
PROVIDING FOR SANTA FE BASIN'S FUTURE WATER SUPPLIES NEEDS: A FEASIBILITY STUDY TO OPTIMIZE THE USE OF REGIONAL RECLAIMED WASTEWATER

TECHNICAL PROPOSAL AND EVALUATION CRITERIA



CITY AND COUNTY OF SANTA FE, NEW MEXICO

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Technical Proposal and Evaluation Criteria

EXECUTIVE SUMMARY

Date: May 2, 2014

Applicant Name: City and County of Santa Fe, New Mexico

City, County, and State: City of Santa Fe, County of Santa Fe, New Mexico

The City and County of Santa Fe, New Mexico are collaborating on developing greater resiliency and diversity in their water portfolios. Recent studies have demonstrated that the current water supply is vulnerable to uncontrolled factors which include drought, fire, environmental regulations, and water quality limits. In response, a reclaimed wastewater plan was developed that contains a multitude of alternatives for more effectively using reclaimed wastewater. These alternatives include both potable and non-potable applications which are designed to augment water supply while enhancing environmental conditions. The plan recommended that an engineering feasibility and cost benefit analysis be conducted to identify which combination of alternatives will be most effective at increasing water supply, improving water quality, caretaking the stream environment and allowing traditional uses. The City and County propose to conduct a focused feasibility study to determine the technical implementation potential of expanding reclaimed water use to include: (1) direct potable use which can be achieved by transferring the reclaimed water to their co-owned, advance technology water treatment plant; (2) aquifer storage and recovery which can be incorporated by conveying the reclaimed water to the Upper Santa Fe River to promote infiltration to the underlying Aquifer for later extraction (drought reserve) by City Well Field, and (3) expanding non-potable uses of water and develop a more viable cost structure for applying the reclaimed water to planned parks, soccer fields and other irrigation purposes.

Project Timeline

The City and County have the resources in place to conduct a rigorous feasibility study and have the backing of local community and Council to develop their wastewater into a more valuable water resource. This project is a regional priority and completion of the Feasibility Study will be completed within 18 months of the award.

TECHNICAL STUDY DESCRIPTION

Santa Fe, NM is located in the high-elevation desert near the Southern end of the Rocky Mountains. The surface water supply in the area is highly variable and the aquifers are slow to recharge, but population continues to grow and the needs of the community continue to expand. In response to these conditions, the City of Santa Fe (City) has been working for a more resilient, sustainable, and innovative water supply system for many years through diversification and conservation. Starting with drought conditions experienced in 1996, and continuing since that time through subsequent droughts in 2000, 2002, and from 2011 to the present, the City and Santa Fe County (County) have partnered in the construction and operation of the Buckman Direct Diversion (BDD), a surface water diversion project. BDD improves the overall supply reliability and reduces regional dependency on groundwater, while serving as a testing ground and a model for regional collaborative water resource management.



Current long-range, basin-scale planning efforts underway by the City and County are designed to address real-world scenarios, such as climate change and catastrophic fire impacts, to assess viable options to fill the projected future water supply gap¹ The Santa Fe basin study identified existing vulnerabilities in the supply and pinpointed adaption alternatives to address these system weaknesses and to ensure a more resilient water supply to meet 40-year water demand projections. One of the primary adaption alternatives recommends to “*augment potable water supplies with reclaimed wastewater.*”² This study and the Reclaimed Wastewater Reuse Plan for the City of Santa Fe³ (RWRP) identify potential alternatives to utilizing reclaimed water as a supply source and also helped the City to identify potential reclaimed water customers, many of whom have become reclaimed water customers in recent years. City Council Resolution 2013-55 directs City Staff to pursue opportunities to evaluate and implement engineering and cost analysis associated with utilizing reclaimed water alternatives to supplement supplies. A feasibility study (FS) to evaluate reclaimed water alternatives is the next necessary step to accomplish City and County water management goals of diversifying their supply portfolio and improving system resiliency. The focus of the FS is to evaluate ways to more efficiently utilize reclaimed wastewater taking into consideration both potable and non-potable alternatives to meet water demand requirements while better balancing environmental conditions in the watershed. The goal of the study is not to identify the single best option for management, but rather to evaluate the ramifications of each of the three proposed alternatives so that water managers can have the best possible understanding of the implications of resource management decisions.

The potable water supply portfolio currently available to the City and to the Espanola-Basin portion of the County are presented in **Figure 1** and described as follows:

- Surface Water Sources
 - Santa Fe River – Nichols and McClure Reservoir hold roughly 5,000 acre-feet of water in the mountains above downtown Santa Fe.
 - San Juan – Chama Project (SJCP) Water – Both the City and County have rights to SJCP water, which is imported from the Colorado River watershed as part of the Upper Colorado River Compact. This water is diverted from the Rio Grande via the BDD.
 - Native Rio Grande Water – the County has water rights to native Rio Grande water, which – like the SJCP water – is diverted at the BDD facility.

- Groundwater Sources
 - City Well Field – a series of 11 wells located within City limits and generally along the Santa Fe River to which the City has the right to produce roughly 5000 AFY.
 - Buckman Well Field – a series of 13 wells located near the Rio Grande and along the water transmission lines connecting the BDD diversion facility to the Buckman Regional Water Treatment Facility (BRWTF). These wells are permitted to produce up to 10,000 AFY. The Buckman Wells have offset requirements from state regulators, high transmission costs, some arsenic exceedence issues, and long-term viability thresholds, which limits their use.
 - County Wells – the County may have access to a series of supply wells located in the area surrounding Santa Fe City limits.

¹ *WaterSMART Basin Study: City of Santa Fe and Santa Fe County, New Mexico*, (In press, 2014)

² *Climate Change and the Santa Fe Basin: A Preliminary Assessment of Vulnerabilities and Adaptation Alternatives*, Bureau of Reclamation WaterSMART Program Initiative (February, 2013)

³ *Reclaimed Wastewater Reuse Plan for the City of Santa Fe*³ (April, 2013)



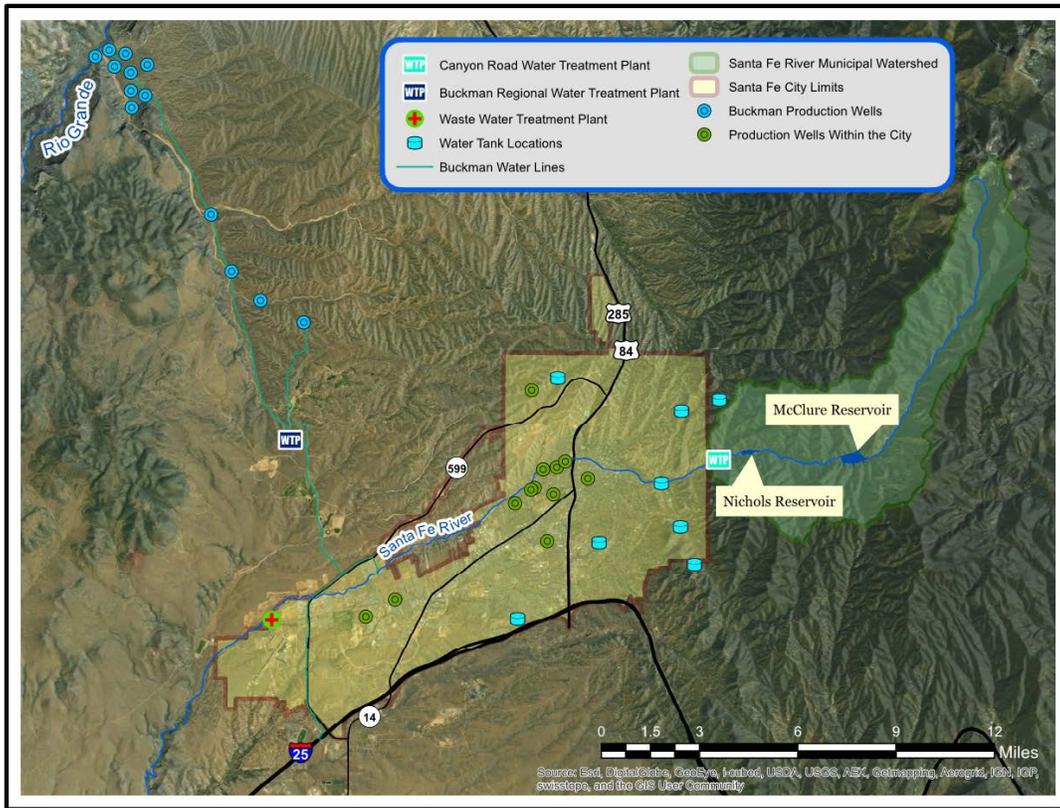


Figure 1

As illustrated in Figure 2, the City supply portfolio and resiliency improved significantly after adding a new source of supply, in this case BDD (surface water).

