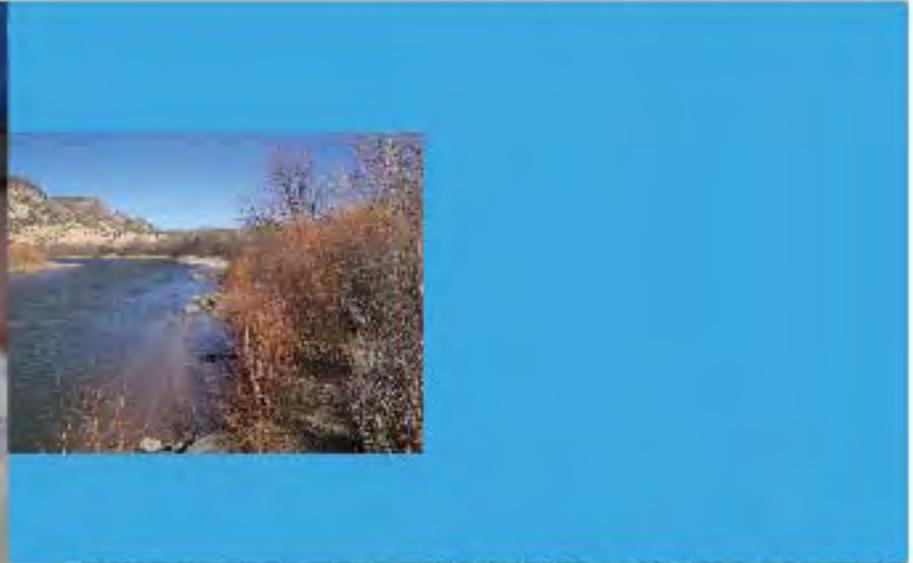




Making Progress Toward A Sustainable Drinking Water Supply

Buckman Direct Diversion Project



Inside:

- What is the Buckman Direct Diversion Project?
- Who's Responsible?
- How Will the Water be Treated?

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Who's Responsible for the Buckman Direct Diversion (BDD) Project?

The Buckman Direct Diversion (BDD) Board was created by the City of Santa Fe and Santa Fe County via a Joint Powers Agreement (JPA) to oversee the implementation and operation of the BDD project. The City of Santa Fe's Sangre de Cristo Water Division is the Project Manager for implementation and operation of the BDD through at least the year 2015.

The five-member Board includes two members of the City of Santa Fe Council (City Council) appointed by the Mayor and approved by City Council, two members of the Board of Santa Fe County Commissioners (County Commissioners) appointed by the County Commissioners, and one at-large citizen member appointed by a majority vote of the other four members of the BDD Board. Each member has one vote.

The BDD Board meets monthly, usually on the first Thursday of every month at 4 p.m. at the Santa Fe County Commission Chambers, 102 Grant Avenue. For information about upcoming meetings, contact Stephanie Trujillo, Office Manager of the City's Public Utilities Department, at (505) 955-5643 or satrujillo@ci.santa-fe.nm.us.



BDD Board Members



Consuelo Bokum
*At-Large Member,
Buckman Direct Diversion Board*
Email: bokatz@cybermesa.com

Ms. Bokum is a native of Santa Fe and a local water policy expert who has more than 15 years of water policy experience. She is the director of the Water Project, 1000 Friends of New Mexico. In 2006, she was awarded the New Mexico Earth Science Achievement Award.



Chris Calvert
City Member, Buckman Direct Diversion Board
City Councilor, District 1
505-955-6812
Email: ccalvert@santafenm.gov

Councilor Chris Calvert was elected to the City Council in 2006 and appointed to the BDD Board the same year. He has a Bachelor of Science degree in aeronautical engineering from the United States Air Force Academy in Colorado Springs, Colorado. He also has a Bachelor of Science degree in conservation and resource studies and a Master's degree in public policy from the University of California, Berkeley.



Paul Campos
*County Alternate Member,
Buckman Direct Diversion Board*
County Commissioner, District 4
505-986-6060
Email: pcampos@co.santa-fe.nm.us

Commissioner Paul Campos began his term as a District 4 Commissioner in 2001 and was re-elected in 2006. He has served as a member of the BDD Board since 2006. He is self-employed as a personal injury attorney in private practice.



Karen Heldmeyer
*City Alternate Member,
Buckman Direct Diversion Board*
City Council, District 2
505-955-6818
Email: kheld@earthlink.net

Councilor Karen Heldmeyer is in her second term of serving the residents of City Council District 2. Prior to being elected, Councilor Heldmeyer headed the Santa Fe Neighborhood Network and served on the board of the Historic Santa Fe Foundation. Councilor Heldmeyer has a Ph.D. in developmental psychology.



Harry B. Montoya
Chair, Buckman Direct Diversion Board
County Member, Buckman Direct Diversion Board
County Commissioner, District 1
505-986-6200

Email: hmontoya@co.santa-fe.nm.us
Elected in June 2002 and re-elected in 2006, Commissioner Harry Montoya is currently serving as Santa Fe County Commissioner for District 1. Commissioner Montoya is President and CEO of Hands Across Cultures Corporation and has served as President of the New Mexico School Boards Association. He has a Master of Arts degree in counseling psychology from New Mexico State University and a Bachelor of Arts degree in psychology from Westmar University.



