the aquifer to provide a long-term source of supply. Although the Buckman Well Field is permitted for diversion of 10,000 afy, the safe yield is considered to be well below that amount. In conjunction with the operations of the BDD, the City of Santa Fe has projected that its average annual diversion from the Buckman Well Field will drop to 1,000 to 2,000 acre-feet.

Although growth in the unincorporated County within the Santa Fe Basin can be managed, it is predicted that population increases will also mean more residences and more demand for water. Residents not served by the County water utility are reliant almost exclusively on domestic wells.

Figure 1: Map of Existing and Proposed BDD Lines

Santa Fe County Utility Service Area



With population growth in the unincorporated County over time, the number of domestic wells drawing from the local aquifer has increased. Under current New Mexico law, transfer of a water right is not required to obtain a domestic well permit.

These domestic wells place additional stress on the aquifer; eventually, this stress may lead to diminished surface flows and spring volumes. Residents of the La Cienega area have already expressed concerns about the effects of pumping on spring flows from the La Cienega springs.

Consistent with this Plan, supply of water from the BDD will allow the County to provide an alternative supply to existing domestic groundwater demand and substitute an imported supply for new demands that otherwise would seek domestic or other groundwater supply from the local aquifer.

Although the use of surface water from the BDD should greatly relieve demand on local water resources, the County recognizes that it cannot solely rely on BDD supplies and that it will be necessary, as discussed below in Section IV, to permit and construct an in-basin County well field to provide supplemental and backup supply.

C. Categories of Surface Water Supply from the Rio Grande.

Santa Fe County will have two distinct types of water supply available from the Rio Grande for diversion by the BDD. The following table shows the quantity of supply by category both of native rights and San Juan-Chama Project diversion rights for the County and its two BDD partners.

Table 2: Categories of Water Rights for Diversion at the BDD

BDD PARTNER	NATIVE RIGHTS (AFY)	SAN JUAN-CHAMA PROJECT WATER CONTRACT AMOUNT (AFY)	OSE PERMIT of SAN JUAN-CHAMA PROJECT WATER DIVERSION AMOUNT (AFY)
Santa Fe County	1,325	375	367.5
City of Santa Fe	-0-	5,230	5,125.4
Las Campanas	1,800	1,200*	1,200*

*Temporarily leased from the City of Albuquerque; expiring in 2016

In order to make its Rio Grande surface water supplies as reliable as possible, the County will manage its native and San Juan-Chama water to maximize the availability of each source of supply in combination with the other.

1. San Juan-Chama Project Water.

In 2006, Santa Fe County signed a permanent contract with the U.S. Bureau of Reclamation for 375 afy of water from the San Juan-Chama Project. Under OSE Permit No. 4842 Santa Fe County may divert up to 367.5 afy which may be increased to 468.75 afy if adequate stored water is available for release to allow for the increased diversion.

The San Juan-Chama Project diverts water from the San Juan stream system within the State of New Mexico's apportionment of the Colorado River. Under a 1955 State Engineer permit, the Bureau of Reclamation diverts water from the Blanco, Navajo and Little Navajo streams and transmits that water through tunnels across the Continental Divide to the Upper Rio Chama stream system and into storage at Heron Reservoir. The Bureau of Reclamation has contracted for an annual release to project beneficiaries of 96,200 afy based on the project's firm yield. All of the San Juan-Chama Project water is either under contract or otherwise allocated.

The County's San Juan-Chama Project water along with its native rights allow for a more diversified portfolio of supply from the Rio Grande. Because of the Bureau of Reclamation's storage facilities at Heron Reservoir, San Juan-Chama water is relatively reliable. In addition, under Section 205 of the Energy and Water Development Appropriations Act, 2005 (118 Stat. 2949), San Juan-Chama Project water is insulated from flow demands required for the endangered Rio Grande silvery minnow. San Juan-Chama Project water is also immune from priority administration on the Rio Grande.

The 375 afy of San Juan-Chama Project water owned by the County represents only about a quarter of the supplies available for the County's portion of BDD. If possible, the County should seek to obtain additional San Juan-Chama Project water either through permanent contract or through lease.

In 2005, the City of Santa Fe entered into a 50-year lease with the Jicarilla Apache Nation for 3,000 afy of San Juan-Chama Project water. Additional San Juan-Chama Project water may be available for lease. However, in considering whether it is appropriate to lease water, the County must consider (1) whether the lease price is economical in comparison to water right purchases; (2) what assurances may be built into a lease to facilitate lease renewal if desired by the County; (3) what portion of the County's total supply should be leased water in the event a lease is not renewed; and (4) whether the State Engineer will issue a permit approving use of leased water.

As a matter of good water planning, a water utility should not commit to provide permanent service to uses based upon a temporary (leased) water supply. Nonetheless, because within every water utility service area some uses require a permanent supply and others do not, it may make sense for some fraction of a water utility's total expected water demand budget to be supplied from leased water. Given the ratio of residential uses to other uses such as recreational and commercial expected over time within the Santa Fe County service area, this Plan adopts an upper limit of 10% of the total water supply available to the County that could be considered for lease. If for example at an unspecified point in the future, the total County water demand is projected to be 3,000 afy, no more than 300 afy should be derived from a leased water supply.

2. Native Rio Grande Rights.

If the County does not lease, store or acquire any additional San Juan-Chama Project water, then its current permitted amount of 367.5 afy will be the maximum amount of San Juan-Chama Project water available from the BDD. As a result, over time the County will need to acquire and transfer 1,332.5 afy of native rights for use from the BDD. Over the last several years, the County has acquired and transferred 536.8 afy to the Buckman Well Field. Now that the State Engineer has issued the BDD permit, the County will transfer the rights permitted in the Buckman Well Field to the BDD. In addition, the County currently has 100.05 afy permitted and is continuing to transfer native rights directly to the BDD in the amount of 597.99 afy. Additional waters that potentially could be transferred into the County wells will instead be transferred to the BDD if the State Engineer approves multi-year averaging of pumping from the County wells as proposed in Section IV (B), below.

Table 3: Santa Fe County Rio Grande Native Rights

STATUS	QUANTITY (AFY)
Completed Transfers to the BDD	100.05
Buckman Well Transfers Available for Transfer to BDD	536.8
Pending Applications for Permit to BDD	597.99
Available for Transfer to BDD	436.4
TOTAL	1,671.24

A detailed description of the water rights summarized in Table 3 is provided in Appendix A. Although the above total above the 1,332.5 afy needed, the County assumes that not all of the amounts applied for will be granted. For planning purposes, the County assumes another 100 to 200 afy of water rights may be acquired and transferred to the BDD to reach the County's full capacity of 1,700 afy including the 367.5 afy of San Juan-Chama Project water. Once 1,700 afy is transferred to the BDD, the County expects to continue acquiring and transferring additional water rights in order to meet projected 40-year water supply needs.

In January of 2006, the State Engineer instituted a new policy prohibiting transfers of pre-basin (1956) and post-compact (1938) groundwater rights for use as offsets of surface depletions caused by groundwater pumping of post-basin wells within the Middle Rio Grande. This policy reflects concern by the State Engineer that water users should not become reliant on junior groundwater rights to assure that their groundwater pumping effects on surface flows are in priority.

This issue raises the question whether the County's native water right supplies are sufficiently senior in priority to assure reliability. Of the water rights identified in Table 4 below, 60 acre feet are pre-basin, post-compact groundwater rights and 1,671.24 acre feet are more senior pre-1907 surface water rights.

Table 4: Breakdown of County BDD Native Water Rights by Category and Priority Date

TYPE OF RIGHT	QUANTITY (AFY)	PERCENTAGE OF TOTAL	PRIORITY
Groundwater	60.0	3.5 %	Pre-1956, Post-1938
Surface Water Rights	1,671.24	96.5 %	Pre-1907

More than ninety-six percent of the County’s native Rio Grande rights have senior priority, pre-1907 surface water rights and should assure high security in the availability of supply under those rights. In evaluating water rights for acquisition in the future, the County should seek to acquire senior water rights. However such acquisition must conform to the County’s long standing policy of protection of acequia rights.

D. Curtailment of BDD Operations

Operations of the BDD are subject to a staged curtailment plan approved by the U.S. Fish and Wildlife Service. See the Biological Opinion dated June 25, 2007, pages 11-13. During the irrigation season (March through October), the curtailment plan requires reduction of diversions of native Rio Grande water at the BDD during low-flow conditions. The curtailment plan is designed to minimize the potential effects of BDD diversions to the endangered Rio Grande silvery minnow during the period of highest water use in the Middle Rio Grande typically occurring in warmer months after spring runoff.

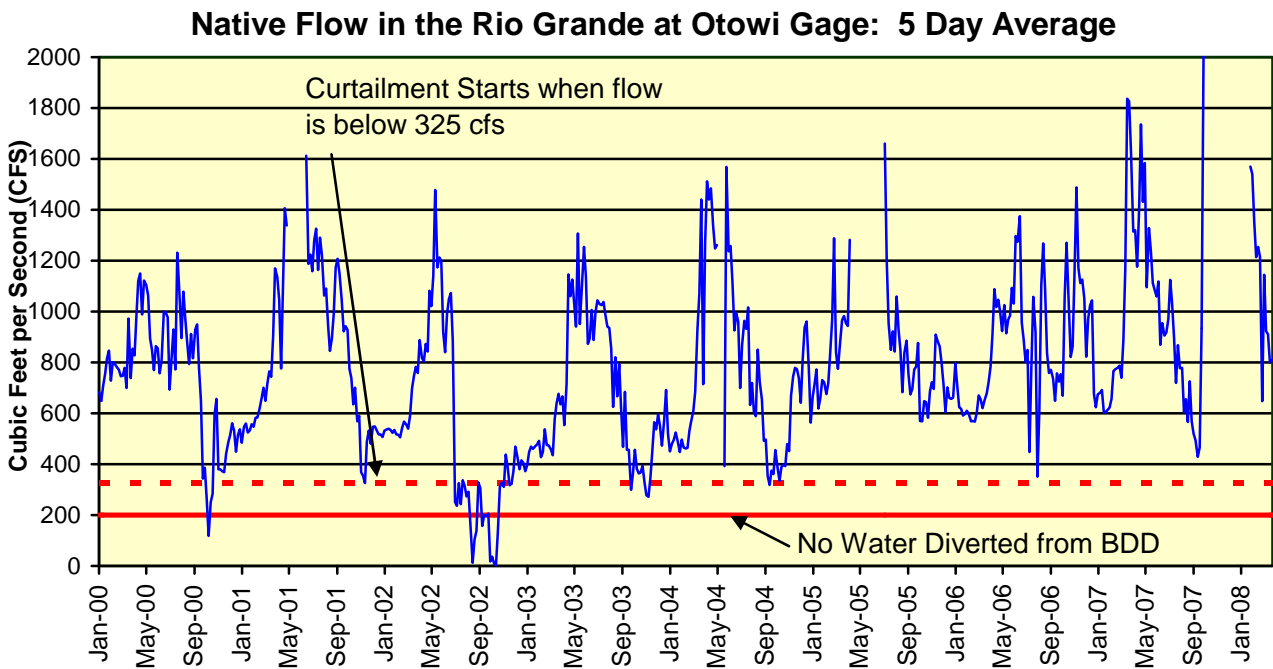
Curtailment will be based on a 5-day running average measurement of native flows (those flows except for San Juan-Chama Project water released for municipal and industrial consumptive use) when the Otowi Gage shows a flow at or below 325 cubic feet per second (cfs). When this threshold is passed, the plan calls for diversions of native Rio Grande water to decrease according to the schedule shown in Table 5. For example, if a 5-day average of native flows in June dropped to 260 cfs at Otowi, BDD diversions of native water would be reduced to 4.1 cfs.

