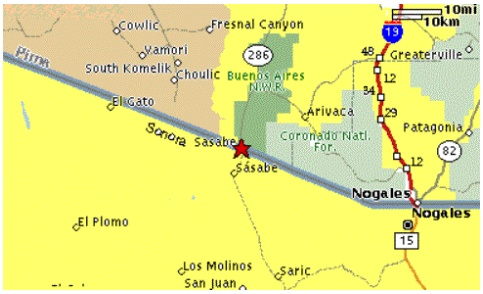
Border Environment Cooperation Commission

Construction of a Wastewater Collection System in El Sasabe, Sonora

I. General Criteria

1. **Type of Project.** *The project consists of the construction of a wastewater collection system.*
2. **Location of Project.** *The Community of El Sasabe is located in the Municipality of Saric, Sonora. El Sasabe is located 305 km north of Hermosillo, the State Capital and approximately 120 km from Tucson, Arizona. Also, El Sasabe, Arizona is located across the border from El Sasabe, Sonora. The project is located within the 100 km border region as defined by the La Paz agreement. The population is estimated at 1,081 residents and is expected to increase to 1,430 by the year 2020. The Community of El Sasabe is shown in the figure below:*



Description of Project and Tasks. *The project considers the installation of approximately 9,333 m of sewer lines, a 473 m outfall, a 1,407 m collector, 184 manholes, and 310 house connections.*

Compliance with International Treaties and Agreements. *There are no international water treaties or agreements in place between Sasabe, Arizona and Sasabe, Sonora regarding wastewater discharge volume or quality.*

II. Human Health and the Environment

1. **Human Health/Environmental Needs.** *Currently, the town of El Sasabe does not have a sewer collection system Households discharge their wastewater to individual septic tanks. However, these septic tanks were not designed properly and they overflow, especially during rain events. These raw wastewater surcharges, flow through the city streets.*

2. **Environmental Assessment.** *An transboundary impact document was prepared and submitted to the Environmental Protection Agency (EPA) Region IX for review. According to the EA, the project does not have any significant environmental impacts. Based on this determination, the EPA issued a Finding of No Significant Impact (FNSI) with a public comment period from February 12 until March 14, 2001. A Mexican Environmental Impact Document was also prepared and submitted to the State of Sonora Department of Urban Infrastructure and Ecology for approval. The determination of impact by the State of Sonora was made on February of 2000.*

3. **Compliance with Ecology and Cultural Laws and Regulations.** *EPA reviewed the EA and issued a FNSI for the project. Also, the State of Sonora has made a determination of no impact regarding the installation of the wastewater collection lines.*

III. Technical Feasibility

1. **Appropriate Technology**. *The proposed wastewater collection system adheres to the guidelines established by the Mexican Water Commission.*

   Final design has been completed for the proposed sewer lines. Overall, the project includes the construction of over 9,333 linear meters of sewer pipeline and 184 manholes. The project also contemplates a 1,407 meter long main collector, and a 473 m long outfall.

   A parallel project, though not part of the certification is the construction of a lagoon based wastewater treatment plant. The capacity of the treatment plant will be 0.061 MGD. The wastewater treatment plant is currently under construction with a grant from the State of Sonora.

2. **O&M Plan.** *The Commissariat of El Sasabe will receive guidance from the Municipality of Saric for the operation and maintenance of the system.*

3. **Compliance with applicable design norms and regulations.** *The design of the facilities, completed by the State of Sonora, was performed following common engineering practices and reference manual. In particular, the wastewater pipeline design was performed following CNA guidelines.*

V. Financial Feasibility and Project Management

1. **Financial Feasibility**.

The NADB is in the process of completing 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$)
Sewer lines (including manholes)	415,497
Wastewater collector	69,837
Outfall	18,776
House connections	140,981
Contingencies (15%)	96,764
Supervision (7%)	45,156
Tax (15%)	118,051
Total	$905,062

Current Water and Wastewater Expenses (Annual)

Concept	Current (US$)	Projected(US$)
Combined Water and Wastewater	$12,632	$25,762

Financial Structure

Source	Amount (US$)	%
State of Sonora	$452,531	50
BEIF	$452,531	50
Total	$905,062	100%

2. **Rate Model:** *The user fees for wastewater collection service will be $100 per household per month and will increase according to the rate of inflation.*

SINGLE FAMILY RATES (Pesos in real terms)			
	2000	2001	2002
Average Monthly Sewer and Water Bill	$35.00	$100.00	$100.00
	2003	2004	2006
Average Monthly Sewer and Water Bill	$100.00	$100.00	$100.00

3. **Project Management**. *The established fee will allow the municipality to maintain and operate the sewer collection system and wastewater treatment plant, as well as establish reserves for any emergencies in the system. El Sasabe has a public works department that will be able to bill the customers for the service provided.*

V. Public Participation

Comprehensive Public Participation Plan. *The Public Participation Plan was submitted to the BECC in September 1999. The plan was based on the BECC public participation guidelines and includes the required criteria elements for certification. Activities carried out thus far in fulfillment of the plan are summarized below.*

Steering Committee*: The steering committee included Mr. Alejandro Leyva Rico, Mr. Eduardo Arredondo Gortari, Mr. Francisco Isidro Villescas Coronado, Mr. Cecilio Leyva Durán, Mr. Jaime Grijalva Moreno, and Mr. Pedro Nuñez Ramirez, all citizens of El Sasabe. The committee was formed in August 1999.*

Local Organizations: *Prior to the first BECC public meeting, a meeting was held with representatives from the local government and members of the community at large. Also, at the end of the meeting an opinion survey was done, finding that the members of the community support the project extensively.*

Public Information*: The project information was made available to the public in the local government offices. Also, the public meetings were advertised in the State newspaper and flyers were distributed throughout the community.*

Public Meetings: *The BECC required public meetings were held on October 13, 1999 and December 19, 1999 to present the technical aspects of the project. A third meeting was held on January 30, 2001 to present the financial aspects of the project. During this last meeting, all of the 37 people who attended supported the project.*

VI. Sustainable Development

1. **Definition and Principles.** *The project complies with BECC's definition of Sustainable Development: "An economic and social development based on the conservation and protection of the environment and the rational use of natural resources, but considering current and future needs, as well as present and future impacts of human activities".*

   The installation of a wastewater collection system is centered on providing an improved quality of life for human beings.

   The project provides environmental protection by installing a wastewater collection system and eliminating the use of faulty septic tanks.

   Stakeholders for this project include the Commisariat of El Sasabe, the Municipality of Saric, the State Agency for Urban Infrastructure and Ecology, and the community at large A Steering Committee comprising members of the general public was formed for review and recommendations on the project.

2. **Institutional and Human Capacity Building.** *An aspect of this project that will build institutional capacity is the creation of reserves for any potential emergencies.*

3. **Conformance with Applicable Local/Regional Conservation and Development Plans.** *The project was designed by the State Agency for Urban Infrastructure and Ecology, and is part of the agency's priority projects.*

4. **Natural Resource Conservation.** *This project will likely create an incremental benefit preventing aquifer pollution due to leaks in existing septic systems.*

5. **Community Development.** *Without the wastewater collection system, a number of negative impacts to the community will continue, hindering community development.*