Jack Sullivan
County Member, Buckman Direct Diversion Board
County Commissioner, District 5
505-982-4481, Ext. 3

Email: jsullivan@co.santa-fe.nm.us
Commissioner Jack Sullivan was elected to the County Commission in November 2000 and reelected in 2004. He is the president of Sullivan Design Group, Inc., an engineering consulting firm. Commissioner Sullivan is a graduate of Georgia Tech and Stanford University. He was a Captain in the United States Army, receiving the Army Airborne and Army Commendation medals for his service.



Rebecca Wurzbarger
Vice-Chair, Buckman Direct Diversion Board
City Member, Buckman Direct Diversion Board
City Councilor, District 2
505-955-6815

Email: rebeccawrz@comcast.net
Councilor Rebecca Wurzbarger represents Santa Fe City Council, District 2. She was reelected to the Council in March 2006 and is serving her second four-year term. She was a founding board member of Cornerstones Community Partnership and co-founder of Santa Fe's Habitat for Humanity Women Build Program. Councilor Wurzbarger holds a Ph.D. in Public Administration and has more than 30 years experience in strategic planning and managing complex projects. She was the recipient of the 17th Annual Governor's Award for Outstanding Women in New Mexico.

What Is the Buckman Direct Diversion Project?

And Why Do We Need It Now?

We need a supply of drinking water that is going to last. The Buckman Direct Diversion (BDD) Project will divert water from the Rio Grande, treat it, and deliver it to residents and businesses of the City of Santa Fe and Santa Fe County. Las Campanas will also receive and treat a smaller portion of the water separately for use by its residents.

The project is needed now to supplement the two sources of water we currently depend on – groundwater wells and reservoirs on the Santa Fe River. Our groundwater wells are not sustainable at current pumping levels, and our reservoirs can run out of water during a dry year.

BDD will provide a new source of water in addition to our existing supplies of surface water, and will also help our aquifer rest and recharge (refill) so that it will be here for our children, and their children. It is important to remember that even when the project becomes operational, we will need to continue to conserve water because we live in a dry climate with limited water resources.

How Will BDD Work?

Water will be diverted from the Rio Grande at a site on the east side of the river three miles below the Otowi Bridge. Some sediment, such as sand, will be removed from the water at a sediment removal facility, then the water will be conveyed in an underground pipeline pumped by two booster pumping stations. The booster pumping stations will pump water to two facilities: a new Water Treatment Plant near the Caja del Rio landfill for City of Santa Fe and Santa Fe County water customers, and a separate Las Campanas Water Treatment Plant which is not part of the City-County portion of the BDD project.

Once the water is treated, it will be pumped through new pipelines to the existing water distribution systems for the City of Santa Fe and Santa Fe County. Las Campanas will convey its treated water to its customers.

The BDD Project also includes improvements to Buckman Road to make it safer for BDD project operation and maintenance.

When Will BDD Be Operational?

BDD is expected to be on-line in 2010. By 2020, as demand increases, the project is expected to take nearly three billion gallons of water a year from the river.

How Much Will It Cost?

The estimated \$171 million project will be paid for by all three partners. The City of Santa Fe will provide City funds backed by City gross receipts taxes and water revenue bonds. Santa Fe County will fund its share of the project through general obligation



A view of the Rio Grande looking north from the BDD diversion site.



A map of the Buckman Direct Diversion Project.

bonds and gross receipts tax revenue bonds. Las Campanas will fund its share of the project on a cash basis. Water rate increases may also be necessary; however, the City and County are aggressively pursuing state and federal funding assistance.



Using Our Water Resources Wisely

City of Santa Fe and Santa Fe County leaders are building a mix of water supply sources that will ensure we can meet current and future water demands. An important part of the water supply portfolio is the Buckman Direct Diversion (BDD) Project.

The BDD will allow for use of all of our water sources—the Santa Fe River, the underground aquifer and the Rio Grande surface water diverted and treated by the BDD Project.

Santa Fe River/Watershed (Runoff)

Precipitation (rain or snow) falls in the Sangre de Cristo Mountains, creating runoff to lower elevations. Runoff water is stored in reservoirs so that it is available to meet water demands throughout the year. The City of Santa Fe owns and operates two reservoirs in the Santa Fe watershed. The water stored in these reservoirs is treated to meet drinking water standards at the Canyon Road Treatment Plant.

The amount of surface water runoff in the upper Santa Fe River watershed varies greatly from year to year depending on levels of precipitation, snow pack, and other weather factors. The actual annual runoff produced in the watershed is often less than our water rights entitle us to use. In other years, the watershed produces more than the City’s water rights holdings.

Underground Aquifer

The City of Santa Fe and Santa Fe County are on top of a major aquifer that provides water through wells located in the City well field and in the Buckman well field. Aquifers are rock layers that are saturated with water; they are a natural underground storage area for water. As our area grows, we are actually taking more water out of the aquifer than is being put back in. By using different sources of water under different conditions, we can allow the aquifer to “rest” and recharge as much as possible.



Crews work on a well under construction at the Buckman well field.

Helping Us Save for Dry Days

The BDD Project will allow us to concentrate on developing renewable surface water (water that can be replaced) and pumping less water from the aquifer. We will be able to use all of our water sources so we can rely primarily on surface water supplies to meet baseline (usual) water needs in wet years, and preserve the aquifer for principal use as a drought reserve in dry years.