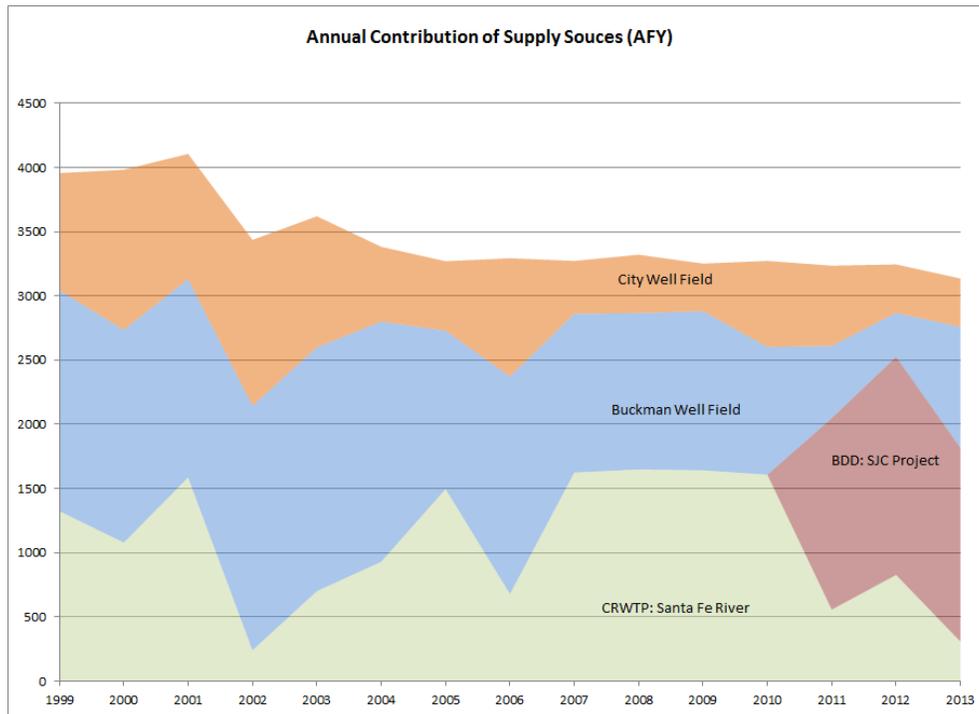


Figure 2

There are a myriad of threats facing water supply in the Southwest that water managers in the City and County of Santa Fe are working to prepare for including drought impacts causing reductions in SJCP apportionments, the risk of BDD and Canyon Road Water Treatment Plants (CRWTP) shutdowns due to low flows and/or poor water quality attributed to drought and fire, and/or low flow permit restrictions, and Rio Grande compact-imposed reservoir storage restrictions. In addition to these regional threats to supply resiliency are local considerations such as: reductions in groundwater recharge, the advanced age of many of the City and Buckman Wells, and the desire to sustain surface flows in the Santa Fe River as part of Living River.

Surface water resources in the Southwest are dependent on seasonal snowpack and runoff conditions, which are prone to fluctuation at all times and which will, in the long term, be impacted by global climate change. With the assistance of a Bureau of Reclamation (BoR) Basin Study WaterSMART grant, the City and County are assessing the direct impacts of climate change on our surface water supply sources and the indirect impacts on our groundwater sources. Through this Santa Fe Basin Study (Basin Study), the City and County and their representatives are working with BoR experts to better understand likely future effects and associated risks from climate change, particularly those associated with the three sub-basins – the Santa Fe River, the upper Rio Grande, and the San Juan River watersheds – which supply water to regional utilities.

Regional groundwater resources are also threatened – well yields have been reduced and groundwater levels near the City’s two well fields have declined substantially; depletions of surface water could trigger onerous administrative conditions to groundwater pumping. The administrative climate surrounding groundwater has become increasingly complex in recent years due to a combination of prolonged drought and recent legal issues, including a lawsuit brought by the State of Texas against the State of New Mexico, pending basin adjudications, and a Supreme Court decision addressing the cumulative impact of rural domestic development based on single-family wells.

In addition to variations in supply, the demand for water in the region is expected to increase through population growth. The population projection for 2050 suggests an increase of 36% resulting in a water demand of about 30,000 Acre-feet annually⁴. The current combined water supply portfolio for the City and County is about 26,000 AFY, indicating a gap in the future even without consideration of climate change impacts on the water supply.

Reclaimed water is integral to the region’s long-range water planning. In 2012, the City convened a citizen group to help update the reclaimed water management plan, resulting in The Santa Fe RWRP, which was adopted by the City Council in 2013.⁵ The RWRP outlines current and projected future uses for reclaimed water from the City wastewater treatment plant and demonstrates that an average of 1,887 million gallons/yr (5,790 af/yr) is discharged to the Santa Fe River. The RWRP did not include a source of reclaimed County water: the Quill WWTF. This facility was built more than 30 years ago to recover water from waste generated at the New Mexico State Penitentiary. The facility’s maximum treatment capacity is approximately 250,000 gallons a day (280 AFY) of wastewater. The current 130,000 gpd effluent from this plant is discharged to the land surface at the penitentiary, but this discharge is not used for irrigation. The Quill WWTF will require upgrades if the effluent is to be discharged to surface water, but this source of supply in addition to the supply available from the City’s wastewater treatment plant could meet the projected water supply gap of 4,000 AFY by 2050.

⁴ *WaterSMART Basin Study* (In Press, 2014)

⁵ 2013-55: *A Resolution Adopting the “Reclaimed Wastewater Plan” and Directing Staff to Develop a Program to Implement the Actions Identified in the Plan*



The RWRP identified specific uses, many of which are currently in operation and also identified projected estimates of water quantities to meet expected demand, as follows:

- ✓ Buckman Well Field Permit Compliance- 33 mg/yr; 100 AFY
- ✓ US Forest Service Livestock Water – 2.3 mg/yr; 7 AFY
- ✓ Santa Fe Country Club Golf Course- 130 mg/yr; 400 AFY
- ✓ Municipal Recreation Complex – 54 mg/yr; 165 AFY
- ✓ On-demand Sales for Dust Control, Construction– 31 mg/yr; 95 AFY
- ✓ Dust Control at Regional Landfill – 6 mg/yr; 17 AFY
- ✓ Marty Sanchez Links de Santa Fe Golf Course– 168mg/yr; 517 AFY
- ✓ Recreational Infield at Santa Fe Downs – 43.5 mg/yr; 134 AFY
- ✓ Future Potable Water Supply – approximately 717 mg/yr; 2,200 AFY
- ✓ Southwest Area Node Park - 19 mg/yr; 57 AFY
- ✓ New Mexico Game and Fish Educational Landscape – 1 mg/yr; 4 AFY
- ✓ Southwest Area Irrigated Parks and Open Space – 48 mg/yr; 149 AFY
- ✓ Downstream Santa Fe River – 600 mg/yr; 1,843 AFY
- ✓ Santa Fe Equestrian Center – 41 mg/yr; AFY

The uses were ranked based on future commitments such as regulatory, institutional or contractual and these may shift in the future. The long-term feasibility and net cost value of using reclaimed water to meet these use-requirements versus shifting emphasis and re-prioritizing and re-ranking these uses and re-allocating the quantities of reclaimed water that may be available for these uses will be thoroughly examined in the proposed engineering FS which will establish performance metrics and costs benefit analyses for utilizing the reclaimed water most effectively. The FS will account for technical implementation potential; environmental and cultural impacts of proposed uses and select alternatives to ensure the reclaimed water are allocated in a prudent and cost effective manner. **Figure 3** illustrates the proportion of reclaimed water uses in 2012 and shows the potential availability for alternative uses.