Table 5: Curtailment Schedule for BDD when Otowi Gage Native Flows are below 325 cfs.

Month:	BDD Diversions (CFS)							
	March	April	May	June	July	Aug	Sept	Oct
Native Flow in cfs								
325 cfs and above (no reduction)	3.82	4.6	6.87	8.55	7.95	7.56	6.57	5.09
300	3.05	3.68	5.50	6.84	6.36	6.05	5.26	4.07
280	2.44	2.95	4.40	5.47	5.09	4.84	4.21	3.26
260	1.83	2.21	3.30	4.10	3.82	3.63	3.16	2.44
240	1.22	1.47	2.20	2.73	2.54	3.42	2.10	1.63
220	0.61	0.74	1.10	1.37	1.27	1.21	1.05	0.81
200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The curtailment plan demonstrates in very concrete terms that supply to County utility customers could be cutoff in the absence of backup sources that can be managed conjunctively with BDD supply. Figure 2 shows the 5-day average of native flow on the Rio Grande at Otowi Gage. Native flow was estimated by subtracting the daily release of San Juan Chama Water (except irrigation water) from Abiquiu Reservoir from the average daily flow measured at Otowi Gage. The San Juan Chama daily release data was obtained from the Bureau of Reclamation in the form of a daily log sheet. Overall there are brief periods where curtailment of BDD water would occur with the exception of the summer and fall of 2002 where a prolonged curtailment is estimated.

Figure 2: USGS Otowi Gage Data



E. Potential Effects of Climate Change.

There is uncertainty regarding climatic changes induced by natural and anthropogenic processes. Global climate change may affect water resources negatively, and particularly vulnerable semi-arid climates like that found in New Mexico. Global climate change can impact hydrological extremes such as floods and droughts, influencing all their parameters – severity, frequency, and intensity.¹

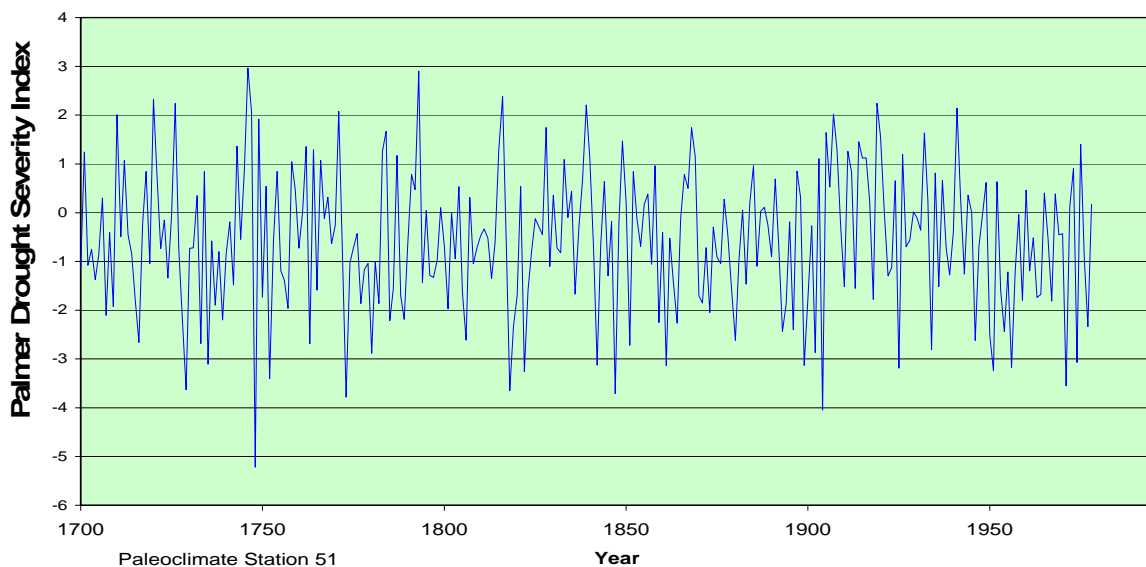
Santa Fe County is susceptible to climatic change. In the Santa Fe Basin, mountain front recharge from melting snow pack is the primary source of water for the aquifer and the City's reservoirs. These sources currently constitute the County's principal water supply. After the BDD becomes operational, the Rio Grande will become an important additional source of water. It too may be susceptible to droughts or floods if climatic trends are negative.

¹ Z. W. KUNDZEWICZ and L. SOMLY O'DY, *Water Resources Management* 11: 407–435, 1997.

The long term effects of climatic change on our community are uncertain. Some research points towards a wetter and hotter New Mexico; other research reaches different results. However, one only needs to consult the long term climatic record in New Mexico to realize that the potential for severe climatic change exists. Tree ring data discloses a troubling climatic past in New Mexico. Even if research cannot with certainty pinpoint the effects of climatic change on New Mexico, the historic record shows that non-anthropogenic climatic change has already produced serious consequences on our region in the past.

This region regularly undergoes wet and dry cycles. Figure 3 is a measurement of the relative drought severity in the Santa Fe region over 300 years. The 2,000 year record shows that severe dry cycles occur with regularity. The consequences of dry cycles of the magnitude seen in the historical record are sobering.

Figure 3: Tree Ring Data- Relative Drought Severity in the Santa Fe Area



Since the County, through the BDD, will be relying on the Rio Grande as its primary water source (with the Santa Fe Basin serving as a secondary or back up source), it is important to understand how the trends seen in the climatic record might affect this source. The climatic record can be used as a tool to understand the frequency, duration and severity of droughts, and therefore the flows of the Rio Grande during dry cycles. The operating rules of the BDD will require that deliveries from that source begin curtailment when flows in the Rio Grande are below 325 cubic feet per second. All deliveries cease when flows are below 200 cfs. The challenge is determining how the droughts regularly experienced in New Mexico in the past will affect river flows in the future.

To estimate how reduction in stream flow may affect the County, staff applied reductions to the native flows at Otowi Gage to examine different scenarios. In Figure 4, native flows were reduced by 25%. In Figure 5, flows were reduced by 50%. These reduced supply scenarios

illustrate how drought might produce periods when deliveries from the BDD will be curtailed, requiring other water sources to supply county residents.

Figure 4: Hypothetical 25 % Reduction of flow on the Rio Grande

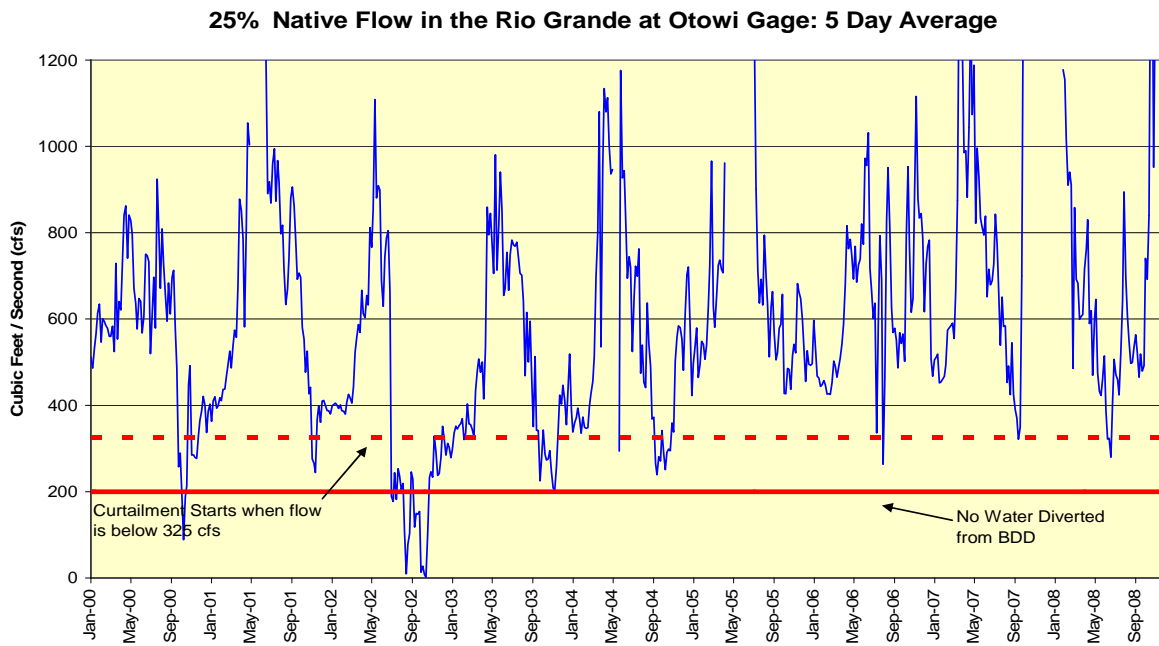
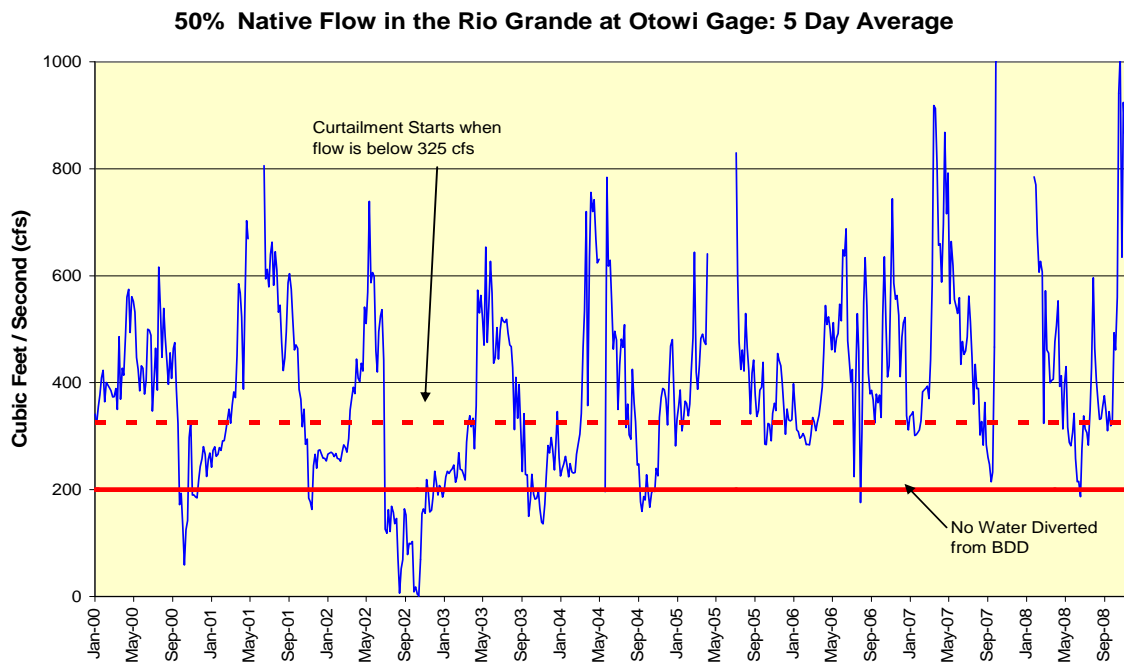