Water Source	Challenges	When We’ll Use This Water
Santa Fe River/ Watershed (precipitation)	<i>The amount of water is not dependable because precipitation varies from year to year</i>	Will continue to use, particularly when reservoir amounts are adequate, but we will always need to conserve water
Underground aquifer	<i>We are probably taking more out of the aquifer than is being put back in. Current use exceeds recharge</i>	Will intend to use primarily during dry periods and, if needed, during peak water demand
BDD Project	<i>We need to efficiently divert, treat and deliver surface water to customers</i>	Will primarily use to meet “normal” needs starting in 2010

Improving Our Existing Water Resources

In addition to the BDD Project, other important actions are being undertaken to stabilize and enhance our water supply. These water supply sources and the well fields help meet the water demands of the City and the County.

Water Distribution Infrastructure Improvements

Improvements are underway to provide enough water pressure for firefighting and domestic flows throughout the area. Older water mains and service lines are being replaced or repaired, reducing the loss of water and costly street and property damage.

Canyon Road Water Treatment Plant Upgrades

A multiyear program is underway to bring the Canyon Road Water Treatment Plant back to its design capacity. Major process upgrades totaling nearly \$10 million are being put in place over several years. These upgrades will help meet peak summer water demands and make the most of water from the Santa Fe River watershed.

Santa Fe River Watershed Forest Management

A multi-year vegetation management project in the upper Santa Fe River watershed is cutting the risk of reduced water supply due to forest fires in the watershed. Management of plants, grasses, shrubs, and trees has been completed on more than 4,500 acres in the watershed. By managing what type of vegetation we have in the watershed and providing the widest variety possible, we can also improve wildlife habitats in this area.

How We Get and Use Our Water

A Track Record of Conservation

Santa Fe water users are among the most conservative in the country. In fact, we have cut our average water use per day by about 40 percent in the last 10 years.

Even with aggressive conservation and City of Santa Fe and Santa Fe county efforts to upgrade treatment plants, pipelines and other parts of the water delivery system to make it more efficient, water planners expect our sustainable supply to start falling short of demand in the next 10 years. The BDD helps us prepare for future water needs by creating an infrastructure that allows us to make the best use of existing resources now and incorporate new water resources in the future.

Constraints on Current Water Supplies

The City water system, which currently also supplies water to the County water system and Las Campanas, draws water from three sources: McClure and Nichols reservoirs on the Santa Fe River, the City well field inside the city limits, and the Buckman well field near the Rio Grande, north west of the City. The amount of water from each of the sources is limited, which makes the BDD necessary. The amount of water available from the reservoirs depends on runoff, which varies widely from year to year. When reservoir water falls short, more water has to come from the City and Buckman well fields to meet demand. A more important limitation in the long run is the impact of heavy pumping on the aquifer under Santa Fe, an interconnected aquifer of the Española Basin. This basin serves thousands of individual well owners in addition to local water systems. Groundwater levels near the City and Buckman well fields have dropped in recent years.

Relationship Between the BDD and Water Sources

The BDD's initial permitted capacity will be 8,730 acre feet annually, with 5,230 acre feet allotted to the City, 1,700 acre feet to the County, and 1,800 acre feet to Las Campanas. An acre foot is the amount of water needed to cover an acre of land to a depth of one foot. Water rights are required to divert "wet" water through the BDD. Each partner is responsible

for obtaining its own water rights and getting permission from the State Engineer to have these rights diverted through the BDD. The State Engineer has already approved diversion through the BDD of the San Juan-Chama (SJC) water allocated to the City and County. SJC water comes from the headwaters of the San Juan River in southern Colorado, travels through the mountains and tunnels to Heron Lake, and flows into the Rio Chama, which in turn carries it to the Rio Grande.

The 5,605 acre feet of SJC water (of which 5,230 acre feet is allocated to the City, and 375 acre feet to the County) represents 64 percent of BDD capacity. The remaining 36 percent of rights needed for the BDD to reach its full capacity will come from other water rights already held by or to be acquired by the County and Las Campanas in the future. Water rights totaling an additional 13 percent have already been transferred at the Buckman well field by Las Campanas and the County. The County and Las Campanas have also applied to the State Engineer to transfer water rights totaling six percent of BDD capacity either directly to the BDD, or have them parked at the Buckman well field for later transfer. The remaining 17 percent of BDD capacity would need to be filled by other water rights.

Current Water Systems

In 2006, the City system delivered 9,239 acre feet to its own customers, 348 acre feet to the County water system, and 521 acre feet of potable (drinkable) water to Las Campanas. In the last six years, the annual supply from the Santa Fe River reservoirs has been as high as

5,040 acre feet in 2005, and as low as 750 acre feet in 2002. Water rights in the City well field are 3,585 acre feet in years when the Northwest well is pumped. Water rights in the Buckman well field total 10,000 acre feet, but historical pumping amounts have been much less due to a variety of constraints.

Post-BDD Water System

When the BDD becomes operational, the City water system will continue to provide 500 acre feet annually to the County water system under the City-County Water Resources Agreement. In addition to the water drawn from the City system, the County will divert as much as 1,700 acre feet annually from the BDD, provided adequate water rights have been transferred to the BDD. The County will also draw water from the Santa Fe Basin wells. Las Campanas will obtain all its drinkable water from the BDD.

Water Rights Used as Offsets

Not all of the Rio Grande water rights and San Juan-Chama water rights held by the partners will be used for diversion through the BDD. Some rights will be needed to offset the effects of pumping at the Buckman well field on the natural flow of the Rio Grande, because it reduces the saturation under the river. Rio Grande water rights and SJC water rights are currently being used to offset this reduction in river flow, and will continue to be needed in the future. Even if Buckman well field



A view of the Rio Grande looking north near the proposed site of the BDD Diversion Facility.

pumping were to end immediately when the BDD begins operations, some water would still be needed to offset the residual impact on past pumping of the Rio Grande.