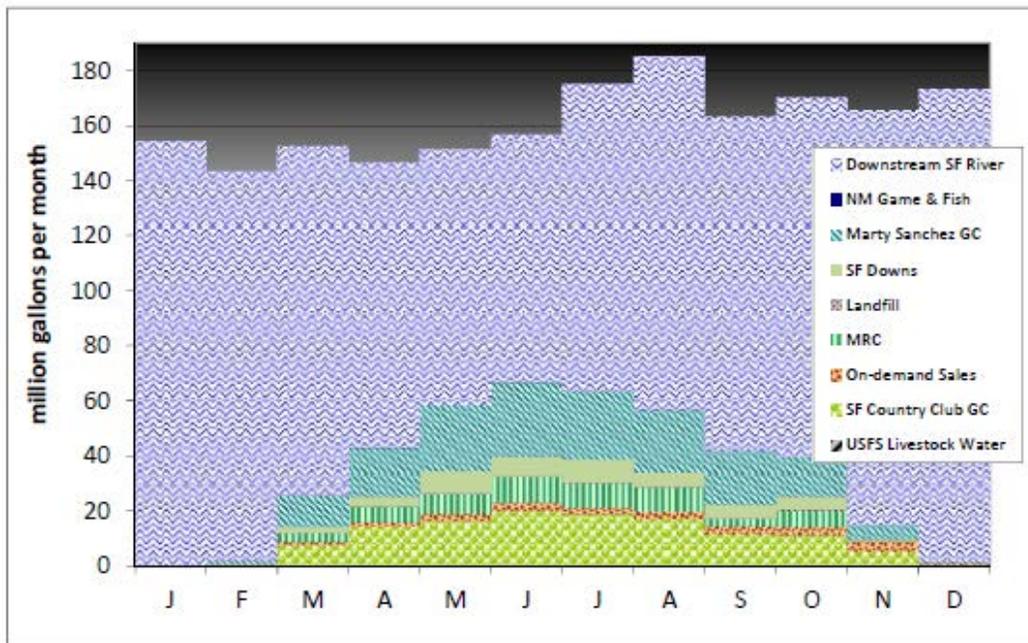


Figure 3

As discussed in the RWRP, the City and County intend to use reclaimed water as a component of potable supply. Although reclaimed water is already available to a limited number of irrigators, infrastructure is required to make use of these supplies for potable water. The proposed FS is the next step for the City and County to optimize reclaimed water resources following guidelines outlined in the Title XVI Water Reclamation and Reuse Program. The FS will emphasize the technical feasibility as well as environmental and cultural impacts in order to develop a present day net value cost analysis to establish cost metrics for designing and implementing the preferred alternatives.

Three primary alternatives, or combinations thereof, will be evaluated in the Santa Fe Region Reclaimed Wastewater Feasibility Study:

1. Treat Reclaimed Water to Meet Drinking Water Standards
 - a. Convey water reclaimed at the Santa Fe WWTP to the BRWTF or the Quill WWTF
 - 1) Treat the water to drinking water standards and return it to the municipal drinking water supply
 - 2) Return the water into the Rio Grande for purposes of:
 - a) Exchange Water – Divert a similar amount of Rio Grande water at the BDD to supplement supply
 - b) Return Flow Credits – Debit the water returned against the total BDD diversion of water from the Rio Grande
 - c) Offset Credits – Count the returned water against the offsets required for the Buckman Well Field
 - b. Convey reclaimed water from an upgraded Quill WWTF to the Santa Fe River
 - 1) Use Quill WWTF reclaimed water in the Santa Fe River to provide water to downstream agricultural users, augment existing flow of reclaimed water in the Santa Fe River, and offset the impacts of conveying the reclaimed water from the Santa Fe WWTP to the BRWTF site
 - 2) Divert Santa Fe river water to the BRWTF from a point below which Quill WWTF reclaimed water is added to the flow in order to optimize the quantity available for the BRWTF while allowing water to provide for needs in the interim wetted reach.
2. Utilize Reclaimed Water for an Aquifer Storage and Recovery Project
 - a. Convey the Santa Fe WWTP reclaimed water upstream to a site on the Santa Fe River at which it would be released to the river. This release flow would support the City's Living River Ordinance⁶ while simultaneously seeping into the groundwater table to recharge the regional aquifer.
 - 1) Potential upgrades to the City WWTP – improvements to existing treatment processes will be required to meet more stringent water quality standards
 - 2) ASR Permit from the Office of the State Engineer (OSE) – an ASR permit would create a water storage account for the City/County with the OSE that would enable storing reclaimed water in the Aquifer for later withdrawal via the City Well Field.
 - b. Convey reclaimed water from an upgraded Quill WWTF to the Santa Fe River for use by downstream agricultural users to increase the amount of reclaimed water from the City WWTP that can be released at the upstream site without impacting downstream users.

⁶ 2012-28 Resolution Adopting Administrative Procedures for the Santa Fe River Target Flow Ordinance Article 25-13, SFCC 1987



3. Expand Current Reclaimed Water Operations
 - a. Further develop the customer base and sales model for supplying reclaimed wastewater from the City WWTP for use on fields, parks, and golf courses in lieu of potable water.
 - b. Use reclaimed water from the Quill WWTF to provide irrigation water to customers in southern parts of the region; i.e., the Downs at Santa Fe, Caja del Rio Landfill, the City of Santa Fe Municipal Recreation Complex.

The evaluation of the reclaimed water alternatives will take into account cost, operational complexity, and public acceptance while maintaining the ability to meet water demands. Each of the alternatives has unique technical and non-technical challenges, which requires a process for a thorough and cost effective evaluation. The focus of the FS is to optimize available reclaimed water which is generalized in **Figure 4**.

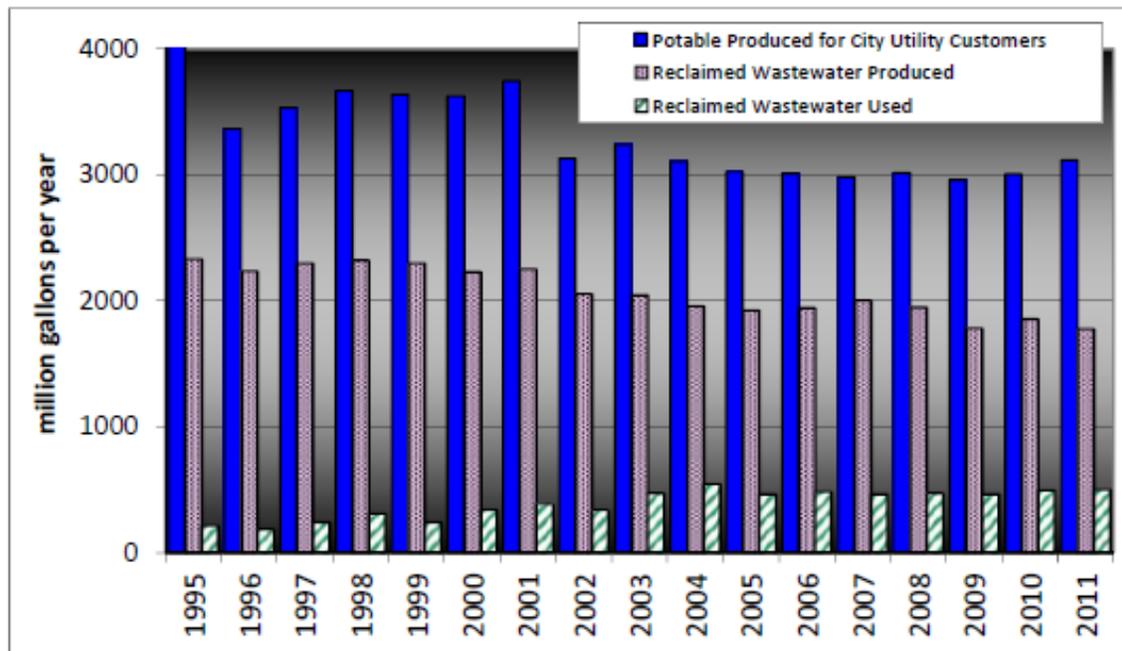


Figure 4

The evaluation process will include:

Engineering Criteria for City and County Reclaimed Water Feasibility Study (Performance Metrics)

1. Quantifying Contribution of Reclaimed Water to Water Supply Portfolio
2. Assessing the state of treatment technology
3. Assessing risks
4. Costs
5. Barriers to implementation

-
6. Pilot Study/Treatability Study
 7. System Dynamics Modeling
 8. Reporting

EVALUATION CRITERIA

WaterSMART: Development of Feasibility Studies under the Title XVI Water Reclamation and Reuse Program Opportunity number R14AS00030 has eight criteria that need to be addressed. The criteria and how our proposed FS meets those criteria are described below.

Evaluation Criterion 1: Statement of Problems and Needs – 10 points

Points will be awarded based on the presence of watershed-based water resource management problems and needs for which water reclamation and reuse may provide a solution. Describe in detail the water resource management problems and needs in the area and explain how water reclamation and reuse may address both those problems and needs.

