

Border Environment Cooperation Commission

Water and Wastewater Improvement Project in Santa Rosa, Texas

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I. General Criteria

Type of Project. The project consists of the expansion of the city's water treatment plant, construction of water lines, expansion of existing wastewater treatment plant, construction of collection lines, lift stations and service connections.

Location of Project. The City of Santa Rosa is located at the intersection of State Highway 506 and State Highway 107, approximately 10 miles northwest of the city of Harlingen in Cameron County, Texas. The project is located within the 100 km border region. According to TWDB, the population in 2000 was 3,071. In addition, the population in the surrounding areas (16 colonias) is estimated at 1,173. The proposed water and wastewater improvements are designed to provide adequate services to 4,104 in-city residents and 2,040 colonias residents by the year 2020. The population estimated by then is 6,144, with an annual growth rate of 1.6%.

Description of Project and Tasks. The project includes the expansion by 0.307 MGD of the City's Water Treatment Plant for a total treatment capacity of 1.002 MGD; 19,000 linear feet of 8-inch water lines, and 86 water hook-ups. The cost of this portion of the project will be \$ 2,212,421. The wastewater improvements includes the expansion by 0.291 MGD of the City's Wastewater Treatment Plant for a total treatment capacity of 0.681 MGD; a conventional wastewater collection system consisting of 68,200 linear feet of 8-inch through 12-inch gravity sewer lines and 19,600 linear feet of 4-inch through 6-inch sewer force main; five lift stations; and 373 sewer service connections. The cost of this portion of the project will be \$ 7,494,284. The total cost of the improvements will be \$ 9,706,705.

Since 1992 the City has extended water distribution lines to three colonias and wastewater collection lines to one of the 16 colonias. In addition, the North Alamo Water Supply Corporation (NAWSC) is anticipating serving water to eight of the previously identified colonias. Consequently, the number of colonias the City is planning to provide water services to five colonias and wastewater services to fifteen.

Compliance with International Treaties and Agreements. The project is within the Agreements that the United States and Mexico have signed, such as the La Paz Agreement, Border Environmental Comprehensive Plan, Border XXI Program and the Free Trade.

II. Human Health and the Environment

Human Health/Environmental Needs. The city operates an existing Water Treatment Plant, which was completed in 1981 and provides a total treatment capacity of 0.695 MGD. The existing water supply system is unable to provide adequate water service to its current customers, nor to meet TNRCC minimum standards. Problems exist in the water system's capacity for raw water pumping, treatment, storage and distribution. In many areas, particularly along the periphery of the water system, water pressure is nonexistent during periods of greater demand.

Cameron County and the city of Santa Rosa have seen extreme population growth in the last 20 years, much of it in the form of colonias that were developed in an unregulated environment, as there was no county health department to enforce minimum standards for septic tanks or lot sizes and no subdivision regulation. Therefore the on-site systems are not in compliance with the TNRCC On-Site Sewage Facility criteria. In addition, the Texas Department of Health performed an environmental health assessment of the Santa Rosa vicinity in 1991, and concluded that nuisance conditions dangerous to public health and safety exist, resulting from poor sanitation problems in the area. Continued operation of these inadequate facilities poses a constant serious threat to human health and safety.

The city operates an existing Wastewater Treatment Plant, which was completed in 1986 and provides a total treatment capacity of 0.39 MGD. It is an extended aeration wastewater treatment facility that discharges to the North Floodway approximately 3 miles north of the city, which discharges into the Arroyo Colorado. Significant expansion of the existing wastewater collection system is proposed for areas outside the city limits of Santa Rosa that are not presently served by the system. Currently, only 3,071 persons of the 4,244 population have access to a centralized wastewater collection and treatment system. Construction of the proposed wastewater improvements, and more importantly, the ability of the residents to connect to these improvements, will eliminate contamination of water systems due to inadequate septic tanks or the use of backyard cesspools, reduce the risk of gastrointestinal diseases and infections experienced among children and adults, and improve their overall quality of life.

Environmental Assessment. An Environmental Information Document (EID) has been prepared as a supplement to an earlier EID completed in 1991. The EID was submitted to TWDB and EPA for review under the NEPA process. Although the 1991 document concluded no significant environmental impacts would occur, the EID needed updating to account for the lapse of time and any current changes in the project. The FONSI will be issued early August, 2002.