Pumping at the Buckman well field also reduces flows in two tributaries of the Rio Grande—the Rio Pojoaque and Tesuque. These reductions are offset by water rights on these tributaries owned by the City and Las Campanas. These tributary rights are scarce and expensive. One advantage of taking water directly from the Rio Grande through the BDD is that it will not have impacts on the tributaries.

How Will the Water Be Treated?

To choose the best way to treat the water diverted from the Rio Grande so that it meets all federal and state drinking water standards, the BDD team conducted a Surface Water Treatment testing program from April - October 2005. This time period allowed testing of the water during different seasons and conditions (runoff from winter snow, spring rains, summer monsoons, etc.). A pilot treatment facility evaluated many different processes and chemicals. Through this testing program, many evaluations, tours of other treatment plants, and workshops, the team identified the best treatment process choice. The issues included:

Level of disinfection – Different waters have different levels of biological contaminants such as *Cryptosporidium* and *Giardia*, which can cause health problems for people and animals. The level of disinfection required is based on the level of biological contaminants.

Ingredients needed to produce good tasting, odorless drinking water – Also explored were ingredients needed to counteract natural organic matter (NOM), synthetic organic contaminants (SOCs) and algae that can contribute to taste and odor in drinking water.

Contaminants treatment process should remove – The treatment process will need to remove contaminants, which could include things such as turbidity (cloudiness), larger sediments, color, aluminum, iron, manganese, and nitrate.

Organics treatment process must remove – Total Organic Carbon (TOC) can cause unwanted Disinfection Byproducts (DBPs) if not removed. The selected treatment process (see right) consists of sedimentation basins and membrane filters to remove the majority of TOC. To further reduce the TOC level, ozone is used to oxidize the remaining dissolved organics into Assimilable Organic Carbon (AOC). The AOC is then consumed in the Granular Activated Carbon (GAC) contactors through biological and adsorption processes. The membranes, ozone and GAC contactors also serve other valuable functions in the water treatment process.

Pretreatment needed to remove fine solids from the water – River water contains a lot of grit, silt and other solid particles. Removing these solids near the river will minimize wear and tear on pumping and treatment equipment.

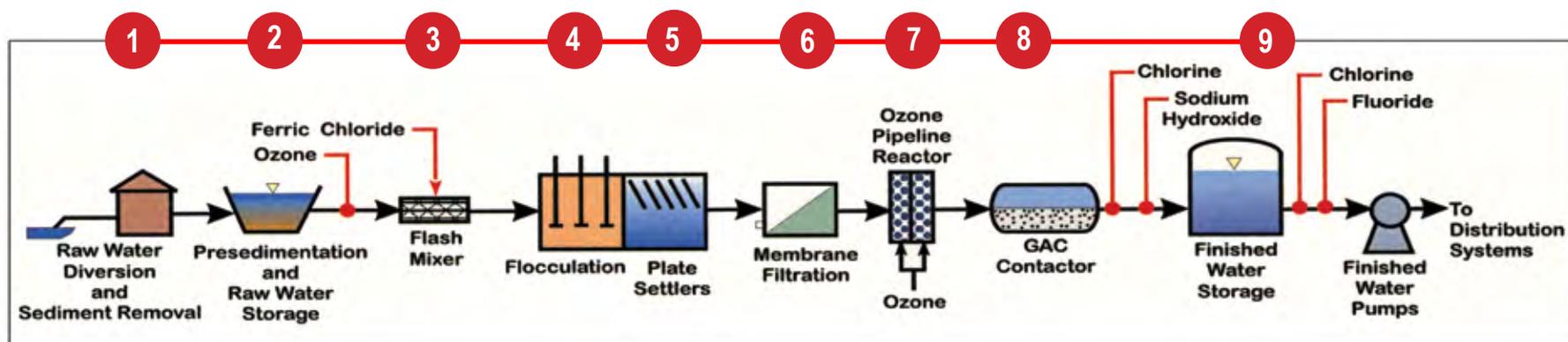
Selected Treatment Process

The treatment process selected for the City of Santa Fe/Santa Fe County Water Treatment Plant is a combination of **Membrane Filtration System with Ozone and Granular Activated Carbon (GAC) Contactors**. This process will reliably produce high-quality drinking water without the operational concerns of other processes. This choice will provide good value through capital costs and was the most reliable, prudent, and robust of all options considered. The system includes:

- 1. Diversion, Sediment Removal and Pumping** – River water will be diverted from the Rio Grande through a five-bay, reinforced concrete structure with fish screens and cleaning systems. After the larger sand and grit particles are removed, the raw water will be pumped through two booster stations approximately 11 miles to the Water Treatment Plant.
- 2. Presedimentation and Raw Water Storage** – Two gunite-lined earthen basins will allow larger particles to settle to the bottom for removal. These basins, and a third basin, will allow for splitting and storage of a significant

amount of raw water as well as blending of the water to smooth out water quality.