Santa Fe and the surrounding portion of Santa Fe County are located within the Rio Grande Watershed in the Southern portion of the Espanola Basin. Impactful drought conditions began in this region in 1996 and have, more or less, continued to the present. The City and County are faced with the realization that the water supply now and in the future may be inadequate to meet regional demand. Working together, the City and County have taken the following steps to secure resilient and adequate water supplies:

- The City of Santa Fe developed a long-range water supply plan which explored a multitude of water supply scenarios and used a dynamic systems model, WaterMAPS, to evaluate the supply portfolio capacity to meet current and future demands which has led to the current combined City and County portfolio. The County's 40-year Water Plan, which recommended conservation, conjunctive use and converting existing users to surface water supplies, was adopted by the Commission in 2009.
- Both partners have implemented highly successful residential conservation programs including water rates, incentives for water efficient appliances, and low water use landscapes. This conservation program has reduced City use to 101⁷ gpcd and the County's gpcd to 98 in 2011⁸
- Installing three new wells in the Buckman Well Field to increase the ability to use the 10,000 AFY of water rights the City holds.
- The City and County jointly planned, designed and constructed the \$220M BDD Project to divert water from the Rio Grande, treat it to drinking water standards and deliver to City and County distribution systems. The BDD project provides 5,230 AFY of SJCP water and 375 AFY of native Rio Grande water that had previously not been available to the City and County.

⁷ City of Santa Fe GPCD as reported to the OSE for 2013.

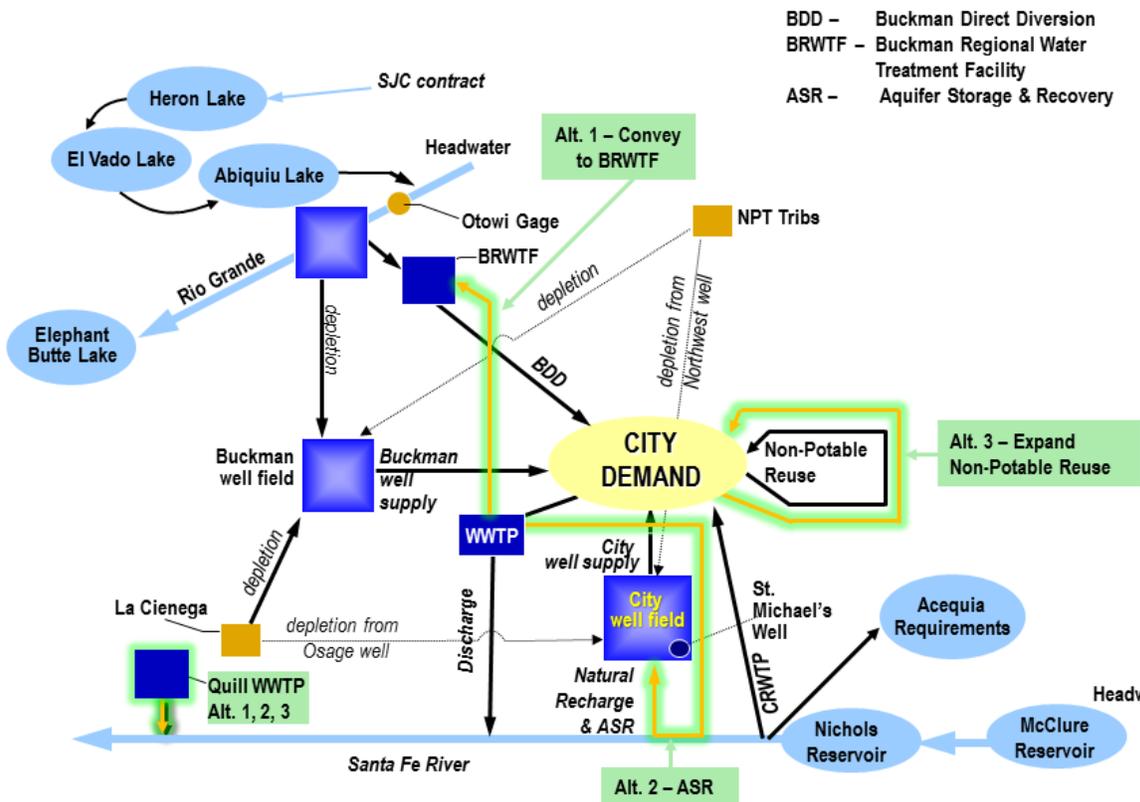
⁸ Santa Fe County GPCD as reported to the New Mexico Office of the State Engineer for 2011.



- The BDD was designed and constructed with excess capacity intended to be used for alternative supplies such as reclaimed water.
- Along with the BoR, the City and County have been evaluating integrated water supplies under projected climate change conditions with the assistance of the WaterSMART basin study program initiative. Completion of this project is anticipated in September 2014.

Despite building a diverse portfolio that is comprised of both ground water and surface water sources, the City and County are facing long-term shortages in water supplies because of a projected hotter and drier climate leading to reductions in both surface water flows and aquifer recharge while at the same time exacerbating catastrophic fire risk to water supplies. These reductions in supply combined with increasing demand for potable water from a growing population are causing water managers to seek new and sustainable sources of water. The ongoing Basin Study has identified existing supply vulnerabilities and identified alternatives to address these weaknesses and ensure a more resilient water supply in the face of long term drought (Figure 5). One of the primary adaption alternatives identified is to "augment potable water supplies with reclaimed wastewater."⁹

Figure 5



A feasibility study would enable the City and County to evaluate several augmentation alternatives in order to assess which would optimize the benefit of reclaimed water in terms of environmental and economic

⁹ Climate Change and the Santa Fe Basin: A Preliminary Assessment of Vulnerabilities and Adaptation Alternatives Bureau of Reclamation WaterSMART Program Initiative (February, 2013)

sustainability, regional water needs, administrative and legal limitations, and compatibility with existing infrastructure and infrastructure planning efforts.

In response to these findings, the City conducted a preliminary evaluation of current reclaimed water operations and developed beneficial use alternatives to be further evaluated under a FS to assess implementation factors and costs. The alternatives identified to be evaluated as part of the FS include using reclaimed wastewater: (1) as a non-potable water supply, (2) to meet administrative needs including offset requirements, and (3) to supplement the City's future potable water needs. Details are presented in the RWRP. This plan also identified means to supplement water supplies through water reuse, thereby improving efficiency, providing flexibility during water shortages, and diversifying the water supply. The critical next step to implementing the RWRP is to conduct an engineering FS to determine the optimal strategy to enable the City and County to obtain and provide sufficient clean water to meet future demand while promoting water and energy efficiency and environmental stewardship.

Evaluation Criterion 2: Water Reclamation and Reuse Opportunities – 15 points

Points will be awarded based on the extent to which the proposal demonstrates that the Title XVI feasibility study will explore opportunities for water reclamation and reuse in the study area.

- 1. Describe how the feasibility study will investigate potential uses for reclaimed water (e.g., environmental restoration, fish and wildlife, groundwater recharge, municipal, domestic, industrial, agricultural, power generation, and recreation).*
- 2. Describe the potential water market available to use any recycled water that might be produced upon completion of a Title XVI project, as well as methods to stimulate recycled water demand and methods to eliminate obstacles for use of reclaimed water.*
- 3. Describe the sources of water that will be investigated for potential reclamation, including impaired surface and ground waters.*

The RWRP will focus solely on water reclamation and reuse in the Santa Fe region.

1. The three alternatives to be evaluated all involve the use of reclaimed water for some combination of fish and wildlife, groundwater recharge, municipal, industrial, agricultural, and recreational use, as shown in Table 1.



Table 1. Benefits of Reclaimed Water Use in Santa Fe Region

Use of Reclaimed Water	Alternatives		
	Direct Potable Use	Aquifer Storage and Recovery	Enhanced Non-Potable Use
Fish and Wildlife: Reclaimed water from the Santa Fe WWTP and Quill WWTF will be used to maintain flow in the effluent-dependent Santa Fe River, supporting fish and wildlife such as birds and beaver	X	X	X
Groundwater Recharge: Convey reclaimed water from the Santa Fe WWTP to a point upstream of the City and flow it down the Santa Fe River, creating a "Living River" and allowing infiltration to recharge the aquifer	x	X	
Municipal and Industrial: Treat reclaimed water for blending with surface water or exchange reclaimed water for additional diversion of river water to provide potable water for M&I needs	X		
Agricultural: Maintain flows in the Santa Fe River that are used for downstream traditional agriculture	X	X	X
Recreational: Convey reclaimed water from the Santa Fe WWTP to a point upstream of the City and flow it down the Santa Fe River, creating a "Living River" that can be stocked with fish	X	X	

2. The market for reclaimed water in the Santa Fe region is very active and most of the reclaimed water for which there is existing infrastructure will be used in the next 5 to 7 years. Additional infrastructure is needed to make use of all of the reclaimed water currently available. There is sufficient demand for reclaimed water that all of the water available for use will be used.