Figure 5: Hypothetical 50% Reduction of flow in the Rio Grande



F. Storage at Abiquiu Reservoir.

In order to provide further certainty and flexibility for its Rio Grande water supplies, both native and San Juan-Chama, the County is in the process of securing a storage contract in Abiquiu Reservoir. The most likely use of storage capacity in Abiquiu Reservoir would be for the County's San Juan-Chama Project water. Under OSE Permit No. 4842 Santa Fe County may divert 468.75 afy if adequate stored water is available for release to allow for the increased diversion.

Every year, San Juan-Chama contractors must either accept release of their San Juan-Chama allocation or the waters revert back to the common pool in Heron Reservoir. Having its own separate storage in Abiquiu Reservoir would allow the County to take delivery of its project water and place it in storage for use when needed.

IV. CONJUNCTIVE AQUIFER MANAGEMENT

A. Need for Groundwater Backup Supply

Santa Fe County recognizes the importance of conjunctively managing surface and groundwater resources in order to provide a long-term and reliable supply. Essential to the County's Plan is use of available surface water supplies, namely from the Rio Grande (the primary source of supply), and groundwater (a backup or supplemental supply). Under this plan, groundwater is described as backup supply, much like a water savings account or reserve.

Once the BDD becomes operational, the County will have 2,200 afy of available supply from the Rio Grande (1,700 afy from the BDD and 500 afy of wholesale water from the City of Santa Fe, as described in Section V(C) below).

One essential planning issue that must be addressed is whether in times of BDD shortage groundwater supplies should be expected to provide 100% backup for all County deliveries or some fraction thereof. The County believes that in times of shortage, conservation and water use restrictions should be used to reduce consumption to the extent feasible. However, demand on the County system is not particularly responsive to conservation and water use reduction since most developments in the County are fairly new, include restrictive water budgets and have built in conservation measures required by the Land Development Code. As a result, this Plan proposes an alternative or backup supply of 90% of the total annual maximum available from the BDD or 1,530 afy (90% of 1,700 afy¹). Not all of that amount, however, must be sourced from County wells. Under the 2005 Water Resources Agreement with the City of Santa Fe, the City agrees to provide up to 50% backup supply or 850 afy. Section 7 of the Agreement provides in part:

Under drought/catastrophic conditions (extreme drought, acts of sabotage, water quality restrictions, OSE/ISC restrictions), the City shall provide the County

¹ Because the 500 afy of wholesale water from the City is derived from the multiple sources of supply available to the City (including surface water from the reservoirs and groundwater from the City's wells), this Plan does not propose a groundwater backup supply for that source. This Plan only proposes a groundwater backup supply for the 1,700 afy of surface water to be derived from the BDD.

Independent Water System an amount of water not to exceed 50% of the County's total 1,700 afy of diversion capacity from the BDD project. After the deliveries of water from the BDD project begin and when the County's diversion of surface water from the BDD drops below 850 afy (50% of 1,700 afy), the City Independent Water System shall provide the County Independent Water System the necessary water to maintain deliveries of no less than 850 afy.

The County views this provision as "bottom half" protection, because it only affords backup water supply when deliveries from the BDD to the County drop below 850 afy. For example, if deliveries from the BDD to the County dropped to 800 afy, the City would be obligated to deliver 50 afy to the County. Any amount above 850 afy would have to be obtained from some other source.

In order to achieve a 90% backup supply, the County will need approximately 680 afy of supply from some other source. This plan proposes that that source be groundwater. Through permitting and development of a County well field with the ability to pump up to 680 acre-feet in any given year, as necessary to bring County supplies up to approximately 1,530 afy, or to meet 90% of maximum peaking required on a daily basis if BDD deliveries drop below demand.

Use and development of new groundwater supplies in the Santa Fe Basin is a highly charged issue. In accordance with this Plan, the County undertakes such development *only* in the context of its overall conjunctive management planning, which places the greatest and primary reliance on surface water. The permitting and development of additional groundwater must be viewed in the context of an overall management strategy that, in fact, has a net beneficial hydrologic effect, by causing more water to be imported into the Santa Fe Basin and by reducing overall pumping demands on local groundwater resources in the service area of the County water utility.

It must be recognized that a successful surface water importation strategy must include a groundwater component. The County's proposed supplemental groundwater supply, as a component of an overall management strategy, provides essential reliability and dependability.

In 2005, the Board of County Commissioners directed the Water Resources Department (now Water and Wastewater Operations Division of the Growth Management Department) to investigate the best locations for County wells. The County hired the hydrology firm of Intera to develop a mathematical groundwater model of the Santa Fe Basin and spatial model to assist the County in determining the best locations for potential wells, given a number of factors including land status, aquifer characteristics, existing water rights and water resources and the proximity and availability to existing County utility infrastructure. In 2006, the County Water Resources Department and Intera conducted public meetings and made available the initial results of the modeling effort, showing effects of pumping up to an additional 400 afy from hypothetical County well sites. Further development of the mathematical groundwater model, in cooperation with the State Engineer Office and the City of Santa Fe, is currently in progress. This model will be utilized in the decision-making process and assure efficient use of water resources while avoiding impairment of existing uses.

B. Proposed Multi-Year Rolling Average.

Consistent with this Plan, the County will request from the State Engineer a ten-year rolling average of its groundwater use consistent with reliance on groundwater as a secondary source. Approval of a rolling average will drastically reduce the number of acre-feet per annum of water rights required for permitting in County wells within the Santa Fe Basin.

In most years the historic hydrograph of the Rio Grande suggests the BDD will be able to deliver the full County allocation of 1,700 afy. Likewise, in most years groundwater backup supplies would not be needed. The County believes it would be an inefficient use of public resources to purchase and transfer 680 afy of groundwater rights that would not be used in most years.

At present, the County has approximately 200 acre-feet of Santa Fe Basin water rights available for long-term groundwater back-up on an annual basis. Using a ten-year rolling average, 200 acre-feet per year could produce up to 2,000 acre-feet of back-up supply in any ten-year period. Figures 6 and 7 shows two possible scenarios for groundwater supply. Scenario 1 utilizes 620 acre-feet of backup groundwater supply for three years over a ten-year period to simulate a 3 year drought. The second scenario presumes no water from the BDD for an entire year and illustrates the City of Santa Fe providing 850 acre-feet of bottom half supply. Both scenarios presume multiple wells with small amounts of water diverted for infrastructure maintenance issues.