- 3. Coagulation** – A flash mix system will be used to mix a metal salt (ferric chloride) with the raw water so that particles and organic materials can be removed in later treatment processes. This process is enhanced by the addition of ozone, a strong oxidizer.
- 4. Flocculation** – Flocculation basins will use mixers in a three-stage process to combine coagulated particles into a larger, heavier material called “floc” that is easier to settle.
- 5. Sedimentation with Plate Settlers** – Settling of heavy “floc” will occur in concrete basins to remove most of the remaining solids and organic material, which will then be dewatered and moved off-site for disposal.
- 6. Membrane Filtration** – The Membrane Filtration (MF) system will remove the remaining small suspended solids and biological elements. Under pressure, the MF will remove any *Giardia*, *Cryptosporidium*, bacteria, protozoa and suspended solids by filtering water through extremely small pores in the walls of hollow fiber membranes.
- 7. Ozone Generation and Contacting** – Remaining organic material will be oxidized with ozone for removal in the downstream GAC Contactors. This process greatly reduces formation of byproducts from downstream disinfection of the water. The ozone also oxidizes taste- and odor-causing compounds to improve the water.
- 8. GAC Contactors** – The next step in the water treatment process is to force the water through tanks containing granular activated carbon (GAC). The oxidized organic materials and other compounds are absorbed onto the GAC to “polish” the drinking water.
- 9. Final Treatment Steps** – After it is treated and chlorine is added to it, the water will be stored in two tanks at the Water Treatment Plant. Sodium hypochlorite (chlorine) will again be added to the water as it is pumped through two pump stations into the distribution systems. The chlorine provides further disinfection of the water and helps it remain safe in the distribution systems.



How Will the Buckman Direct Diversion Project Be Built?

Choosing Design-Build (DB)

A Design-Build (DB) project delivery approach was chosen to encourage innovation and creativity in design of the BDD project, shorten the design/construction schedule, reduce administrative burdens, and allocate risk appropriately among the City of Santa Fe, Santa Fe County, Las Campanas, and the DB contractor.

CDM was chosen as Owners' Consultant (OC) to develop a process and implementation plan for the BDD. CDM prepared a Preliminary Design Report (PDR) to serve as a reference document for the project. A PDR provides the City of Santa Fe and Santa Fe County with a realistic idea of what the project will cost and what risks are involved. The PDR also spells out the quality goals, schedule, and objectives. As OC, CDM has completed the preliminary project design.

Selection Process

Selecting a DB team for the BDD includes two steps. **Step 1**, a Request for Qualifications, was completed in June 2006. Three teams were identified as meeting the qualifications needed to bid on the BDD. **Step 2**, the Request for Proposals, was issued in spring 2007. Teams were given approximately 120 days to prepare their proposals. A Selection Committee will evaluate the proposals. Contract negotiations will be initiated with the top-ranked proposer. Following successful contract negotiations, a final DB Contract will be submitted to the BDD Board for award. Construction is expected to begin in early 2008.



The BDD includes improvements to Buckman Road, shown here as it is now.



Architect's rendering of Administration Building at BDD Water Treatment Plant.

What's Involved in the BDD?

- 1) **Diversion Structure** – will be a low-profile, on-stream, bank-side intake structure with fish screens.
- 2) **Raw Water Lift Station** – will house raw water pumps and equipment. The pump building will be constructed below grade and covered over with soil and native plant materials to blend into the surrounding landscape. The mechanical and electrical equipment building will be above grade with two sides and the roof covered by soil and plantings. The exposed walls will face away from the White Rock Overlook and the river to be less visible.
- 3) **Sediment Removal Facility** – will have cast-in-place concrete or pre-stressed concrete basins or reservoirs. Buildings will have masonry walls and steel roofs in colors to complement the surrounding landscape.
- 4) **Raw Water Pipelines** – in general, will be buried in the existing alignment of Buckman Road and will range from 20 inches to 30 inches in diameter.
- 5) **Booster Stations 1A and 2A** – will use vertical turbine type pumps. The interior walls and ceilings of the pump houses will have sound muffling to minimize sound from the pumps. They will be made of reinforced concrete slabs and walls. The new booster stations will look similar to the Buckman well field buildings along Buckman Road.
- 6) **Water Treatment Plant** – will feature buildings designed in New Mexico Territorial style with low-slope roofs capped with clay brick, exterior walls in a light tan, wood trim around windows, and wood post-and-beam supports for covered porches and recessed entries.
- 7) **Finished Water Pipelines** – will be buried underground and will range from 16 inches in diameter to 30 inches in diameter. There are four pipeline segments generally named for the roadway the pipeline follows: 1) the BS4A Potable Water Pipeline; 2) the Caja Del Rio Potable Water Pipeline; 3) the NM 599 Potable Water Pipeline; and 4) the South Meadows Road Potable Water Pipeline.
- 8) **Improvements to Buckman Road** – since access to portions of the BDD project facilities will be provided by the existing County Road 77 (Buckman Road and Camino La Tierra), some improvements will be made to about 6.5 miles of the road to make it safer for operation and maintenance vehicles to travel. Roadway upgrades will include widening horizontal curves, reducing vertical grades, adding a gravel base to the road's current hard-packed surface, and drainage improvements in some areas.

The DB team will develop a construction staging schedule that details when and how each of these facilities will be built. Construction impacts to the public are expected to be minimal, because most of the pipeline is being laid in existing utility corridors and public rights-of-way and the facilities are being constructed in non-residential and non-business areas. After the project is constructed, all facilities will have a one- to two-year warranty from the contractor.

Lessening Environmental Impacts

Every aspect of the Buckman Direct Diversion (BDD) Project comes with its own permitting process. It's a mountain of research, communication, and paperwork designed to ensure that people, animals, plants, air, water, and quality of life are protected now and in the future.