Alternative two, which involves treating reclaimed water for potable use, is expected to require a widespread outreach effort to assure the public that the water is safe for consumption. The City has started this effort with the adoption of the RWRP, which includes the use of treated reclaimed water in the potable water system. This plan was developed by a citizen group, made available for public review and comment, and was adopted without objection by the City Council.

3. The sources of reclaimed water for reuse in the Santa Fe region are the treated effluent from the City WWTP and the County's Quill WWTF.

Evaluation Criterion 3: Description of Potential Alternatives – 15 points

Points will be awarded based on the extent to which the proposal demonstrates that the Title XVI feasibility study will develop descriptions of water supply alternatives, including proposed Title XVI project and other water supply alternatives.

1. Describe the objectives all alternatives will be designed to meet. What other water supply alternatives will be investigated as part of the Title XVI feasibility study?



2. Provide a general description of the proposed project that will be the subject of a Title XVI feasibility study.
3. Describe alternative measures or technologies for water reclamation, distribution, and reuse that will be investigated as part of the Title XVI feasibility study.

The proposed Title XVI Santa Fe Regional Water Supply Feasibility Study will investigate the alternatives for increased use of reclaimed water as a component of water supply in the region.

1. The evaluation of each alternative will include developing a conceptual layout of the new infrastructure, connection with existing infrastructure, and improvements necessary in existing infrastructure for the alternatives. This must be done in order to develop an estimate of capital, O&M and life-cycle costs that will be completed as part of the FS. The alternatives that will be evaluated in the Santa Fe Regional Reclaimed Water Supply Feasibility Study and their relationship to the water supply are shown in Table 2.

Table 2. Reclaimed Water Alternatives in Relation to Water Supply

Reclaimed Water Alternative	Relationship to Water Supply
Alternative 1: Direct Potable Use	Reclaimed water from the Santa Fe WWTP would be treated and distributed to customers, and/or exchanged for additional river water diversion, or used to provide offsets for existing groundwater rights. The allowable amount of the WWTP diverted for Alternative 1 will be determined in the FS, but at a minimum is expected to be 2,200 AFY added to the water supply, which is approximately 7% of the 2050 demand in the region.
Alternative 2: Aquifer Storage and Recovery	Reclaimed water from the Santa Fe WWTP would be conveyed to the Santa Fe River upstream of the City and released into the river to support the Living River initiative while infiltrating through the stream bottom to recharge the aquifer. The City has conducted seepage analyses showing significant seepage losses to groundwater in the vicinity of the City Well Field. The OSE will determine how much credit the City will receive for recharged water and how much can be pumped out via the City's wells.
Alternative 3: Enhanced Non-Potable Use	The existing reclaimed water program provides water for irrigation to some proximate water users but falls short of optimizing the resource. The FS would evaluate the potential for improvement in this program including infrastructure improvements, customer expansion, and program expansion.

2. The proposed Santa Fe Region Reclaimed Water Supply Feasibility Study will evaluate three alternatives and recommend the selection of the alternative that best meets the selection criteria based on objectives, demands, needs, cost effectiveness, and acceptance. The alternatives are:

Alternative 1: Direct Potable Use

- Reclaimed water from the Santa Fe WWTP conveyed to the BRWTF where it would be treated to meet Safe Drinking Water Act standards and blend into municipal water supply.
- Return a portion of the water to the Rio Grande in order to:
 - Exchange water – Divert a like amount of Rio Grande water at the BDD to supplement supply.



-
- Return Flow Credits – Debit the water returned against the total BDD diversion of water from the Rio Grande.
 - Offset Credits – Count the returned water against the offsets required for the Buckman Well Field.
- Convey reclaimed water from an upgraded Quill WWTF to the Santa Fe River for use by downstream agricultural users to increase the amount of reclaimed water from the City WWTP that can be treated at the BRWTF.

Alternative 2: Aquifer Storage and Recovery (ASR)

- Convey the Santa Fe WWTP reclaimed water to an upstream site on the Santa Fe River and release to the river. This release flow would sustain the “living river,” a citywide project to sustain flows in the Santa Fe River, while at the same time seeping into the ground and recharging the underlying aquifer.
 - Evaluate possibly upgrading the City WWTP to meet more stringent water quality standards for the Santa Fe River.
 - The City will apply for an ASR permit from the OSE which would produce a water storage account.
 - Stored water can provide a supplemental source of supply that can be recovered by pumping the City Wells during times of drought.
 -
- Convey reclaimed water from an upgraded Quill WWTF to the Santa Fe River for use by downstream agricultural users to increase the amount of reclaimed water from the City WWTP that can be released to the Santa Fe River.

Alternative 3: Enhanced Non-Potable Use

- Further develop the customer base and sales model for supplying reclaimed wastewater from the City WWTP for use on fields, parks and golf courses in lieu of potable water.
 - Use reclaimed water from the Quill WWTF to provide reclaimed water to customers in southern parts of the region (e.g., Down at Santa Fe, Caja del Rio Landfill, City of Santa Fe Municipal Recreation Complex).
3. Various alternative measures and technology for water reclamation, distribution, and reuse will be explored in detail in the Santa Fe Region Reclaimed Water Supply Feasibility Study and are summarized in Table 3.



Table 3. Reclamation, Distribution, and Reuse Measures or Technologies to be Investigated

Reclaimed Water Alternative	Measures or Technologies to be Investigated
Alternative 1: Direct Potable Use	<p>Reclamation: Conventional wastewater treatment technology at the Santa Fe Wastewater Treatment Plant and upgraded treatment processes at the Quill WWTF</p> <p>Distribution: Pipelines and pump stations necessary to convey reclaimed WWTP water to the BRWTF and potentially to the Rio Grande, and pipelines and pump stations to convey Quill WWTF reclaimed water to the Santa Fe River</p> <p>Reuse: Utilize the existing advanced drinking water treatment technology at the BRWTF for pre-treatment of reclaimed water before blending into water system or discharge to the Rio Grande. BRWTF was designed and built with excess capacity to handle these flows.</p>
Alternative 2: Aquifer Storage and Recovery	<p>Reclamation: Conventional wastewater treatment technology at the Santa Fe Wastewater Treatment Plant and upgraded treatment processes at the Quill WWTF</p> <p>Distribution: Pipelines and pump stations necessary to convey reclaimed WWTP water to the BRWTF and potentially to the Rio Grande, and to convey Quill WWTF water to the Santa Fe River</p> <p>Reuse: Release to the Santa Fe River for aquifer recharge</p>
Alternative 3: Enhanced Non-Potable Use	<p>Reclamation: Conventional wastewater treatment technology at the Santa Fe Wastewater Treatment Plant and upgraded treatment processes at the Quill WWTF</p> <p>Distribution: Existing and new pipelines and pump stations necessary to convey reclaimed water to customer locations</p> <p>Reuse: As specified by each reclaimed water customer in lieu of potable water from City of Santa Fe distribution system</p>

Evaluation Criterion 4: Stretching Water Supplies – 15 points

Points will be awarded based on the extent to which the proposal demonstrated that the Title XVI feasibility study will address activities that will help to secure and stretch water supplies.

1. *Describe the potential for the project to reduce, postpone, or eliminate the development of new or expanded water supplies. Include description of any specific issues that will be investigated or information that will be developed as part of the Title XVI feasibility study.*
2. *Describe the potential for the project to reduce or eliminate the use of existing diversions from natural watercourses or withdrawals from aquifers. Include description of any specific issues that will be investigated or information that will be developed as part of the Title XVI feasibility study.*
3. *Describe the potential for the project to reduce the demand on existing Federal water supply facilities. Include description of any specific issues that will be investigated or information that will be developed as part of the Title XVI feasibility study.*



The purpose of the Santa Fe Region Reclaimed Water Supply Feasibility Study is to determine the reclaimed water alternative that best meets goals shared by the City and County to provide sufficient and resilient sources of water. In the absence of reclaimed water use, the region is projected to be in a water deficit by the year 2050, or potentially sooner under some climate change and growth scenarios.

