

# Border Environment Cooperation Commission

## Wastewater Collection Project in Agua Prieta, Sonora.

### 1. General Criteria

#### 1.a Project Type

The project consists of improving and expanding the wastewater collection system for the community of Agua Prieta, in the municipality of Agua Prieta, Sonora.

This project belongs to BECC's *Wastewater Treatment and Domestic Water and Wastewater Hookups* Sectors.

#### 1.b Project Categories

The project belongs to the category of *Community Environmental Infrastructure Projects – Community-wide Impact*. The project will improve wastewater collection quality service in the community of Agua Prieta resulting in a positive impact to this community.

#### 1.c Project Location and Community Profile

The State of Sonora is located in the northeastern part of the Republic of Mexico, adjacent to the United States of America. Agua Prieta, Sonora is located in the northeastern part of the State of Sonora and neighbors the City of Douglas, Arizona, USA. About 47% of the population in Agua Prieta is employed in *maquilas*, commerce or by rendering services. The rest of the population is employed in agricultural related activities.

The following figure shows the geographic location of Agua Prieta.



**Demographics**

Population projections prepared during the development of the Final Design of the Wastewater Collection System<sup>1</sup> for Agua Prieta, Sonora were based on census data obtained by the *National Institute for Statistics, Geography, and Information* (INEGI 2000 for its initial in Spanish) and the *National Population Council* (CONAPO for its initial in Spanish). The current population (2007) has been estimated to be 70,523 inhabitants and estimations for the year 2027 forecast were 79,143 inhabitants.

**Water System**

The community has 98% water infrastructure and service coverage. The water supply is obtained from 12 water wells that produce approximately 320 lps. The system has 19,331 connections and macro-metering in 80% of its sources. The micro-metering coverage is 42.5%.

**Wastewater Collection System**

Agua Prieta has 75% sanitary wastewater collection coverage. The system consists of sewer pipes, manholes, and mains and it discharges to a wastewater treatment facility. Residents who are not connected to the wastewater collection system dispose of their wastewater in latrines and cesspools, with the associated public health and groundwater contamination risks.

**Wastewater Treatment**

Wastewater treatment is accomplished through the use of a facultative stabilization lagoon system located southeast of the community. The wastewater treatment plant's design capacity is 200 lps. Approximately 86% of the treated effluent is reclaimed and reused at the local power plant, while the remaining wastewater is disposed of in the "Agua Prieta" creek.

**Pavement and Solid Waste**

The community of Agua Prieta has a solid waste collection coverage of 100% and counts with a sanitary landfill. According to the Department of Public Works of Agua prieta, the pavement coverage is of 20%.

**1.d Legal Authority**

The project sponsor is the local water and wastewater utility (*Organismo Operador Municipal de Agua Potable, Alcantarillado y Saneamiento de Agua Prieta*, OOMAPASAP). The legal authority of OOMAPASAP is established in the Agreement that set up OOMAPASAP, which was published in the Government of the State of Sonora's Official Bulletin (May 10, 2004 Official Bulletin issue). OOMAPASAP is authorized to provide water and wastewater collection services to the community, including the design and construction of urban infrastructure projects to help enhance the provision of these types of services to Agua Prieta.

The project falls within the scope of agreements targeted at improving the environment and the quality of life of border residents, which have been signed by Mexico and the United States. The United States and Mexico have signed six major bilateral agreements related to air, water, land protection, and pollution control issues. These include:

- 1889 International Boundary Convention

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<sup>1</sup> "Expansion of the Wastewater Collection System in Agua Prieta, Sonora." Final Design developed by Éxito, S.A. de C.V. OOMAPASAP. July 2007.

- 1944 Water Treaty
- 1983 La Paz Agreement, or Border Environment Agreement
- 1990 Integrated Border Environmental Plan (IBEP)
- 1994 North American Free Trade Agreement (NAFTA)
- Border 2012 Program

The project complies with the spirit of all these agreements, and all of them have been considered since the onset of the project.

## 1.e Project Summary

### Project Description

The project consists of the expansion of the wastewater collection system in the southeast region of the community. The project cost is \$7.0 million pesos.

The project proposes the expansion of the wastewater collection system from 75% to 80% of wastewater collection infrastructure, and consists of the following:

- 12,814 m of 20 cm diameter PVC piping.
- 164 manholes.
- 778 new hookups.

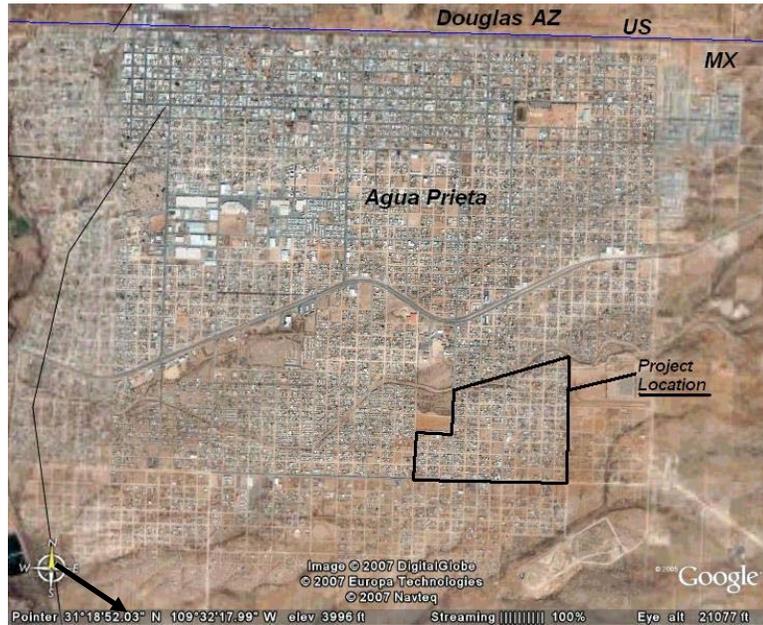
The collected wastewater in the expanded wastewater system area will be discharged to the existing wastewater collection and treatment infrastructure. The capital cost of the project includes the provision and installation of domestic hookups to the wastewater collection system.