Environmental Impact Statement

The permit most familiar to the public is the Environmental Impact Statement (EIS). An EIS must be filed by any federal agency for a major project planned on federal land or requiring major federal action. Both the U.S. Forest Service and Bureau of Land Management are involved in the BDD project as "lead agencies."

The environmental study process started with collecting information on the purpose and need for the proposed project. The public and interested groups were invited to comment on the scope of environmental study. This "scoping" step was intended to seek out and understand any concerns the public may have about the project. The results of the scoping step were used to focus the EIS on the issues of most concern to the public.

The Forest Service and Bureau of Land Management notified the public and held scoping meetings and field trips for the Buckman environmental impact statement in July 2002. A process called consultation has also been completed. In the case of the BDD, consultation involved consulting with federal agencies such as the U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service and U.S. Bureau of Reclamation. State agencies including the New Mexico Environment Department, New Mexico Department of Game and Fish, and the New Mexico Department of Cultural Affairs were consulted. Pueblos were also consulted.

The next step included gathering data on all possible ways the project could affect the environment and developing alternatives to the project, along with an assessment of the possible social, economic and environmental effects of the project and the alternatives. All of that information, along with plans for avoiding or minimizing harm to the environment, were put into a Draft Environmental Impact Statement for review by the public. The Buckman draft report was issued in December 2004 along with a 60-day period for public comments.

The Final Environmental Impact Statement includes the preferred alternatives and responses to any issues raised by the public and agencies that consulted on the project. The Forest Service and Bureau of Land Management will issue a joint Record of Decision (ROD) that describes the decision the agencies have made based on the information provided in the EIS. The Record of Decision does not go into effect for 30 days after it is issued to provide an opportunity to appeal, or challenge, the decision. The Final Environmental Impact Statement and Record of Decision for the Buckman Direct Diversion Project are expected to be released this summer.

The preliminary environmental impact study found that for a project of this size and complexity, the BDD is expected to have only a mild, very minor effect on the environment.



BDD Project facilities have been designed to lessen their impact on local scenery and the view from White Rock Overlook.

The study identified a temporary impact on the Las Campanas community during construction of the pipeline but noted the pipeline is to be built in existing utility easements, minimizing its impact. The impact of power lines will be minimized by putting them underground, and a power substation is planned for a spot next to an existing buried power line in a utility corridor along Caja del Rio Road.

The study pointed out that the facilities will be partially visible from the White

Rock Overlook with an impact on scenery; however, the facilities are being located and constructed to minimize their visibility and are designed to blend in with natural surroundings.

To minimize the impact on river life, diversion of river water would be restricted or eliminated if the river drops below a certain level. The diversion facility will include fish screens to prevent fish from entering the diversion structure.

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Lessening Environmental Impacts

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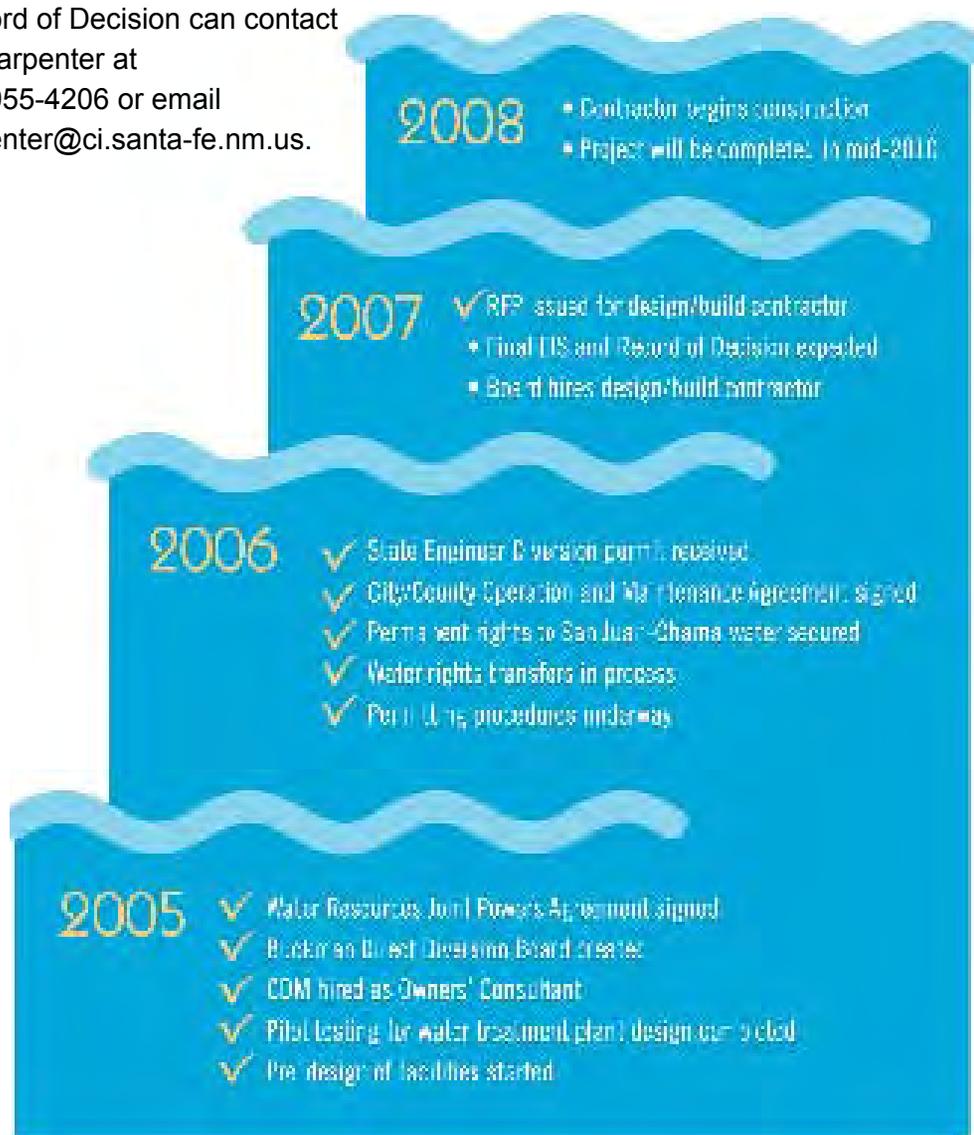
Other Permits Needed