Figure 6: 10 year Rolling Average with wells pumping 620 acre-feet for 3 years

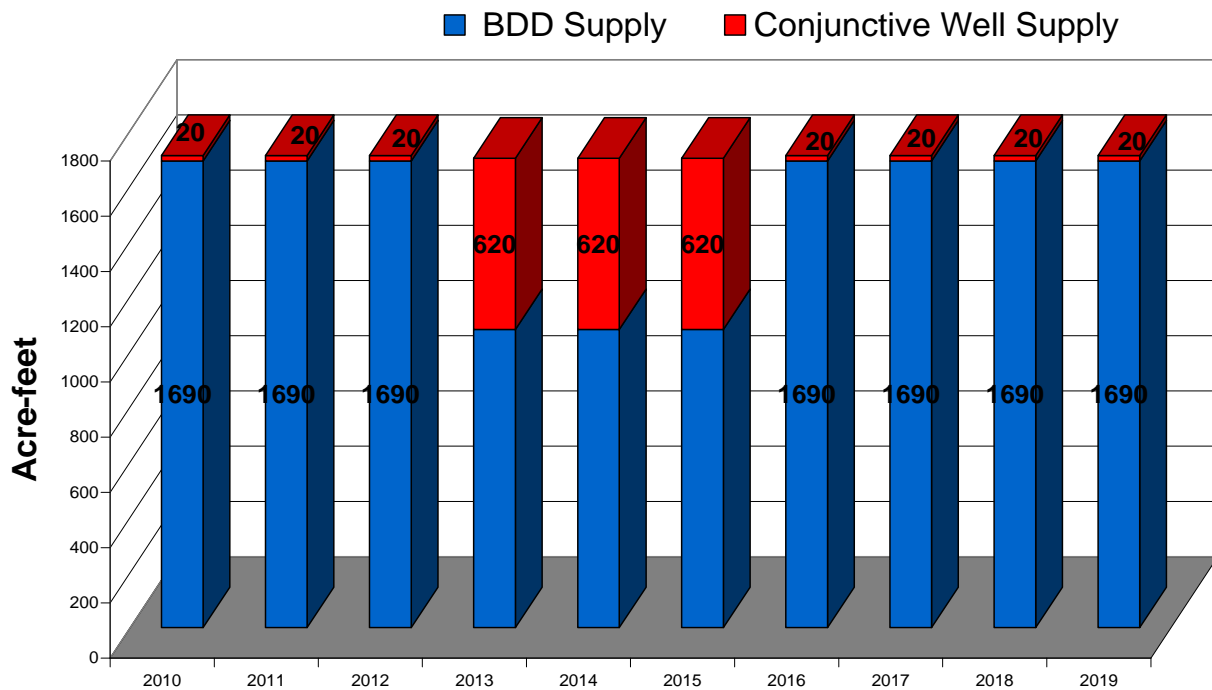
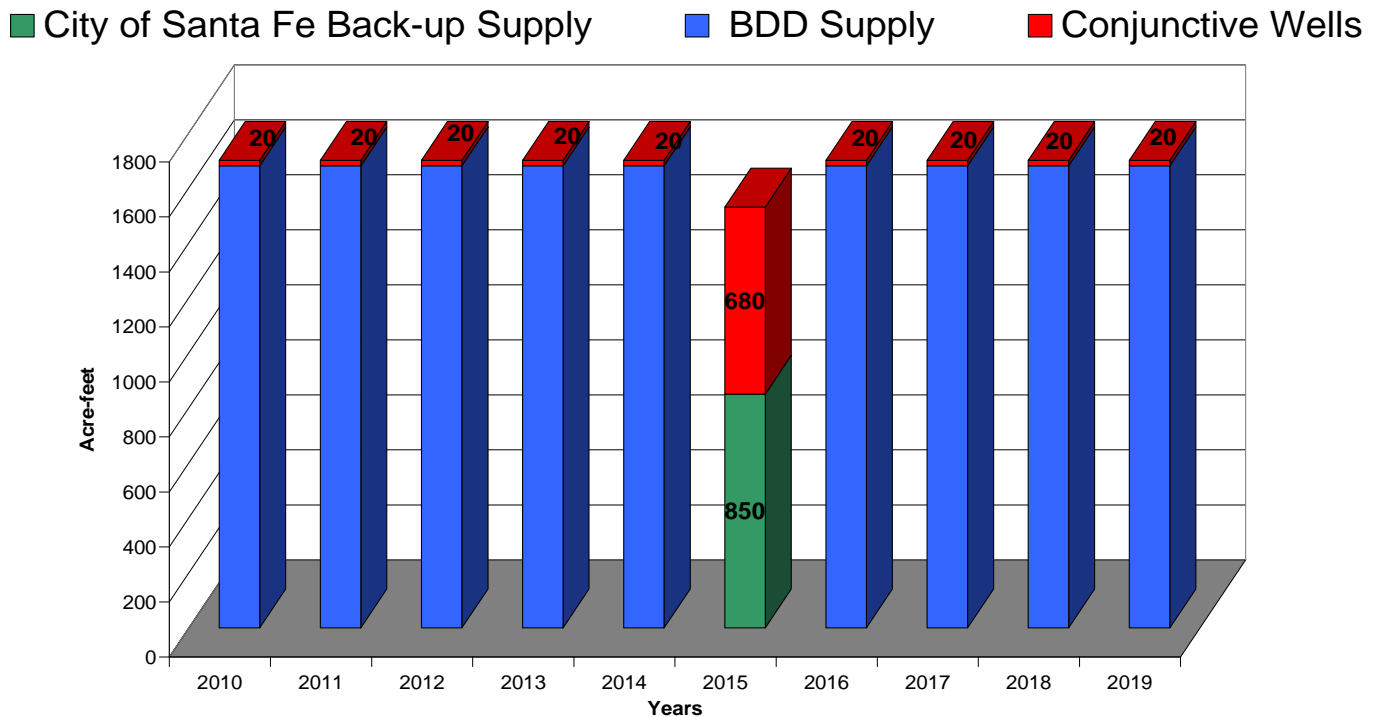


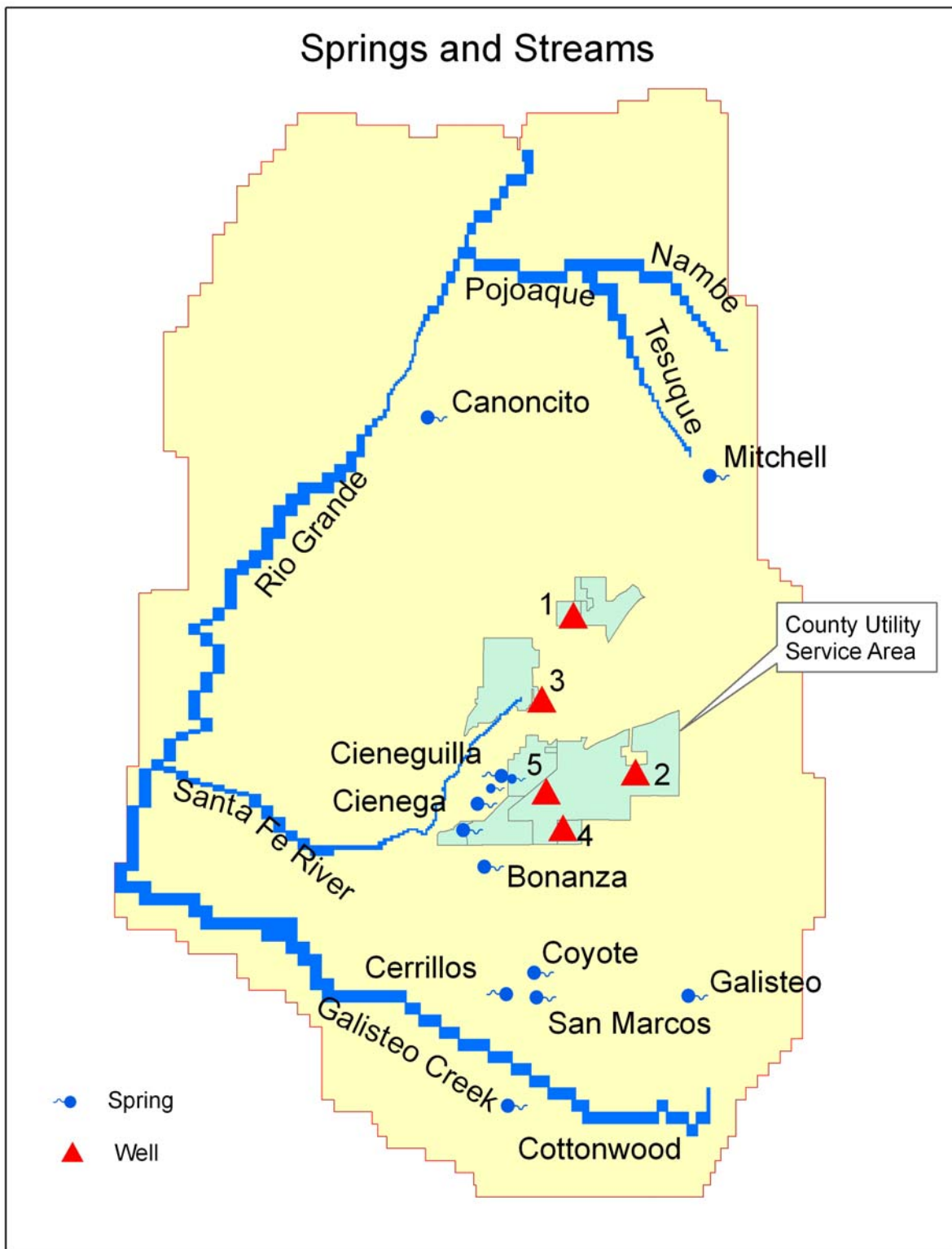
Figure 7: No BDD Water for 1 year



In order to prevent impairment, wells permitted with such a multi-year accounting would be managed so as not to interfere with neighboring wells in years in which pumping is at high levels. With respect to depletions on surface flows, resting of wells is expected to even out surface flow effects so that even though a well is pumped in small amounts some years and larger amounts in others, the net effect should moderate calculated depletions to surface flows.

To evaluate the predicted impacts of a 10 year rolling the Santa Fe County Regional Groundwater Model was utilized. Five hypothetical but likely well locations were chosen to simulate future conjunctive management wells. (Figure 8) Back-up scenario 1 which mimics a 3 year drought was chosen to be conservative. A total pumping of 620 acre-feet split evenly among the five hypothetical wells for three years and the wells resting, excluding small maintenance level pumping, for the remaining 7 years was modeled for calculated depletions to streams and springs due to 100 years of pumping (Figure 6 is a chart of this scenario). Those same five wells pumping 200 acre-feet per year split evenly among the wells were also modeled for calculated depletions to streams and springs due to 100 years of pumping. The difference in these two scenarios was compared to evaluate if the 10 year rolling average greatly increases predicted depletions to stream and springs. Drawdown to the water table was not analyzed for this plan but

Figure 8: Map of Groundwater Model Area, Springs, Streams and Hypothetical Well Location



will be included in the application to the State Engineer. Tables 6 and 7 below are the calculated depletions to streams and springs after 100 years of pumping. Slight impacts to Cieneguilla and Mitchell Springs and the Rio Tesuque and Santa Fe Rivers are calculated as a result of utilizing the 10 year rolling average. It is anticipated that these impacts can be reduced by modification of pumping time and quantities.

Table 6: Calculated Stream Depletions in Acre-feet

Stream Name	100 Year Stream Flow Reduction: Pumping 200 afa from 5 wells	100 Year Stream Flow Reduction: 10 year Rolling Average Scenario	Difference between 10 year Rolling Average and Pumping Every Year
Nambe	0.72 afa	0.72 afa	No Change
Rio Tesuque	1.56 afa	1.70 afa	0.14 afa Increase
Pojoaque Creek	0.64 afa	0.59 afa	0.05 afa Decrease
Rio Grande	3.01 afa	2.36 afa	0.65 afa Decrease
Santa Fe River	7.96 afa	7.98 afa	0.02 afa Increase
Galisteo Creek	1.33 afa	0.69 afa	0.64 afa Decrease

Table 7: Calculated Depletions to Springs

Springs	100 Year Spring Reduction: Pumping 200 afa Every year from 5 wells	100 Year Spring Reduction: 10 year Rolling Average	Difference Between 10 year rolling average and Pumping Every Year
Cieneguilla	1.64 afa	1.68 afa	0.04 afa Increase
Cerrillos	0.12 afa	0.12 afa	No Change
Mitchell	0.11 afa	0.13 afa	0.02 afa Increase
La Cienega	1.22 afa	1.21 afa	0.01 afa Decrease
Unnamed 1	1.54afa	1.52 afa	0.02 afa Decrease
Unnamed 2	0.87 afa	0.86afa	0.01 afa Decrease
Canoncito	0 afa	0 afa	No Change
Unnamed 3	0 afa	0 afa	No Change
Unnamed 4	0.14afa	0.14 afa	No Change
Coyote	0.02 afa	0.02 afa	No Change
San Marcos	0.01 afa	0.01 afa	No Change
Unnamed 5	0.13 afa	0.12 afa	0.01 afa Decrease
Cottonwood	0.00 afa	0.00 afa	No Change
Galisteo	0.00 afa	0.00 afa	No Change
Sunrise	0.04 afa	0.03 afa	0.01 afa Decrease
Arroyo Hondo	0.05 afa	0.05 afa	No Change
Guicu	0.02 afa	0.02 afa	No Change
Bonanza	0.02 afa	0.02 afa	No Change

Such a multi-year rolling average accounting of groundwater withdrawals allows flexibility consistent with the use of groundwater as a secondary source of supply. In addition, it should not significantly change and may even improve depletion effects on surface waters as compared to constant annual pumping.