1. This feasibility study is an opportunity to build on the work done on our WaterSMART Basin Study, which estimates the impacts of climate change on regional water supplies. The key to integrating the Basin Study with the proposed Feasibility Study is WaterMAPS, our dynamic systems model. WaterMAPS incorporates all sources of supply and can be run in either a planning or operations mode. The model informs both daily operational and long-range planning decisions and gives utility managers and operators the ability to test the implications of operations decisions before implementation. In daily operations, the model helps operators choose which source to prioritize for use – particularly in lower demand seasons – based on factors such as historical hydrology, operation and maintenance costs, resource availability, best use of imported water, and effects of groundwater pumping. The model is also a long-range planning tool and has been used to optimize the use of existing supplies and to evaluate which future water supply options will best meet objectives such as cost, reliability, and sustainability. Under the Basin Study, WaterMAPS was updated to include the Rio Grande watershed portion of the County in estimating the impact of climate change. With additional upgrades, WaterMAPS will be an excellent tool to quantify how much reclaimed water use will extend the regional water supply for each scenario.
2. Reclaimed water will be used to augment surface water or groundwater to meet projected demands. If reclaimed water is not added as a source of supply, the projected 2050 supply gap will have to be filled with additional diversions of surface water or by pumping groundwater. In the interim, reclaimed water use can decrease the amount of surface water and/or groundwater diverted for water supply, leaving that water in the aquifer and watershed. Under one alternative, reclaimed water would be used to recharge the aquifer that has been adversely impacted by pumping. The WaterMAPS system model will be used to estimate the effectiveness of reclaimed water use in extending water supplies under each of the three alternatives.
3. The Federal water supply facilities that would most directly benefit from the use of reclaimed water in the Santa Fe region is Cochiti Reservoir, which is operated by the Army Corps of Engineers. Under Alternative 1, reclaimed water could be returned to the Rio Grande to offset pumping at the Buckman Well Field. This water would enter the watercourse upstream of Cochiti reservoir and would enhance the recreational value of that resource. Another facility which could greatly benefit would be Heron Reservoir which is operated by the BoR, with whom there is potential to enter into a lease agreement for excess supply of SJCP water that may periodically become available should the reclaimed water augment the City and County supply beyond demand requirements. The additional SJCP water would benefit Rio Grande Operations by providing water to be used to support environmental flows as outlined in the Biological Opinion, or used to support more efficient conveyance.



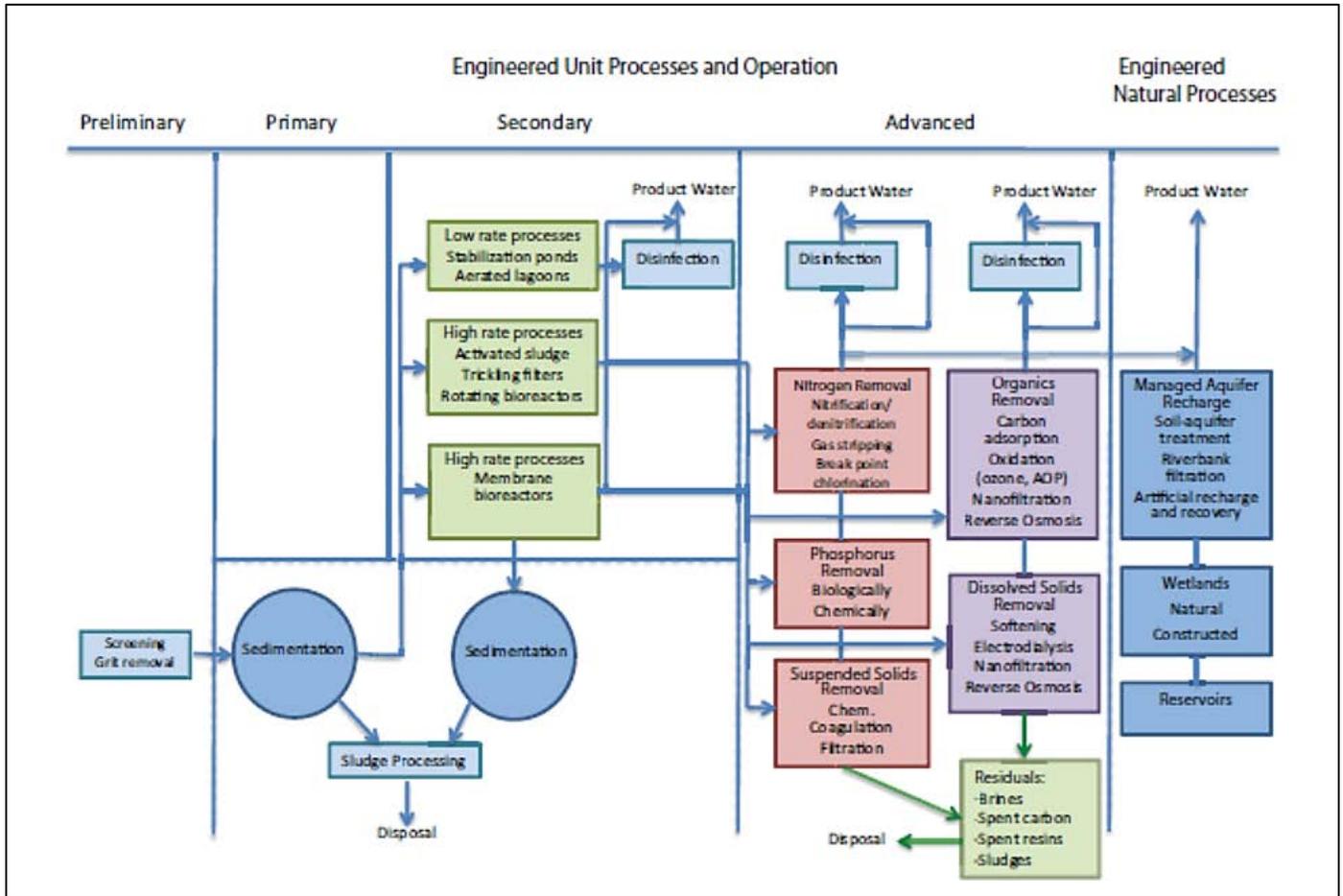


Figure 6

Source: *Water Reuse: Potential for Expanding the Nation's Water Supply Through Reuse of Municipal Wastewater*, National Academy of Sciences, 2012

Evaluation Criterion 5: Environment and Water Quality – 15 points

Points will be awarded based on the extent to which the proposal demonstrates that the Title XVI feasibility study will address the potential for a water reclamation and reuse project to improve surface, ground water, or effluent discharge quality restore or enhance habitat for nonlisted species or provide water or critical habitat for federally listed threatened or endangered species.

1. Describe the potential for the project to improve the quality of surface or groundwater, including description of any specific issues that will be investigated or information that will be developed as part of the Title XVI feasibility study.
2. Describe the potential for the project to improve flow conditions in a natural stream channel, including description of any specific issues that will be investigated or information that will be developed as part of the Title XVI feasibility study.
3. Describe the potential for the project to provide water or habitat for federally listed threatened or endangered species, including description of any specific issues that will be investigated or information that will be developed as part of the Title XVI feasibility study.

In each alternative, there would continue to be flow in the Santa Fe River to supply downstream traditional agriculture before discharging to the Rio Grande. The Santa Fe River is effluent dependent and the alternatives will each continue to support flow in the river.

1. The Santa Fe WWTP discharges into a segment of the Santa Fe River that is listed as impaired for nutrients. When a Total Maximum Daily Load (TMDL) is completed for this segment, it is unlikely that the Santa Fe WWTP will be able to discharge to the river unless there are upgrades to the WWTP to remove nitrogen and phosphorous. Under the proposed alternatives, the quality of reclaimed water from the WWTP will either be improved at the plant for discharge to the Santa Fe or Rio Grande or it will be treated to drinking water standards at the BRWTF. In any of the three proposed scenarios, the effluent discharged from the WWTP will be of higher quality than it is today. Similarly, the Quill WWTF will have to be upgraded so that the effluent can be discharged to surface water under a National Pollution Discharge Elimination System (NPDES) permit.
2. Under any of the three proposed alternatives, flow in the Santa Fe River would continue to be supported by effluent discharges. This flow supports riparian vegetation along the river which, in turn, supports a population of beavers. The riparian vegetation along the Santa Fe River was highlighted in 2010 when the Director of the Office of Water at the Environmental Protection Agency (EPA) came to see the native vegetation – more than 5,000 cottonwood trees and 15,000 willow trees – that were planted to filter pollution and provide wildlife habitat along the Santa Fe River. The Santa Fe River is an effluent-dependent stream and the discharge from the WWTP would continue to assist in sustaining the riparian vegetation under all of the alternatives proposed for evaluation.
3. Under alternative 1, effluent discharge could add to the flow in the Rio Grande in which case it would be stored in Cochiti Reservoir, or it could displace additional diversions of SJCP water, which would then remain in upstream reservoirs. Additional storage in either reservoir would enhance the options for facility water managers for management goals such as the release of water in the spring to mimic floods and trigger spawning of the endangered silvery minnow. Throughout the year, the continued augmentation of the Rio Grande will help support the silvery minnow and its critical habitat. Additionally, the riparian vegetation supported by flow from the WWTP provides potential habitat for the endangered southwestern willow flycatcher.