In addition to a Record of Decision from the Forest Service and Bureau of Land Management to authorize the project, the project planners must obtain some 30 other permits before the project can proceed. These permits range from permission to build arroyo crossings from the U.S. Army Corps of Engineers to permission to divert the water from the Office of the State Engineer. Other needed permits cover sediment discharge, rights of way, archaeological sites, native plants, habitat loss, and water quality and involve about 12 state and federal agencies and numerous private parties.



The Rio Grande after rain. One of the challenges of the BDD will be removing varying levels of cloudiness from the water diverted from the river.

Anyone who would like a copy of the final Environmental Impact Statement once it is published as a Record of Decision can contact Rick Carpenter at (505) 955-4206 or email rrcarpenter@ci.santa-fe.nm.us.



BDD timeline and progress to date.

Major BDD Project Elements at a Glance

Facilities to be Owned and Operated by City of Santa Fe and Santa Fe County

Raw Water Pipeline – approximately 11 miles of 30-inch diameter pipe to the new Water Treatment Plant

Water Treatment Plant (WTP) – 15 million gallons per day peak capacity

Treated Water Storage at WTP – 8 million gallons

Treated Water Pump Stations – 8.9 and 10 million gallons per day peak capacity, respectively

Treated Water Pipeline to Northern Connection at Existing Buckman Pipeline – approximately 4.5 miles of 30-inch diameter pipe

Treated Water Pipelines to City/County Southern Connections – approximately 5 miles of 24-inch diameter pipe and 5 miles of 16-inch diameter pipe

Facilities to be Shared by City of Santa Fe, Santa Fe County, and Las Campanas

River Diversion Facility – 18.3 million gallons per day peak capacity

Raw Water Pump Station – 18.3 million gallons per day peak capacity

Sedimentation Separation Facility – 18.3 million gallons per day peak capacity

Raw Water Booster Pump Stations (2) – 18.3 million gallons per day peak capacity

Buckman Road Modifications – approximately 6.5 miles of improvements

Related Facilities and Projects

PNM – new power transmission facilities including a new substation and upgrades to the Buckman substation

Storage Tank – 4 million gallon storage tank with pipelines and chemical feed facilities

Frequently Asked Questions About the BDD

Q: Why do we need the BDD?

A: Right now, our drinking water comes from either groundwater in our aquifer or Santa Fe River water in our reservoirs. We rely more and more on water from the aquifer because our reservoirs can run dry depending on how much rain or snow we get each year. The aquifer has no time to rest and is possibly being drained faster than it can refill. The reservoir that stores our Santa Fe River water could easily run dry during a drought, and may not even have enough water during a “normal” year to allow the City to take its full 5,040 acre feet of water rights. By having more surface water, we will be able to use aquifer water during dry times and surface water during wet times.

Q: Why is it called the Buckman Direct Diversion project?

A: During the early stages of the project, numerous water supply and treatment alternatives were investigated. The alternative selected for directly diverting Rio Grande surface water near the Old Buckman town site became the BDD project.

Q: Isn't the BDD about having water for new growth?

A: Not really. The BDD is designed to provide a reliable source of water that we can count on. In normal years, we will use BDD water in addition to our reservoir water to give our underground aquifer a chance to rest and recharge. In dry years, when river water and reservoir water are low, we will be able to use our underground aquifer water without damaging the aquifer. One important thing to know is that we will continue to need to look for additional sources of water as our City and County grow.

Q: Who will own the BDD?

A: The project is a joint effort between the City of Santa Fe and Santa Fe County in partnership with Las Campanas, LLC. The City and County will own the BDD, including the diversion facility, water treatment plant and raw water and finished water pipelines. Las Campanas will build and own a separate water treatment plant for its residents. The BDD is governed by a Board consisting of members of the Santa Fe City Council, the Santa Fe County Commission and the public (see page 1).

Q: How much water will there be?

A: The BDD has the capacity to divert and treat as much as 3 billion gallons of water per year from the river. About two gallons out of every 10 gallons diverted will go to Las Campanas. The City and County will use varying amounts of water – up to 6.2 million gallons a day – based on weather conditions, the amount of water available from the reservoirs, and the need to allow the underground aquifer to rest and recharge (refill).

Q: Who will pay for the BDD and how much will it cost?

A: All three entities – the City, the County, and Las Campanas – will pay a share of the estimated \$171 million project. The City of Santa Fe will provide City funds backed by City gross receipt taxes and water revenue bonds. Santa Fe County will fund its share of the project through general obligation bonds and gross receipts tax revenue bonds. Las Campanas will fund its share of the project on a cash basis. The BDD Board is seeking state and federal grants; however, water rate increases may also be necessary.