The use of multi-year rolling averages is not new in New Mexico. In the Colorado Basin in New Mexico (i.e., the San Juan River and Gila River in New Mexico), a ten-year rolling average is used for purposes of interstate compact accounting. In the Roswell Artesian Basin, the State Engineer allows a five-year rolling average for groundwater use.

Depending on the length of multi-year accounting period allowed by the State Engineer, the 200 acre-feet of Santa Fe Basin water rights already available to the County may be enough to meet the County's need for backup groundwater supply.

C. Hydrologic Benefit to Santa Fe Basin Water Resources

Importation of Rio Grande water from the BDD, as an alternative to complete reliance on local water supplies, will directly enhance the water resources of the Santa Fe Basin. The importation of Rio Grande water has a double benefit for the local aquifer as it reduces demand for groundwater pumping and at the same time creates a new source of re-useable water.

The County's portion of the BDD will deliver 1,700 afy into the Basin. It is reasonable to expect that about half of that amount will be consumed or depleted by use. The other half or approximately 850 afy will be available for reuse, aquifer recharge and return flow. Figure 9 represents a conceptual model of the importation of surface water from the Rio Grande to the Santa Fe Basin.

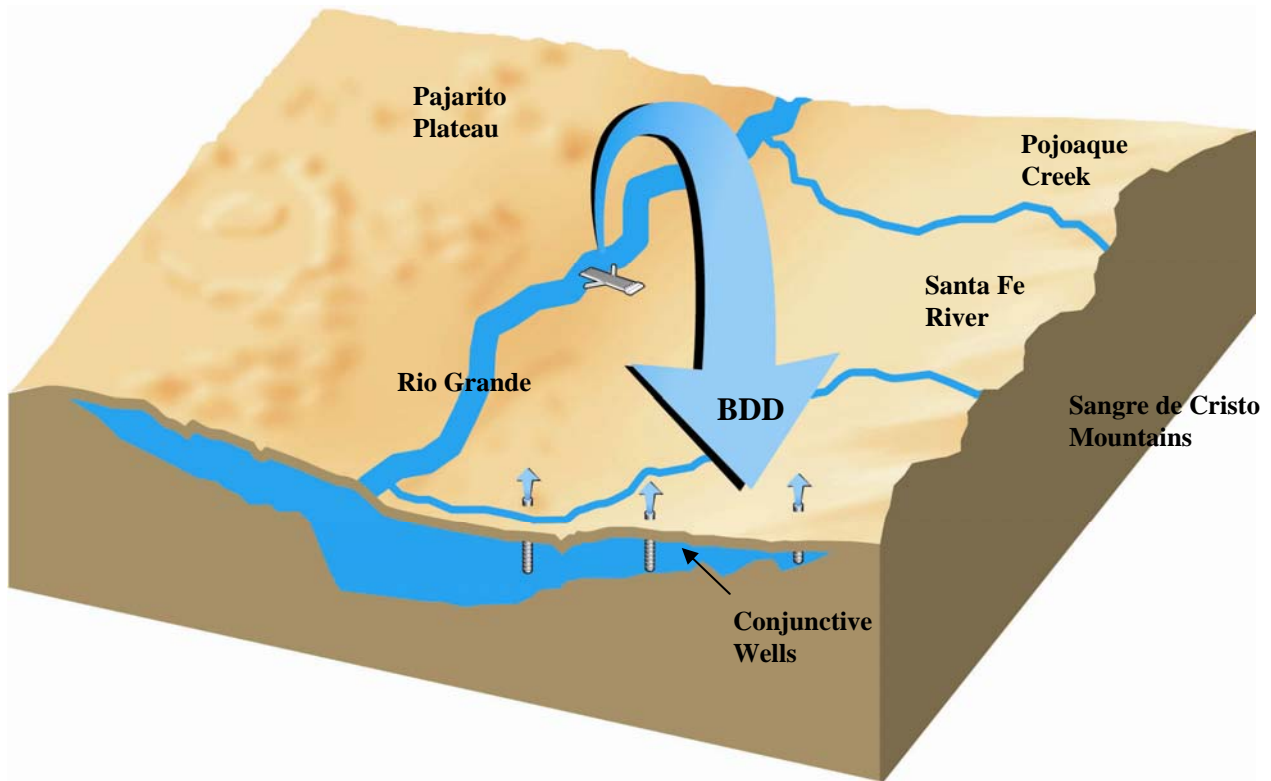
D. Use of BDD Capacity to Increase Flows in the Santa Fe River.

The BDD will also present an opportunity to increase flows of the Santa Fe River. Currently, almost all of the runoff in the upper Santa Fe Watershed is impounded in the City of Santa Fe reservoirs and is used to meet up to 50% of 2008 customer demand. Once the BDD becomes operational, however, some of the demand currently supplied from the reservoirs could instead be supplied from the Rio Grande. Such a substitution of supply could free up water for release into the Santa Fe River below Nichols Reservoir that would otherwise be impounded in the reservoirs.

This Plan proposes that the County and the City cooperate to use excess capacity available in the BDD to divert additional water from the Rio Grande in order to release commensurate flows in the Santa Fe River below Nichols Reservoir. Presuming necessary water rights are in place, the County will make the rights available on an annual basis. Under this plan it is requested the City pay the operational and maintenance costs associated with the delivery of BDD water that replaces the source of supply released to the Santa Fe River.

As the County understands, "The City's decision to release water to the Santa Fe River beyond the amount currently adopted by the City's Long Range Water Supply Plan will depend on

Figure 9: Santa Fe Basin Conceptual Model



multiple factors, including a) the amount of water in storage in the reservoirs, b) the spring stream runoff and weather projections, c) the current capacity of the City's alternative sources of supply, d) the cost of treated BDD water, e) legal constraints, f) water quality constraints, g) the availability of other offsetting water rights, h) whether BDD curtailment is occurring and i) the distribution of demand¹.

It must be recognized that this proposal only offers a short-term and declining solution. Over time, as County customer demand increases and then reaches the limit of County capacity, County capacity and water rights will no longer be available. The County is willing to cooperate with the City to find other means of continuing in stream flows consistent with long-term planning efforts to secure additional and expanded sources of supply.

¹ City of Santa Fe Memo dated November 7, 2008 from Claudia Borchert to Galen Buller, City Manager.

V. BACKUP AND ALTERNATIVE SOURCES OF SUPPLY

A. Santa Fe Basin Groundwater Rights

In order to begin the process of establishing a groundwater backup supply, in 2006 the County filed applications to transfer seven existing Santa Fe Basin groundwater rights comprising 92 afy to a number of proposed new County wells. In addition, the County is co-applicant to the transfer for County use of the Hagerman well rights in the amount of approximately 117 afy. The County also has water rights associated with the Valle Vista wells and pending domestic well transfers. Below is a table summarizing the ground water rights available to provide back-up water supply as proposed by this plan:

Table 8 : Pending and Approved In-Basin Water Rights Transfers

SELLER'S NAME/	OSE FILE NUMBER	QUANTITY APPLIED FOR (AFY)
El Monte Inc. and The Montoya Irrevocable Great Grandchildren's Trust (Zafarano)	RG-2644, RG-2644-X & X-2	26.00
Gardner Associates, LLC and Century Bank FSB(Stagecoach Motel)	RG-28789	5.53
Komis Land Company, LLC	RG-31156	6.09
Peter B. Komis	RG-591	13.55
Peter B. Komis (Zafarano)	RG-2644, RG-26344-X & X-2	26.00
Robert D. Pearson	RG-53-F	3.15
San Cristobal Village, LLC (Santa Fe Country Club)	RG-20379 & RG-20379S)	12.0
PNM / Horse Park (Hagerman Well)	RG-590	116.55
Valle Vista	RG-2251	36.00*
La Cienega Domestic Wells	RG-75904 et al into RG- 22251 et al	5.51
		Total: 250.38

*Note: OSE Permit approved March 28th, 2007 conditionally allowing the diversion of up to 60.8 afy until 2019. .

Because the above proposed transfers all involve Santa Fe Basin water rights, the effect of the proposed new use is simply a small shift of the proposed pumping center, with no change to the overall pumping right.

As discussed in Section IV, above, the pending transfers may be enough to meet the County's backup need of 680 acre-feet in shortage years if the State Engineer allows multi-year accounting. If the State Engineer does not allow multi-year accounting, the County will have to

acquire additional rights that will permit a total in-basin groundwater pumping right of 680 acre-feet per year which may be difficult or expensive to acquire.

B. 500 AFY of Wholesale Water from the City of Santa Fe.

In addition to the 1,700 afy that will be provided from the BDD as described in Section III, above, the County also has the right to receive 500 afy of wholesale water from the City of Santa Fe, pursuant to the 2005 Water Resources Agreement. Section 2 of that Agreement provides

Quantity. Wholesale Water Delivery to the County Independent Water System. From the effective date of this Agreement until deliveries of water from the BDD project begin, the City Independent Water System shall provide up to 875 afy to the three points of delivery currently serving the County Independent Water System. After deliveries of water from the BDD project begin, the City Independent Water System shall provide up to 500 afy in perpetuity to the three points of delivery of the County Independent Water System. Wholesale water delivery shall be subject to shortage sharing, Section 9 of this Agreement.

Paragraph 12 of the Water Resources Agreement provides that the County shall pay the City for the wholesale water based upon the City's wholesale water delivery rate, now currently \$3.50 per 1,000 gallons.

Under this Plan, the County intends to use this wholesale water source of supply when needed and in the future when County demand exceeds 1,700 afy. This source of supply is relatively expensive and presently is not the County's first choice of supply.

C. Aquifer Storage and Recovery

As an alternative to a drought reserve proposed by this plan Santa Fe County may consider Aquifer Storage and Recovery (ASR) as an option to preserve groundwater supplies. ASR is in its infancy in New Mexico and requires a relatively large population to be cost effective but may be something to consider in the future.