Evaluation Criterion 6: Legal and Institutional Requirements – 10 points

Points will be awarded based on the extent to which the proposal demonstrates that the Title XVI feasibility study will address legal or institutional requirements or barriers to implementing a project, including water rights issues and any unresolved issues associated with implementation of a water reclamation and reuse project.

The proposed Santa Fe Region Reclaimed Water Supply Feasibility Study will explore the legal and institutional barriers as part of the evaluation of each alternative.

Alternative 1 could return water to the Rio Grande to offset groundwater pumping. The administration of water rights in New Mexico recognizes the interaction between groundwater extraction and flow in the river. For groundwater that is pumped, a specified amount must be returned to the river to 'offset' the effects of pumping on river flow. Reclaimed water used to offset pumping would allow for additional pumping from the Buckman



Well Field. Another possibility under alternative 1 is that reclaimed water would be treated and added to the drinking water system. This would enable the water utility to expand supply without increasing withdrawals and could be accomplished without significant change to existing City and County permits. Another accounting possibility under this alternative would account for reclaimed water returned to the Rio Grande as Return Flow Credits. Under this scenario, reclaimed water would be debited against withdrawals made by the city from the Rio Grande, an administrative option which would stretch the existing water rights diverted from this source.

Alternative 2 would use reclaimed water for recharging the aquifer, with the intent of being able to pump that water at a later time. Under New Mexico's Aquifer Storage and Recovery (ASR) Statute, the Office of the State Engineer determines a recoverable amount of water based on analysis of the project and tracks that water through a storage account so that it is available to the permit holder in the future. A demonstration project to quantify the amount of water infiltrated from the Santa Fe Rive that reaches the aquifer is the first step to acquiring an ASR permit. The Feasibility Study will survey examples of similar projects, such as the Bear Canyon Arroyo infiltration project undertaken by the Albuquerque-Bernalillo County Water Utility Authority, to estimate the recoverable quantities associated with such permits.

Alternative 3 is to expand the current reuse program by offering more reclaimed water from the Santa Fe WWTP and adding reclaimed water from the Quill WWTF. The Feasibility Study will include an assessment of the type of upgrades necessary at the WWTP's to allow for unlimited use of the reclaimed water.

Evaluation Criterion 7: Renewable Energy and Energy Efficiency – 10 points

Points will be awarded based on the extent to which the proposal demonstrates that the Title XVI feasibility study will address methods to incorporate the use of renewable energy or will otherwise address energy efficiency aspects of the water reclamation and reuse being investigated.

The FS will include the use of solar power for conveying reclaimed water from the source wastewater treatment plant to the place where it will eventually be used, and there are numerous energy efficient aspects of the existing water system. Augmenting water supply with the reclaimed water will enable more water to be stored in McClure and Nichols reservoir, this water is routed via gravity to the Canyon Road Water Treatment Plant and courses through a hydropower turbine that generates electricity used to offset power consumption. ASR will enable to City during times to drought to pump City Well Field more frequently than the Buckman Wells, a strategy which is more energy efficient because of reduced lifting and transmission costs. BDD uses solar power to provide power to operate both the treatment plant and a booster station, and reducing diversions will further lessen energy requirements to extract, remove and dispose of sediments extracted from the Rio Grande waters. This type of solar power arrangement will be evaluated as part of each of the alternatives.

Evaluation Criterion 8: Watershed Perspective – 10 points

Points will be awarded based on the extent to which the proposal demonstrates that the Title XVI feasibility study will address alternatives that promote and apply to a regional or watershed perspective to water resource management.

The collaboration between the City and County that is being developed through shared projects such as the BDD uses on a regional definition based on an overlay of the boundaries of the Rio Grande watershed and the



administrative boundary of the County. The Rio Grande Watershed encompasses all of the City of Santa Fe, and the entire region encompassed in this partnership would fall within the southern portion of the Espanola Basin.

On a smaller scale, one of the City's sources of supply is the Santa Fe River, a sub-watershed to the Rio Grande, which flows through McClure and Nichols reservoir in the mountains above the City. This river was, at one time, the sole source of supply for the City and its presence is one of the primary reasons for Santa Fe's existence. Protection of this resource is vital to the culture and character of Santa Fe as well as to its future water security, and a joint effort is being made by the City and County through the WaterSMART program to understand the potential impacts of Climate Change on the smaller Santa Fe and larger Rio Grande watersheds because they are integral to the future of regional water supply. Utilizing reclaimed water is critical to augment water supplies and to support the Target Flow for a Living River which was mandated by City Ordinance in 2012. The Living River is an applied concept designed to serve as a highly desirable 'waterscape' for downtowns across the nation, provide cooling effects in an urban area suffering from the 'heat-island' phenomena and to recharge the underlying aquifer which is a primary source of water during droughts.

The integrated portfolio established by the City and County is designed to provide a more resilient and balanced water supply while reducing energy requirements and sustaining environmental and cultural water demands to achieve a healthier Watershed.

REQUIRED PERMITS OR APPROVALS

No permits or approvals are necessary to conduct the proposed Santa Fe Region Reclaimed Water Supply Feasibility Study.

FUNDING PLAN AND LETTERS OF COMMITMENT

Both the City and County incorporated their allocation of the proposed funds into respective FY-15 budgets which begin on July 1st. The funding is contained within the annual operating budget and is not tied to any outside grants, proposals or other 3rd party entities.

As stated in the technical approach of this proposal, the City of Santa Fe as the Primary Study Manager will carry out its mandate to pursue an engineered evaluation of reclaimed water alternatives as authorized in Resolution 2013-55. This commitment is demonstrated by the City taking the initiative to conduct an independently funded reclaimed water resource plan that identified the alternatives proposed for further analysis in this proposal. This commitment is exemplified by the attached initiation of Resolution 2014-TBD introduced by City Councilor Peter Ives which authorizes City staff to apply for US Bureau of Reclamation funding opportunities to evaluate the feasibility of utilizing reclaimed water for alternative non-potable and potable uses and committing the necessary matching funding both in technical resources and monetary contributions. Similarly, the County as the Secondary Study Manager is committed to providing its portion of the shared matching funds as indicated by attached letter of support. No constraints, limitations or contingency is known to exist tied to the City and County contributions of funds.

Both the City and County are proposing to contribute both financial and technical expertise as their match. All proposed staff has graduate degrees in science and engineering with relevant professional



registrations and demonstrated experience in conducting feasibility studies under the BOR Title XVI requirements.

Table 1 summarizes the non-Federal and other Federal funding sources for the proposal feasibility study. The in-kind contributions are denoted with an asterisk. This funding plan includes all study costs, as follows:

1. Contributions to the cost share requirement, such as monetary and/or in-kind contributions and source funds contributed by the applicant (e.g., reserve account, tax revenue, and/or assessments).

The City and County of Santa Fe will contribute both monetary and in-kind contributions. The source of the monetary contribution is the FY15 budget, which begin on July 1. The in-kind contributions are labor of City and County employees.

2. Describe any in-kind costs incurred before the anticipated study start date that you seek to include as study costs.

No in-kind costs have included as study costs.

3. Provide the identity and amount of funding to be provided by funding partners, as well as the required letters of commitment.

The City will provide a monetary contribution of \$15,500.00 and in-kind contribution of \$126,902.77. City of Santa Fe Resolution 2013-55 commits to providing the matching contribution for the proposed project (attached). The County will provide a monetary contribution of \$12,500.00 and an in-kind contribution of \$16,542.00. The letter of commitment from the Santa Fe County is attached and the signed copy to follow by June 1, 2014.

4. Describe any funding requested or received from other Federal partners. Note: Other sources of Federal funding may not be counted towards the applicant's 50 percent cost share unless otherwise allowed by statute.

No funding has been requested or received from other Federal partners.

5. Describe any pending funding requests that have not yet been approved, and explain how the study will be affected if such funding is denied.

There are not pending funding requests that have not been approved.

We sincerely appreciate your consideration for this very worthwhile project. Thank you.



