



**NORTH AMERICAN DEVELOPMENT BANK
FACT SHEET
PATAGONIA, ARIZONA**

- Project:** Wastewater Treatment Facility Replacement and Sewer Collection System Improvements
- Cost:** US\$2,394,185
- Sponsor:** Town of Patagonia, Arizona
- Location:** The Town of Patagonia is a small residential community located in Santa Cruz County, Arizona, approximately 18 miles from the U.S.-Mexican border. The closest cities to Patagonia are Tucson, approximately 80 miles to the north, and Nogales, about 20 miles to the southwest.
- Background:** Constructed in 1978, the existing wastewater treatment plant uses an extended aeration process for treatment and has the capacity to treat an average daily flow of 80,000 gallons. Effluent is discharged into Sonoita Creek, a tributary of the Santa Cruz River.

In November 1996, the U.S. Environmental Protection Agency (EPA) issued Patagonia a Notice of Violation because the plant's effluent exceeded permitted parameters for several contaminants. In addition, its discharge monitoring reports indicate that the facility's current treatment process is not consistently removing total nitrogen as required by National Pollutant Discharge Elimination System (NPDES) permit limits.

The town's sewer system was installed in 1965, and there have been only a few line additions and modifications since that time. There are approximately 406 sanitary sewer connections servicing mainly residential customers.

Based on periodic inspections, the Arizona Department of Environmental Quality (ADEQ) has determined that deteriorated sections of the sewer system are allowing infiltration of excess water volumes, especially during heavy rainfall events. The resulting wastewater flow rates during these events exceed current plant capacity, allowing solids and pollutants to mix with the effluent. In addition, excessive volumes of wastewater bypassed treatment and were diverted into the existing lagoons. Since the lagoons are not lined there is concern that the untreated wastewater could percolate to the bottom of the lagoons and pollute the aquifer.

Description: The project consists of constructing a new wastewater treatment plant and rehabilitating the wastewater collection lines. The project is divided into two phases, as follows:

Phase I: Wastewater Treatment Plant

Construction of a new 110,000 gallon per day, extended aeration wastewater treatment facility, including head works, anoxic basin for denitrification, two aeration basins, a clarifier, three-basin chlorine contact chamber, dechlorination and flow meter chamber, aerobic sludge digester, and sludge processing equipment.

Phase II: Sewer System

The wastewater collection system improvements include replacing approximately 612 lineal feet of 6- and 8-inch asbestos cement sewer pipes with new plastic sewer pipes, as well as the lining of approximately 6,545 lineal feet of sewer pipes ranging from 6 to 10 inches in diameter.

BECC Certification: January 27, 2000

NADB Funding:

Border Environment Infrastructure Fund (BEIF):

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|-------------------------------|---------------|
| Construction Grant Assistance | US\$1,191,434 |
| Transition Grant Assistance | US\$ 122,471 |
| Total: | US\$1,313,905 |

The construction assistance will be applied to the project's total construction costs, including construction management, while the transition assistance will be used to reduce the overall impact of increased debt service payments on Patagonia's ratepayers as a result of the project.

Other Funding Sources:

The rest of the construction costs are being covered by a grant from the U.S. Department of Agriculture Rural Development (USDA-RD), a grant from the State of Arizona through the Community Development Block Grant (CDBG) program and a loan from the Arizona Water and Infrastructure Finance Authority (WIFA).

Benefits:

The improved treatment facilities will produce a better quality effluent that complies with U.S. norms for ambient water quality. Rehabilitation of the sewage collection system will reduce the amount of untreated wastewater leaking from deteriorated lines and infiltrating into the ground water or pooling at the surface, as well as reduce peak flows to the treatment plant. As a result, the environment will be improved and health risks will be reduced for Patagonia residents.