Aquifer Storage and Recovery Overview

The basic premise of aquifer storage and recovery is to store water underground when surplus supply exists; the water stored is either recovered directly at a later date or serves to recharge the aquifer. The source of water for storage is generally surface water or water reclaimed from treated effluent.¹ The primary mechanisms for conveying water into the aquifer are by injection well, Aquifer Storage and Recovery (ASR) Well or infiltration through a recharge basin. Recovery of stored water can occur directly in the case of an ASR well or indirectly down-gradient of an infiltration basin.

¹ Effluent is generally treated to drinking water quality prior to injection into the aquifer pursuant to standards established by the Water Quality Control Commission and administered by the New Mexico Environment Department.

Injection wells solely input water into an aquifer whereas an aquifer storage and recovery well permits injection and recovery from that same well. Utilization of recharge basins are favorable where the water table is shallow and where soils are permeable. These basins require acquisition of land and periodic removal of sediment to promote infiltration. Infiltrated water may have less regulatory constraints than direct injection as the sediments in the vadose zone can serve to attenuate or lessen some constituents of concern.

Among the advantages of underground storage are the ability to store surface water when supply is abundant (spring runoff), elimination of evaporative loss associated with surface reservoirs, reduction in salt water intrusion and subsidence due to over-pumping.

Underground storage is a cost effective and environmentally sensitive technique for water storage, and much preferred to the large surface water projects so common in the West. Public acceptance of effluent reuse needs to be taken into consideration with this type of project. Water quality requirements are dependant on regulatory requirements, quality parameters of the aquifer, and the interaction of the existing groundwater with the stored water.

In 1999, the State Legislature passed the Ground Water Storage and Recovery Act, Article 5A, Chapter 72, NMSA 1978, which creates a comprehensive permitting and administrative system for the injection and later recovery of water from defined aquifers. This practice is commonly known as aquifer storage and recovery (ASR). Under the statute, the County would be eligible to apply for a State Engineer permit to engage in ASR provided the local aquifer characteristics, including required confinement of injected resources, could be met.

The County has conducted a preliminary investigation of this alternative, and specifically has made an initial assessment of the feasibility of implementing ASR as currently practiced in the State of Arizona. Though the cost is currently prohibitive, Santa Fe County would like to consider this technology in the future.

D. Return Flow and Reuse.

Both the native and San Juan-Chama water rights that will constitute the supplies available from the BDD are consumptive use water rights. That means that the full 1,700 afy may be consumptively used. It is likely that only about half of the amount diverted is consumed by the initial use of County customers. In order reach full consumptive use of the right, the County would need to establish a wastewater collection and treatment system to allow either reuse or return flow in order to obtain return flow credits. The County is in the process of developing a wastewater collection system, as described in the County's Water and Wastewater Draft Utility Plan dated January 2008.

E. Conservation

Conservation is an important element of the County's water strategy. The County's Land Development Code strictly restricts water use in new developments, and more recently was amended to require very strict water conservation requirements, including water catchment and storage, and use of native plant species to reduce overall outdoor usage. These aggressive conservation measures have paid off in reduced per capita consumption. Santa Fe County utility customers are among the lowest per capita water users among water users in the Southwest

United States. The following is a summary of conservation ordinances adopted by Santa Fe County for new development:

Water Conservation Ordinance: This ordinance adopted in 2002 and amended in 2006 addresses water conservation for all residential and commercial uses of water within Santa Fe County. It outlines methods by which County residents and businesses can reduce their water use both indoors and outdoors and describes the domestic well metering program.

SFC Utility Metering, Billing and Rate Structure: Customer water use is metered and billed on a monthly basis. The bills provide individual customers information about their usage patterns and the cost associated with such usage. In addition, the monthly bills provide a convenient mechanism to distribute conservation-related information. The SFC Water Utility's rates are designed to provide a financial incentive to residential and non-residential customers to conserve water. The SFC Water Utility uses an inclining rate structure designed to encourage conservation. Additionally the utility has a three stage emergency water policy which allows mandatory water restrictions and penalties for violations.

Water Allocation Policy: By a resolution approved March 28, 2006 a limit was placed upon the amount of water a residential property will receive from the SFC Utility.

Rainwater Catchment Systems: Ordinance 2003-6 requires water harvesting plan to accompany all applications for development permits in Santa Fe County. This is not only a conservation measure but will also help mitigate urban runoff.

Hot Water Recirculation Devices: Ordinance 2006-8 requires installation of a hot water recirculation system in homes built after the effective date.

Swimming Pool Restrictions: Ordinance 2007-1 restricts the size of a swimming pool to no more than 30,000 gallons and requires a cover to minimize evaporative loss.

Extraterritorial Zoning Ordinance: This ordinance was amended in 1999 to adopt ground water management methods. Santa Fe County prohibits the drilling of new domestic wells on lots located within 200 feet of an existing regional water system distribution line.

Santa Fe County Land Use Code: Santa Fe County requires water restrictive covenants that run with the land for all new subdivisions or land divisions seeking a density adjustment based on water conservation.

The County is in the process of further updating its water conservation requirements as a part of its up-date to the County's 40 Year Water Plan. As discussed in Section C-1 during time of shortage of supply from the BDD, this Plan assumes that 10% of the shortage will come from conservation and use restrictions.

An analysis of gallons per capita per day (gpcpd) water usage from homes served by the Santa Fe County Utility was performed by the Office of the State Engineer utilizing their new GPCD Calculator for the years 2005 - 2007. (Table 9). Usage for 2004 was estimated by county staff

utilizing a methodology set forth by Western Water Resource Advocates.¹ This calculation was slightly modified to consider homes with a monthly water usage of less than 500 gallons a month to be considered unoccupied.

The average gallons per capita per day for the county has been in decline since 2004 presumably due to an inclining rate structure imposed in 2006 and above average precipitation. Figure 10 is a comparison of residential water use to other southwestern cities. Santa Fe County has the lowest residential per capita water use of all these cities which can be attributed to implementation of strong water conservation policy.

To estimate how much water can be conserved through mandatory drought reduction an analysis of non-essential water use was preformed. The primary non-essential water use for the utility is outdoor irrigation associated with residential customers. A conservative estimate of indoor water usage is 60 gallons per capita per day (gpcpd) and is arrived at by subtracting this figure from the total water usage during the irrigation season (April – September). The actual indoor gpcpd for the utility is around 52 gpcpd but using 60 gpcpd provides a small buffer for unforeseen events.

By such a calculation, an estimate of outdoor water usage can be calculated. Utilizing water use data from 2004 to 2007, and applying these principles, it is estimated that 16.5% of the total residential use of customers of the Santa Fe County Water Utility can be attributed to outdoor irrigation. Figure 11 below illustrates this estimate. Though rigorous conservation measures the utility presumes the outdoor water use can be reduced by 50 to 60 percent.

Table 9: Utility Residential Water Use

Santa Fe County Water Utility: Gallons Per Capita per Day (GPCPD)													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
2004	52	64	59	76	107	107	105	110	103	60	57	52	79
2005	47	61	50	56	65	102	92	85	77	66	50	51	67
2006	55	58	60	71	78	101	72	61	56	56	48	47	63
2007	48	55	50	53	56	67	78	73	75	60	55	45	60

¹ Smart Water, A Comparative Study of Urban Water Use Efficiency Across the Southwest, 2003, Western Resource Advocates.

$$\text{Per Capita Water Usage} = \frac{\text{Quantity of water sold to homes using } > 500 \text{ gallons per month}}{\text{Number of homes using } > 500 \text{ gallons per month}} \times \frac{1}{\text{US Census per Household Size}}$$

Figure 10: Western Residential Water Use

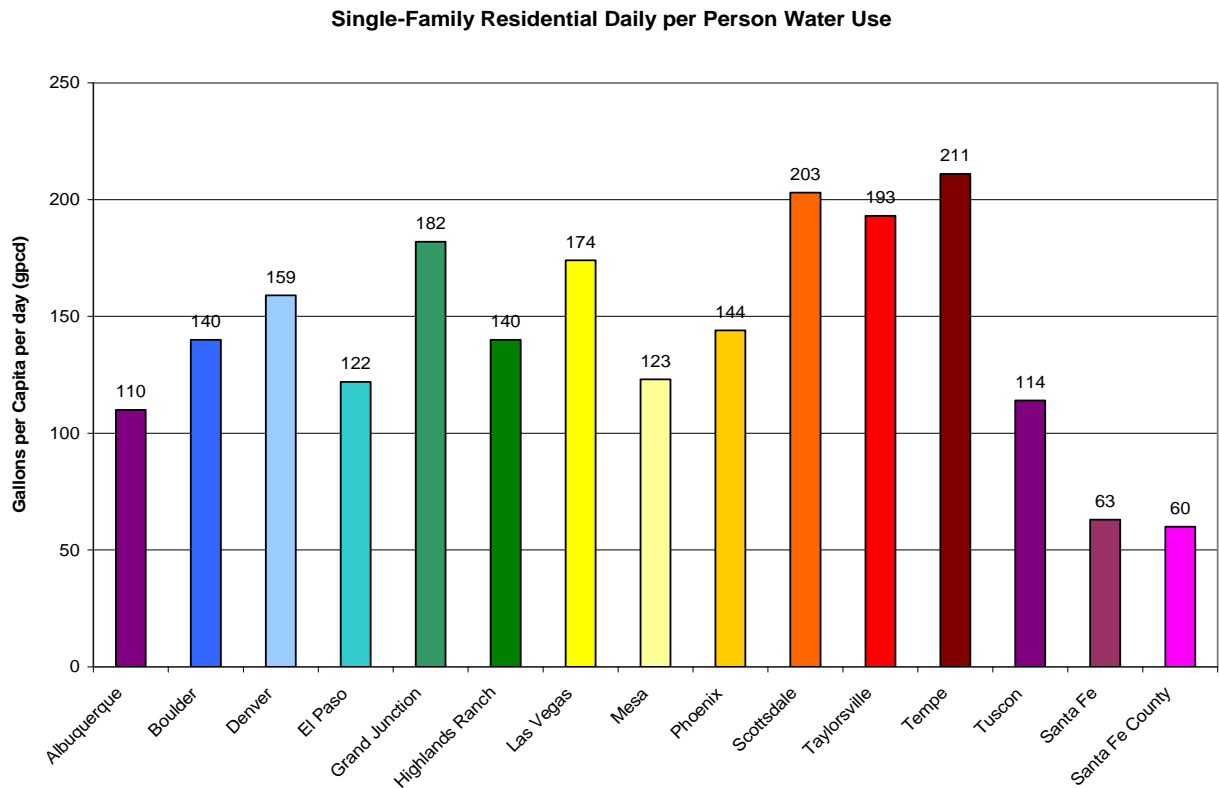
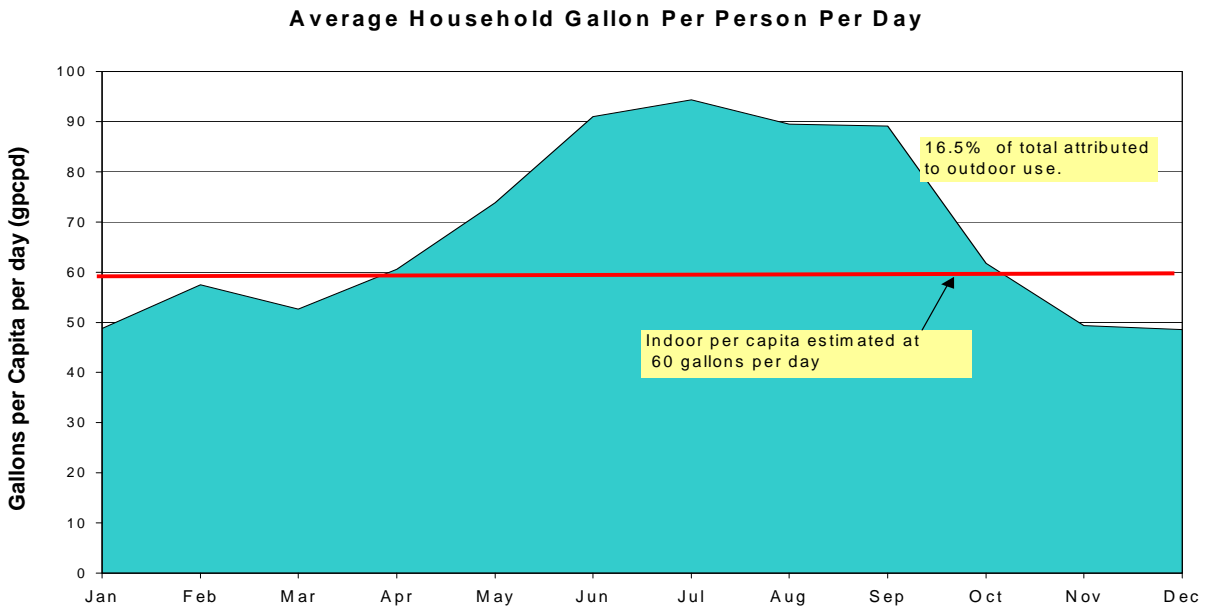