Q: Where will the BDD be located?

A: The BDD diversion will be about 15 miles northwest of the City of Santa Fe, about 3 miles downstream from where Route 4 crosses the Rio Grande at Otowi Bridge. It will be located on the east bank of the Rio Grande, near the historic Buckman townsite. The new City and County Water Treatment Plant will be on Bureau of Land Management land located just west of Caja del Rio Road. The land is leased to the City of Santa Fe.

Q: What effects will the BDD have on the environment?

A: Extensive research was done as part of the BDD's Environmental Impact Study. All buildings for the project will be designed to blend in with the surrounding landscape and to affect any views as little as possible. Any vegetation displaced by construction will be replanted with native plants. The actual diversion of water will include a fish screen to keep fish safe. Steps will be taken throughout the construction to preserve any archaeological finds as well as the historic Buckman town site.

Q: Will the BDD water really be safe to drink?

A: Yes. The water will be treated to meet all state and federal standards for drinking water and there will be processes in place to remove biological and chemical contaminants such as sediment (sand), turbidity (cloudiness), bacteria, and potential contaminants such as *Giardia* and *Cryptosporidium*, which can cause health problems in people and animals.

Q: When will we be drinking BDD water?

A: The project is expected to be fully operational by mid 2010.

Q: Will I be impacted by construction?

A: Probably not. Most of the pipelines are being laid in utility rights-of-ways, along residential streets or business corridors, so there should be minimal disruption. Also, the location of the diversion facility, northwest of the City, and the water treatment plant, near Caja del Rio Road, are not expected to greatly impact traffic.

Q: If we are leading the nation in water conservation, why would our rates go up?

A: Conservation is an important part of a water resources strategy, but it is not enough. The BDD is needed to supply an additional source of water for now and for future generations, and it will cost money. Rate increases may be necessary to fund this project, but City and County government officials will impose them only if needed.

Q: Who will receive the water from the BDD?

A: The water from the BDD will be distributed to residents and businesses that are customers of the City of Santa Fe and Santa Fe County water systems. Las Campanas will also treat and deliver water to its residents.



Do You Have a Question That Has Not Been Answered?

If so, please contact:

Buckman Direct Diversion Project Manager

Rick Carpenter 505-955-4206
rrcarpenter@santafenm.gov

Whom Do I Call to Request a Presentation on the BDD?

Lynn Komer..... 505-660-7682
lynn@nm.net

Patti Watson..... 1-800-687-3417
pattiw@cooneywatson.com

Whom Do I Call With Questions About Water Bills and Services?

City of Santa Fe Sangre de Cristo Water Division
www.santafenm.gov/waterwise/index.asp

Customer Service 505-955-4333
 Water Conservation Hotline..... 505-955-4225
 Water Violations Hotline 505-955-4222
 After Hours Emergency 505-955-4300

Santa Fe County Water Resources Department
www.co.santa-fe.nm.us/departments/water_resources/index.php

Customer Service 505-992-9870
 After Hours Emergency 1-866-885-6623

Other Resources:

New Mexico Environment Department
Ground Water Quality Bureau 505-827-2918
www.nmenv.state.nm.us/gwb/gwgbhome.html

Drinking Water Bureau
Water Assessments..... 1-877-654-8720
www.nmenv.state.nm.us/dwb/dwbtop.html

Office of the State Engineer
Water Conservation Program..... 1-800-WATER-NM
 (1-800-928-3766)
www.waternm@seo.state.nm.us

Environmental Protection Agency
United States Water Quality
(All Aspects)..... 1-800-426-4791
www.epa.gov/safewater

New Mexico State Land Office
www.nmstatelands.org

For Children and Teachers
Water Festival in New Mexico..... 505-975-0036
www.waterfestnm.com

Environmental Protection Agency
www.epa.gov/safewater/kids

New Mexico State Land Office
Educational Outreach
Education Coordinator..... 505-827-5096



Three-dimensional simulation of Raw Water Lift Station, looking from above towards the river



Three-dimensional simulation of the Administration Building at the Water Treatment Plant.



Buckman Direct Diversion Project

For more information, call the BDD Project Manager,
Rick Carpenter at 505-955-4206, rrcarpenter@ci.santa-fe.nm.us

City of Santa Fe

City of Santa Fe



New Mexico

The City of Santa Fe is paying 50 percent of the capital construction costs of the Buckman Direct Diversion Project and will pay a proportional share of annual operating costs when the project comes on line in 2010. Two City Councilors serve on the BDD Governing Board. Under a Project Management and Fiscal Services Contract, the City will act as Project Manager for delivery of the BDD Project and will be responsible for day-to-day management and related fiscal activities through at least the year 2015. Any grant money received will be applied to overall project costs before apportioning the remaining costs to the City and County.

Santa Fe County



Santa Fe County is paying 50 percent of the capital construction costs of the Buckman Direct Diversion Project and will pay its proportional share of annual operating costs when the project comes on line in 2010. Santa Fe County serves the unincorporated areas of the County. Two County Commissioners serve on the BDD Governing Board. Any grant money received will be applied to overall project costs before apportioning the remaining costs to the City and County.

Las Campanas

LAS CAMPANAS



SANTA FE

The Heart of Leadership

Las Campanas is a partner in the project, and is funding its proportional share of the costs of building and operating the BDD. Las Campanas will build its own booster pump station and water treatment plant, which are not part of the BDD. Las Campanas is a master-planned community located on 4,700 acres just outside Santa Fe.