1 downstream irrigation needs; and

2 **WHEREAS**, the City's wastewater treatment plant continues to produce high water
3 quality reclaimed wastewater; and

4 **WHEREAS**, the City recognizes that there is less reclaimed wastewater available than
5 demand, especially during the summer; and

6 **WHEREAS**, the Governing Body approved the Master Plan of the Southwest Area Node
7 Park in December 2011 and identified reclaimed wastewater as the park's water supply source;
8 and

9 **WHEREAS**, the assumptions in the previous Treated Effluent Management Plan,
10 adopted in 1998, projected that the available reclaimed wastewater would be twice as much as is
11 currently available; and

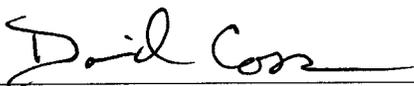
12 **WHEREAS**, the City is under no current obligation to deliver reclaimed wastewater to
13 the Santa Fe River beyond the amount needed to offset the depletion effects caused by pumping
14 the ground water of the Buckman well field.

15 **NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BODY OF THE**
16 **CITY OF SANTA FE** that the Governing Body hereby adopts the "*Reclaimed Wastewater*
17 *Resource Plan*" in its entirety.

18 **BE IT FURTHER RESOLVED** that City staff is directed to develop a program to
19 implement the actions identified within the *Reclaimed Wastewater Resource Plan* and to revise or
20 amend the *Plan* as necessary as conditions concerning reclaimed wastewater change significantly.

21 PASSED, APPROVED and ADOPTED this 29th day of May, 2013.

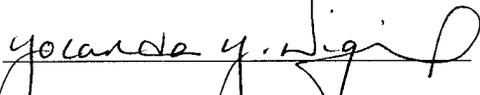
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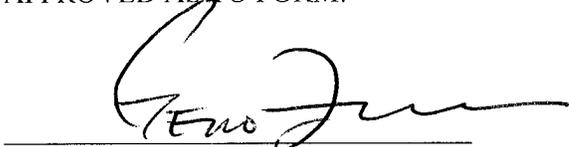
DAVID COSS, MAYOR

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ATTEST:


YOLANDA Y. VIGIL, CITY CLERK

APPROVED AS TO FORM:


GENO ZAMORA, CITY ATTORNEY

CITY OF SANTA FE, NEW MEXICO

RESOLUTION NO. 2014-__

INTRODUCED BY:

Councilor Peter Ives

A RESOLUTION

AUTHORIZING PUBLIC UTILITIES DEPARTMENT STAFF TO APPLY FOR US BUREAU OF RECLAMATION (BOR) FUNDING OPPORTUNITIES TO EVALUATE THE FEASIBILITY OF UTILIZING RECLAIMED WATER FOR ALTERNATIVE NON-POTABLE AND POTABLE USES

WHEREAS, the City of Santa Fe (CoSF) has completed two studies in 2013 that identified reclaimed water as an under-utilized asset; and

WHEREAS, the findings of these studies indicated that the next important step in the evaluation process is for the CoSF to evaluate the feasibility of utilizing reclaimed water to augment its integrated water supply portfolio ; and

WHEREAS, to establish the engineering, legal, environmental, and cost-benefit factors of utilizing reclaimed water for select alternatives such as those outlined in the Reclaimed Wastewater Resource Plan;

WHEREAS, as presented in Resolution 2013-55, City Staff is directed to develop a program to implement the actions identified within the *Reclaimed Wastewater Resource Plan*

NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BODY OF THE

CITY OF SANTA FE that staff is directed to apply for funding through the WaterSMART: Development of Feasibility Studies under the Title XVI Water Reclamation and Reuse Program.

BE IT FURTHER RESOLVED that staff is directed to include in their funding request,

1. Collaborative partnership with the Santa Fe County.

PASSED, APPROVED, and ADOPTED this ___ day of _____, 2014.

JAVIER M. GONZALES, MAYOR

ATTEST:

YOLANDA Y. VIGIL, CITY CLERK

APPROVED AS TO FORM:

KELLEY A. BRENNAN, INTERIM CITY ATTORNEY

Daniel "Danny" Mayfield
Commissioner, District 1

Miguel M. Chavez
Commissioner, District 2

Robert A. Anaya
Commissioner, District 3



Kathy Holian
Commissioner, District 4

Liz Stefanics
Commissioner, District 5

Katherine Miller
County Manager

May 6, 2014

Mr. Shaun Wilken
Bureau of Reclamation
Acquisition Operations Group
Mail Code: 84-27810
P.O. Box 25007
Denver, CO 80225

RE: Santa Fe County Letter of Commitment to Technical Proposal Providing for Santa Fe Basin's Future Water Supply Needs: A Feasibility Study to Optimize the Use of Regional Reclaimed Wastewater

Dear Mr. Wilken and the Bureau of Reclamation Evaluation Team,

Santa Fe County is pleased to collaborate with the City of Santa Fe on this proposal: Providing for Santa Fe Basin's Future Water Supply Needs: A Feasibility Study to Optimize the Use of Regional Reclaimed Wastewater. The County recognizes the great benefit of increased utilization of reclaimed wastewater to meet strained regional water supplies, whether through direct or indirect use. The proposed feasibility study is the next step toward achieving our region's goal. This proposal continues an ongoing effort between the City and County to cooperate on developing regional water supply solutions that can synergistically combine the assets of our individual local governments to achieve greater water supply resiliency for our region.

Hence, the County is committing to the funding identified in the funding plan of this proposal at the time of the funding award.

Please contact the County's study representative, Public Utilities Division director Claudia Borchert, at cborchert@santafecountynm.gov should you have any additional questions for us.

Respectfully,

A handwritten signature in cursive script, appearing to read "Katherine Miller", is written in black ink.

Katherine Miller,
Santa Fe County Manager

CC: Bill Schneider, Proposal Primary Contact and Water Resources Coordinator, City of Santa Fe Water Division
Claudia Borchert, Santa Fe County Public Utilities Director

	B	C	D	E	F	G	H
1	Summary of Non-Federal and Federal Funding Sources						
2	Funding sources	Funding Amount					
3	<i>Non-Federal Entities</i>						
4	1. City of Santa Fe (in-kind)	\$126,902.77					
5	2. City of Santa Fe (monetary)	\$15,500.00					
6		\$142,402.77					
7							
8	3. Santa Fe County (in-kind)	\$16,542.20					
9	4. Santa Fe County (monetary)	\$12,500.00					
10		\$29,042.20					
11							
12	<i>Non-Federal Subtotal:</i>	\$171,444.97					
13							
14	<i>Other Federal Entities</i>	0					
15							
16	Requested Reclamation Funding	\$ 132,000.00					
17							
18	Total Study Funding	\$ 303,444.97					
19							
20	Budget Proposal						
21	Budget Item Description	\$/Unit	Quantity	Labor unit Hours	Raw Costs	Fringe	Total Cost
22	<i>Salary & Wages (City of Santa Fe)</i>						
23	Employee 1 Study Manager	\$ 35.92	650	hours	\$23,348.00	\$ 7,578.76	\$30,926.76
24	Employee 2 Water Resources Coordinato	\$ 28.65	450	hours	\$12,892.50	\$ 4,184.91	\$17,077.41
25	Employee 3 Grant Administrator	\$ 34.93	100	hours	\$3,493.00	\$ 1,133.83	\$4,626.83
26	Employee 4 Project Engineer	\$ 35.87	450	hours	\$16,141.50	\$ 5,239.53	\$21,381.03
27	Employee 5 Wastewater Plant Supervisor	\$ 46.34	280	hours	\$12,975.20	\$ 4,211.75	\$17,186.95
28	Employee 6 Legal	\$ 38.65	280	hours	\$10,822.00	\$ 3,512.82	\$14,334.82
29	Employee 7 Environmental Compliance	\$ 38.65	120	hours	\$4,638.00	\$ 1,505.49	\$6,143.49
30	Employee 8 Modeler	\$ 35.92	320	hours	\$11,494.40	\$ 3,731.08	\$15,225.48
31					\$95,804.60	\$ 31,098.17	\$126,902.77

	B	C	D	E	F	G	H
32	<i>Salary & Wages (Santa Fe County)</i>						
33	Employee 1 Study Manager	\$ 38.85	120	hours	\$4,662.00	\$ 1,449.88	\$6,111.88
34	Employee 2 Water Resources Coordinato	\$ 33.15	240	hours	\$7,956.00	\$ 2,474.32	\$10,430.32
35					\$12,618.00	\$ 3,924.20	\$16,542.20
36							
37	Travel						\$1,950.00
38							
39	Equipment						0
40							
41	Supplies/Materials						\$3,998.00
42							
43	<i>Contractual</i>						
44	Contractor: CDM Smith						\$ 149,968.00
45							
46	<i>Other Shared</i>						\$ 4,084.00
47							
48	Total Direct Costs						\$303,444.97
49							
50	Indirect Costs 0%						0
51							
52	Total Study Cost						\$ 303,444.97