Compliance with Applicable Environmental and Cultural Resource Laws and Regulations. The following agencies were consulted in the preparation of the Environmental Information Document or received notice of public

hearing of the Environmental Information Document: Texas Historical Commission, Federal Emergency Management Agency, TNRCC, Texas Parks & Wildlife Department, National Marine Fisheries Service, IBWC, U.S. Forest Service, National Park Service, Department of Housing, Bureau of Mines, Natural Resources Conservation Service, Bureau of Reclamation, Bureau of Land Management and U.S. Geological Survey.

III. Technical Feasibility

Appropriate Technology. The proposed facilities adhere to technologies widely accepted and proven in the United States. All design improvements are in accordance with 30 TAC # 290. The city operates an existing Water Treatment Plant, which was completed in 1981 and provides a total treatment capacity of 0.695 MGD. This plant is to be expanded to provide a total treatment capacity of 1.002 MGD. The proposed modifications include an additional 0.307 MGD water treatment unit, which includes flocculator, settling basin, and filters. The design of the proposed system will comply with the minimum requirements established by the TNRCC.

The city operates an existing Wastewater Treatment Plant, which was completed in 1986 and provides a total treatment capacity of 0.39 MGD. This plant is to be expanded to provide a total treatment capacity of 0.681 MGD. It has an extended-aeration activated sludge process. Engineering efforts in addition to the plant design, include preparation of a closure plan for the sludge lagoons and O&M manual. To satisfy current TNRCC regulations, consideration for the need to obtain a 150 ft buffer zone around the plant perimeter must be included.

Significant expansion of the existing wastewater collection system is proposed for areas outside the city limits of Santa Rosa that are not presently served by the system. All housing in the proposed project area currently have indoor facilities. No dwelling rehabilitation will be necessary to allow the use of the proposed water improvements. The only rehabilitation of individual dwellings required to allow the use of the proposed wastewater facilities involves those residences that are presently using a septic tank or cesspool. Each of these dwellings will require a yard service line to connect from the dwelling's waste plumbing to the applicable section of the proposed sewer collection system connection. A total of 373 service connections have been identified. All design will comply with the TNRCC Wastewater System Design Criteria.

O&M Plan. The city of Santa Rosa has adopted a resolution for the TNRCC and TWDB regarding the commitment to personnel training for the operation and maintenance of the water and wastewater treatment plants. In addition, the Design Engineer is required to develop Operation and Maintenance Manuals for each of the proposed improvements as well as providing 24 hours of O&M training to city personnel for the new Water Treatment Plant and Wastewater Treatment Plant. The contractor is also required to develop a catalog of equipment installed and furnish replacement parts that are critical to the continued operation of proposed facilities.

Compliance with Applicable Design Regulations and Standards. The project will comply with applicable design norms from the beginning of construction and will be regulated by the TNRCC and the guidelines established by the State of Texas and the Federal Government. It should be noted that all designs for proposed improvements will be reviewed and approved by the TWDB Engineering staff and construction will be inspected on a monthly basis by TWDB field personnel. In addition, the TWDB will review and approve the O&M manuals and acceptance of each project as completed.

IV. Financial Feasibility and Project Management

Financial Feasibility.

The NADB will complete the financial analysis to determine the funding structure of the project and the user rates to guarantee the financial sustainability of the operating agency.

Estimated Cost

Concept	Amount (US\$)
Water system improvements	2,212,421
Wastewater system improvements	7,494,284
Total	\$9,706,705

2002 Water and Wastewater Expenses

Concept	Amount (US\$)
Water	\$ 169,726
Wastewater	\$ 144,836
TOTAL	\$ 314,562

Water Financial Structure

Source	Amount (US\$)	%
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TWDB (EDAP) Grant	976,500	44.1
TWDB (EDAP) Loan	172,000	7.8
NADBANK-BEIF Construction Assistance (grant)	1,063,921	48.1
Total	\$ 2,212,421	100%

Wastewater Financial Structure

Source	Amount (US\$)	%
TWDB (EDAP) Grant	5,142,300	68.6
TWDB (EDAP) Loan	870,100	11.6
NADBANK-BEIF Construction Assistance (grant)	1,481,884	19.8
Total	\$ 7,494,284	100%

In addition, the NADB is proposing Transition Assistance in the amount of \$ 1,429,454.00 to reduce the overall impact of increased debt service payments on the City of Santa Rosa ratepayers caused by the construction of the Project.