Figure 11: Average Domestic Water Use Gallons per Person per Day



F. Acequia Water Rights

It is the County's policy not to acquire water rights from active acequias or community ditches, unless required by a State Engineer permit condition, for example, to offset depletion effects on surface flows caused by groundwater pumping. The County may consider acquisition of acequia water rights where approved by Board of County Commissioners and the acequia based on a finding that the transfer will not harm the acequia.

G. Other Sources of Supply.

In order to meet customer demand over time, the County will continue to identify and acquire additional sources of supply consistent with its 40-year water planning horizon pursuant to NMSA 1978, § 72-1-9.

VI. OFFSETS ON THE RIO POJOAQUE STREAM SYSTEM

A. Overview of Strategy to Offset Effects on Pojoaque System

This Conjunctive Use Management Plan sets forth the County's planning principles and objectives for the conjunctive use of groundwater pumped by the County from the Santa Fe Basin. Although the Plan is limited to County wells located in the Santa Fe Basin, effects of pumping in the Santa Fe Basin may extend into the adjoining Nambe-Pojoaque-Tesuque (NPT) Basin and may cause depletions of stream flows there. Therefore, the County is committed to the offset strategy outlined in this Section VI to assure that surface uses are not impaired by depletion effects, if any, on the NPT Basin.

Because the thrust of this Plan is to rely on Rio Grande surface water as the primary source of supply and to use groundwater as a backup or supplemental supply, the County anticipates no or negligible depletions on the NPT surface flows. Preliminary modeling of an annual pumping average of 200 acre-feet, identified in Section V (A), reveals that effects of County pumping as proposed in this document on the Rio Tesuque, the closest NPT stream, would be small. Through careful well siting and management, the County believes it may be possible to further decrease, and perhaps avoid, any effects on this stream system.

In the event that effects cannot be avoided, the County's offset strategy relies on: (1) retiring for offset purposes existing NPT surface water rights, and (2) providing wet water offsets as required by the Aamodt Settlement Agreement. Both components are discussed below.

B. Use of NPT Surface Rights for Offsets

In general, the State Engineer will condition groundwater permits (excluding domestic well permits) to require offsets of any new or additional surface water effects in order to avoid impairment of existing surface uses. For example, a permit to appropriate groundwater under NMSA 1978, § 72-12-3 would require as a condition of approval offsets of effects on surface flows. Another and more relevant example is the transfer or change of use of an existing groundwater right under Section 72-12-7. In taking action on a ground water transfer, the State Engineer may be expected to require offsets of any increase in surface water depletions caused by the change in use.

Because the 200 afy of water rights described in Section V(A) are existing “pre-basin” rights that do not have an offset requirement, a change of use and change of points of diversion to the County water utility will likely have an immeasurable change in effect on surface flows either in the Santa Fe or NPT Basins.

To the extent that the State Engineer requires offsets for County effects on NPT surface flows, the County intends first to transfer and retire 4.49 afy of consumptive use rights adjudicated under Aamodt Subfile No. 20-10 and acquired by the County in 2005, as necessary to comply with State Engineer permit conditions. *See* Appendix A. Table 8.

C. County Obligations under the Aamodt Settlement

As also discussed in Sections VII(B) and (F), Santa Fe County is a party to the adjudication of Nambe-Pojoaque-Tesuque Basin, *New Mexico ex rel. State Engineer vs. Aamodt*, No. 66-CV-06639 MV/LCS (D. N.M.), known as the *Aamodt* case. On May 3, 2006, the County along with the Pueblos of Nambe, Pojoaque, San Ildefonso and Tesuque, the City of Santa Fe and the State of New Mexico signed the Aamodt Settlement Agreement, which will resolve Pueblo claims to basin water and protect existing uses. The agreement will not become effective until a number of conditions are met, including approval of the settlement by Congress.

Under the Settlement Agreement, both the County and City of Santa Fe agree to limit the use of water rights retirement to offset effects, as indicated in 3.5:

3.5 Municipal and County Offset Rights.

Wet water will be provided to offset surface depletion effects on the Rio Tesuque and Rio Nambé-Pojoaque of City of Santa Fe and County of Santa Fe out of Pojoaque Basin groundwater pumping. The location(s), timing, and amounts of these deliveries shall be addressed in the Cost Sharing and System Integration Agreement and shall be determined by the State, City, County, and the Pueblos; provided, however, that offset water on the Rio Tesuque must be provided to a location on Tesuque Pueblo at a time acceptable to Tesuque Pueblo. Nothing in this wet water offset mechanism shall preclude the use of existing City and County offset rights. One mechanism for providing such offsets is described in Section 9.6.5.

Section 9.6.5 of the Aamodt Settlement Agreement provides that the County may receive offset credits of up to 50 afy for delivering water to Tesuque Pueblo through the Regional Water System contemplated by the settlement. The provision further allows: “If the County or the City desire to provide additional offsets, either may cause additional water to be delivered from that portion of the Regional Water System serving Tesuque Pueblo at the time(s) and location(s) to be determined by Tesuque Pueblo or as provided in Section 3.5.”

Consequently, in order to comply with offset requirements for County effects on NPT surface flows, the County will make available wet water offsets to the extent retirement of water rights up to the maximum described in Section VI (B) is insufficient.

VII. REGIONAL COORDINATION OF CONJUNCTIVE USE

The County recognizes that its water supply, and in particular its proposed groundwater supplies, emanate from a shared regional aquifer that is closely linked to surface flows within the Santa Fe Basin, including La Cienega Creek, and possibly the Nambe-Pojoaque-Tesuque stream system. The County has entered into or negotiated agreements that call for cooperative and regional planning consistent with this conjunctive use Plan. As part of finalizing this Plan, the County will conduct public meetings and will consult with the City of Santa Fe, the Pueblos of Nambe, Pojoaque, San Ildefonso and Tesuque.

A. City of Santa Fe

The County entered into an agreement with the City providing for coordinated conjunctive use of water in the Santa Fe Basin. See Water Resources Agreement between the City of Santa Fe and the County of Santa Fe, January 11, 2005. Paragraph 8 of the Agreement provides:

Conjunctive Use and Sustainability. The City and County agree to implement conjunctive use management by relying on surface water when it is available and using groundwater only as necessary... the City and County will develop a “Comprehensive Joint Conjunctive Use and Sustainability Water Resources Strategy” that places the use of surface water as a higher priority than the use of groundwater and which manages the regional aquifer on a sustainable basis.... The strategy shall incorporate the principle that the County and the City will consult prior to the drilling of new wells in the area around the City and County independent water systems as they exist at the time of signing of this Agreement, so as to encourage cooperation, avoid conflict and avoid the impairment of City and County water rights.

The County conjunctive use Plan is formulated, in part, for the purpose of carrying out the County’s portion of the above-stated agreement between the City and the County.

B. Pueblos of Nambe, Pojoaque, San Ildefonso and Tesuque

As part of the settlement of the four Pueblos’ claims in the *Aamodt* case within the Nambe-Pojoaque-Tesuque Basin, the County has also been party to negotiated language providing for conjunctive use of surface waters with groundwater in the Santa Fe Basin. See Cost-Sharing and

System Integration Agreement, *New Mexico ex rel. State Engineer vs. Aamodt*, No. 66-CV-06639 MV/LCS (D. N.M.). Paragraph 3.6.2 of the Agreement provides:

In order to reduce and mitigate the effects of groundwater pumping by Santa Fe County on the ground and surface water supplies of the Pojoaque Basin, the County shall develop and implement, in consultation with the Pueblos, conjunctive management strategy with regard to its ground and surface water resources which (1) utilizes surface water supplies to the maximum extent feasible and in a manner which minimizes effects on the ground and surface water supplies of the Pojoaque Basin; and (2) otherwise utilizes both surface and ground water in a manner which minimizes effects on the ground and surface water supplies of the Pojoaque Basin. To that end, the County has adopted the “Santa Fe County Conjunctive Management Plan for the Santa Fe Basin.” consistent with that plan, the Parties agree that 4.49 AFY consumptive use water rights already owned by the County under Subfile 20-10 shall be deemed existing County offset rights under Section 3.5 of the Settlement Agreement and are available, subject to State Engineer approval, to offset the effects on the Rio Tesuque, Rio Nambe and Rio Pojoaque for future County pumping in the Santa Fe Basin, provided no more than 1.82 AFY of the 4.49 AFY will be used to offset effects on the Rio Tesuque.