Rate Model: The rate model was developed by NADB.

SINGLE FAMILY RATES (US\$)			
	2003	2004	2005
Average Monthly Water and Sewer Bill	41.20	42.79	44.43
	2006	2007	2008
Average Monthly Water and sewer Bill	45.39	46.40	47.46

Project Management. The city has adequate personnel to handle the proposed infrastructure and to respond to any potential emergency that might arise during operation and maintenance of the project.

V. Public Participation

Comprehensive Public Participation Plan. Comprehensive Public Participation Plan was submitted by the City of Santa Rosa on May 11, 2001 and approved on May 14 of that year.

Steering Committee: The steering committee was formed on February 15, 2001 from local residents Frank Roberts, Chair and retired form US Navy; Cruz Rodriguez, housewife; Alfonso Guillén, of the Texas State College; and Diana Sanchez, housewife. This committee identified outreach activities, contacted local groups within the community, review technical project issues, disseminated information to the community. The technical work group developed to support the committee was composed of Javier Mendez, City Administrator; Keith Kindle, consulting engineer; and Enriqueta Caballero of the Texas Secretary of State of Colonias Initiatives Office.

Local Organizations: Local organizations contacted as part of the outreach include: Amigos de Valle Senior Citizen Center, Santa Rosa Independent School District, County Commissioners, and Cameron County Judge. Letters of support exist from these agencies for the project.

Public Information: Project information, such as the Facility Plan and Step II Document were available for public review at City Hall and the local library 30 days prior to the first public meeting. A fact sheet was developed and distributed to local residents and available at the public meetings.

Public Meetings: Public meetings were held on July 3 and August 14, 2001. The first BECC required public meeting was held on June 26 and the second on July 24, both in 2002. An average of 25 people attended each meeting. Exit surveys show 90 per cent support the project and the rates.

VI. Sustainable Development

Definition and Principles. The project complies with BECC's definition of Sustainable Development: *Conservation oriented social and economic development that emphasizes the protection and sustainable use of resources, while*

addressing both current and future needs, and present and future impacts of human actions□.

The water and wastewater system improvements project are centered on providing an improved quality of life for human beings.

The project provides services to households and neighborhoods where such services were either lacking or were totally inadequate. The project accounts for normal expected population growth over the next 20 years, thereby taking into account the needs of future generations.

The project provides environmental protection to soils and groundwater by eliminating the use of faulty septic tanks and cesspools.

Stakeholders for this project include the City Council, City departments that plan and operate the water and wastewater systems, the residents that will benefit from the infrastructure improvements, those who will be impacted by the construction activity and the location of the facilities.

Institutional and Human Capacity Building. An aspect of this project that will build institutional capacity is the creation of reserves for any potential emergencies. In addition, the project calls for training of facility operators and other utility personnel for proper operation and maintenance of the facilities. Safety, security and accident prevention training will also be provided. The City has also commissioned a Project Management Study by the NADB to identify institutional changes and equipment needs that may be required to manage, operate and maintain the City's utility system. The City intends to incorporate recommendations from the study to improve management capacity and provide effective and efficient services.

Conformance with Applicable Local/Regional Conservation and Development Plans. The project satisfies the TNRCC regulations that require a minimum treatment capacity for public water supply entities. Adoption of a draft water conservation plan will bring the project into compliance with the TWDB and state regulations for water conservation and drought contingency planning.

Natural Resource Conservation. The elimination of the use of inadequate on-site septic systems by providing access to a centralized wastewater collection and treatment system will lessen the loading of pollutants contained in the runoff from these areas. This will significantly reduce the adverse water quality impacts from non-point Source pollution to the Rio Grande River in the Santa Rosa area. In addition, improvements to the pumping and distribution system will allow the City to be more efficient in the treatment of water. The City has a draft Water Conservation Plan under consideration, as required by the TWDB for granting financial assistance.

Community Development. Without the water and wastewater improvements, a number of negative impacts to the community will continue, hindering community development. Future community development is made possible by having adequate infrastructure in place to accommodate addition of new businesses, schools, and industry.