It is the County’s intent that this Plan to fulfill its consultation obligation with the four Pueblos as provided above.

C. La Cienega

The County has also agreed to consult with La Acequia de la Cienega regarding the contents of this plan. In particular in correspondence from the County Manager to the Acequia Commission provided:

The County welcomes any comments and input from you and your organization. County staff is available to meet with you and share information regarding our proposed plans. Santa Fe County plans to propose before the end of the 2007 calendar year a Conjunctive Management Plan which will describe the County’s combined use of City wholesale water, future Buckman Direct Diversion surface water and Santa Fe basin drought groundwater supplies. County staff will commit to providing a copy of the Conjunctive Use Plan to you one (1) month before the matter is presented for action to the Board of County Commissioners so that you may provide advance comments and pose any questions.

See letter from Roman Abeyta to the Commissioners of La Acequia de la Cienega and Thomas A. Simons, IV, dated October 18, 2007

VII. CONCLUSION.

This Plan, along with the County's 40-Year Water Plan (as amended), is intended to define County Conjunctive Use Plan and Management in order to make the most efficient use of available water supplies by, in particular, relying primarily on renewable water supplies and preserving groundwater supplies for times of greatest need. This Plan will benefit County water customers by providing a more diversified and reliable supply. The approach will also benefit the Santa Fe Basin by reducing the demand on local water resources and, indeed, bringing in a substantial amount of imported water to the basin.

VIII. NEXT STEPS

Through the public meetings and consultations several water planning issues were discussed which were out of scope for this planning document. The following is a list of additional tasks and reports to be accomplished by county staff that will support the implementation of this Conjunctive Management Plan for the Santa Fe Basin:

1. Finalize 40 Year Water Plan.
2. Presentation to the BCC of a decision matrix for the location of conjunctive management wells.
3. Domestic Well Feasibility Study to determine expansion of utility lines to areas currently served by domestic wells.
4. Apply for 10 year rolling average with the Office of the State Engineer.
5. Work with City of Santa Fe to address operational issues regarding BDD water distribution and other planning issues in the basin.
6. Develop a comprehensive utility plan which incorporates supply, demand, line extension policy and rate structure.

APPENDIX A: Santa Fe County Water Rights Transfers

Table 10: Completed and Pending Transfers to the Buckman Well Field

WATER RIGHT/ OSE FILE NUMBER	QUANTITY APPLIED FOR IN TRANSFER APPLICATION	QUANTITY APPROVED FOR TRANSFER BY OSE	COMMENTS
BALDONADO (McCarthy) SD-05023 into RG-20516 et al	32.34 afa CU	32.13 afa CU* (45.90 afa DIV) on 12/13/05 (* Denied for 0.30 due to home site)	Subject to Lease Back until 12/31/08
BARRERAS (McCarthy) SD-06348 into RG-20516 et al	10.92 afa CU	10.50 afa CU* approved on 12/1/05 (*Denied for 0.42 afa structures on site)	Subject to Lease Back until 12/31/08
CHAVEZ (McCarthy) SD-06454 into RG-20516 et al	6.32 afa CU	6.13 afa CU* approved on 12/21/05 (*Denied for 0.168 afa CU)	Subject to Lease Back until 12/21/08
LEMITAR FARM SD-02810 into RG-25016 et al	71.19 afa CU	11.07 afa CU approved in 1/22/2003	No lease back
KELLY-HERKENHOFF SD-06497 into RG-20516 et al	246.79 afa CU	246.79 afa CU approved 8/15/2005	Subject to Lease Back
TWINING & WHITEHOUSE (McCarthy) SD-03179 and SD-03179-AA Into RG-25016, et al (Twining) & SD-03179-A into RG-20516 et al (Whitehouse)	84.84 afa CU	84.84 afa CU (42.42 afa approved from each tract) approved on 11/05/05	No lease back
VIGILS and VIGIL TRUST SD-05214 and SD-05215 into RG-20516 et al	134.141 afa CU	25.82 afa CU approved on 12/12/05; remainder denied	No lease back
GREER SD-03942-A into RG-20516 et al	50.085 afa CU	50.085 afa CU approved on 01/23/07	No lease back
JENKINS / BOYLAN/SIEBERT SD-06764 into RG-20516 et al	9.681 afa CU	9.387 afa CU approved on 03/12/07	Denied for 0.294 afa CU due to lack of evidence that water has been put to beneficial
Rancho Viejo RG-1811-A-C-A-B into RG-20516 et al	5.0 afa CU	5.0 afa CU	Approved 10-11-07 via settlement agreement
Rancho Viejo RG-1811-A-C-C into RG-20516 et al	5.0 afa CU	5.0 afa CU	Approved 10-11-07 via settlement agreement
Rancho Viejo RG-1811-A-C-A into RG-20516	50.0 afa CU	50.0 afa CU	Approved 10-11-07 via settlement agreement
TOTAL		536.752 afa cu	

Table 11: Completed Transfers to the Buckman Direct Diversion

WATER RIGHT/ OSE FILE NUMBER	QUANTITY APPLIED FOR IN TRANSFER APPLICATION	QUANTITY APPROVED BY OSE	COMMENTS
Santa Fe County San Juan Chama Contract SP-4842	375 afa cu	367.5 afa cu	Requires gpcpd reporting and meter plan. May be increased to 468.75 afa cu if there is adequate storage
OSO "8" INVESTMENTS LLC SD-07137 into SP-04842	93.723 afa cu	81.40 afa cu	Approved 10-24-2008
Baca-Gonzales SD-07223 & RG-37402 into SP-4842	34.80 afa cu	18.65 afa cu	Approved 11-25-2008
Total		467.55 afa CU	

Table 12: Transfers in Process to Buckman Direct Diversion

SELLER'S NAME/ OSE FILE NUMBER	QUANTITY APPLIED FOR IN TRANSFER APPLICATION	QUANTITY EXPECTED TO BE APPROVED FOR TRANSFER BY OSE	COMMENTS
BORREGO (NM Building Products, Inc.) SD-07101 into SP-04842	17.68 afa cu	17.68 afa cu	Publication completed.
JARAMILLO SD-07316 into SP-04842	4.935 afa cu	4.935 afa cu	Publication completed.
PEÑA BLANCA PARTNERSHIP SD-06920 into SP-04842	15.6137 afa cu	15.6137 afa cu	Publication completed. Protested by La Cienega.
PEÑA BLANCA PARTNERSHIP SD-02205 into SP-04842	35.253 afa cu	35.253 afa cu	Publication completed. Protested by La Cienega.
RANCHO VIEJO (La Estrada) SD-04729 into SP-04842	292.005 afa cu	292.005 afa cu	Protested Hearing Pending
SANCHEZ SD-07351 into SP-04842	9.7335 afa cu	9.7335 afa cu	Publication completed.
SUERTE DEL SUR LLC SD-06468 into SP-04842	222.768 afa cu	222.768 afa cu	Protested Hearing Pending
Total		597.9882 afa cu	

Table 13: In-Basin Transfers to County Well Field

SELLER'S NAME/ OSE FILE NUMBER	QUANTITY APPLIED FOR IN TRANSFER APPLICATION	QUANTITY EXPECTED TO BE APPROVED FOR TRANSFER BY OSE	COMMENTS
EL MONTE, INC. & THE MONTOKA IRREVOCABLE GREAT GRANDCHILDREN'S TRUST (Saharan) (RG-2644, RG-2644-X & X-2)	26 afa cu	26 afa cu	Publication completed.
GARDNER ASSOCIATES, LLC & CENTURY BANK FSB (Stagecoach Motel) (RG-28789)	5.53 afa cu	5.53 afa cu	Publication completed.
KOMIS LAND COMPANY (RG-31156)	6.09 afa cu	6.09 afa cu	Publication completed.
San Cristobal Village (RG-20379 et al)	12.0 afa cu	12.0 afa cu	
KOMIS, PETER (RG-591)	13.55 afa cu	13.55 afa cu	Publication completed.
KOMIS, PETER (Saharan) (RG-2644, RG-26344-X & X-2)	26 afa cu	26 afa cu	Publication completed.
PEARSON, ROBERT D. (RG-53-F)	3.15 afa cu	3.15 afa cu	Publication completed.
Total		92.32 afa cu	

Table 14: Other In-Basin Water Rights Owned or Pending Transfer

WATER RIGHT/ OSE FILE NUMBER	QUANTITY APPLIED FOR IN TRANSFER APPLICATION	QUANTITY EXPECTED TO BE APPROVED FOR TRANSFER BY OSE	COMMENTS
RG-590-Hagerman	190.75 afa cu	116.55 afa cu	Hearing Stayed pending adjudication of right
RG-75904 et al into RG- 22251-RG-22251-S-8	5.608 afa cu	5.608 afa cu	Hearing Stayed
Valle Vista	RG-2251	36.00*	Valle Vista
Total		158.158 afa cu	

Table 15: Top of the World Transfers to Aamodt

WATER RIGHT/ OSE FILE NUMBER	QUANTITY APPLIED FOR IN TRANSFER APPLICATION	QUANTITY EXPECTED TO BE APPROVED FOR TRANSFER BY OSE	COMMENTS
TOP OF THE WORLD I RG-1441 thru RG-1441-S-11 into RG-68622 RG-6862	588 afa cu	588 afa cu	For Aamodt Settlement

Table 16: Rights or not yet transferred

WATER RIGHT/ OSE FILE NUMBER	EXPECTED QUANTITY FOR IN TRANSFER APPLICATION	QUANTITY EXPECTED TO BE APPROVED FOR TRANSFER BY OSE	COMMENTS
Top of the World	1,164 afa cu	1,164 afa cu	For Aamodt Settlement
GREER II	67 afa cu	67 afa cu	
TURIN Aamodt Subfile No. 20-10	4.490 afa cu	4.490 afa cu	Historic Supply at
LAS LAGUNITAS	22.445 afa cu	22.445 afa cu	Water rights associated with ponds may not be transferable.
Harris- SD-06485	304.4	304.4 afa cu	Will Transfer to BDD
Snipes- OSE # not assigned	65	65 afa cu	Will Transfer to BDD
Total		1627.335 afa cu	