It is estimated that the wastewater collection system collects 145 lps, by implementing the project the collected flow will increase to 154 lps. Wastewater is currently treated in a facultative lagoons system in series with 200 lps design capacity. Approximately 125 lps of the treated effluent is conveyed to the Electric Utility (*Comisión Federal de Electricidad, CFE*) facilities to be reused; the rest is disposed of in the Agua Prieta Creek.

To ensure that water discharged into the Agua Prieta Creek meets the quality parameters set forth by Mexican Official Standard, NOM-001-SEMARNAT-1996, which establishes the maximum permissible limits for contaminants in wastewater discharged to national waters and properties, OOMAPASAP will simultaneously construct necessary projects to directly send off 125 lps of untreated wastewater to the CFE facility and only the excess wastewater will be treated at the treatment plant (approximately 29 lps).

The following figure shows a schematic of the site for the wastewater collection system improvements project.

Project Site.



Project Justification

The expansion of the wastewater collection system will help to significantly reduce the contamination resulting from untreated wastewater discharges, thus reducing the potential for human contact with raw wastewater and organisms that are vectors for diseases. It will also reduce the potential for groundwater and surface water contamination by eliminating the use of cesspools and latrines. 125 lps of wastewater flow will be conveyed to the Electric Utility (CFE) for reuse, while the rest will be treated by the lagoon system. The effluent from the wastewater treatment plant will be discharged to the Agua Prieta Creek.

This project was characterized as Category 1 during the US Environmental Protection Agency (EPA) Priorization Process FY 05/06 due to the lack of wastewater collection infrastructure in the community.

**Important Issues for Certification:**

The project falls within the BECC's priority sectors and complies with General Criteria.

**Pending Issues:**

None.

## 2. Human Health and Environment

### 2.a Compliance with Applicable Environmental and Cultural Resource Laws and Regulations

The development of the proposed works will follow the guidelines established by the National Water Commission (*Comisión Nacional del Agua*, CONAGUA) for the design and construction of this type of structures. Additionally, the works to be developed are not expected to impact protected areas or ecological reserves. During the implementation of the project, the OOMAPASAP will oversee the works for conformance with the aforesaid guidelines.

Additionally, the project complies with applicable Official Mexican Standards including:

- Official Mexican Standard NOM-002-SEMARNAT-1996, which establishes the maximum permissible levels for contaminants in wastewater discharges to urban or municipal wastewater collection systems.
- Wastewater collected by the expansion of the wastewater collection system will be treated in the stabilization lagoon system. The effluent from the wastewater treatment plant will comply with standards set by the Official Mexican Standard NON-001-SEMARNAT-1996 which established final discharge parameters to the Agua Prieta Creek.
- Official Communication No. CIS/DIR.352/007 of August 13, 2007 from the National Institute of Anthropology and History (*Instituto Nacional de Antropología e Historia*, INAH), which states that there is no objection for the development of this project in the Agua Prieta area, inasmuch as there is no evidence of archeological or historical monuments or remains in the site. Based on the above, no impacts on cultural resources are anticipated as a result of the project.

### 2.b Human Health and Environmental Impacts

#### Human Health Impacts

Within the project area, residents who lack wastewater collection dispose of their wastewater using latrines and cesspools with the risk of contaminating the ground and aquifer, which is the current source of water for the city.

The lack of wastewater collection in the southern area of town has resulted in wastewater overflows and runoffs, creating a risk for the transmission of diseases due to the residents' contact with these unhealthy wastewaters. The purpose of this project is to address the existing public health and groundwater contamination risks and to prevent risks related to inappropriate wastewater management.

The development of this project will help address the aforementioned issues and will improve public health conditions for local residents as follows:

- (1) Human health conditions will be improved by reducing or eliminating wastewater overflows as a result of an improved wastewater collection system and the risk of the residents' contact with wastewater.

- (2) Reduced potential for soil and aquifer contamination may result from the inadequate use of latrines and cesspools in areas that lack wastewater collection service, as well as the use of poorly maintained lines and the discharge of raw wastewater to agricultural canals.

### Environmental and Human Health Data

Human health statistics for Agua Prieta, Son. area are limited, but there is information related to high incidence of diseases associated to inappropriate wastewater management.

The following table shows the incidence of diseases such as hepatitis and shigellosis in the US-Mexico border area.

AREA	Disease				
	Hepatitis A	Measles	Shigellosis	Tuberculosis	AIDS
Overall U.S. population	12.64	11.2	10.9	10.3	16.7
Arizona Border	39.4	9.8	38.3	6.9	15.1
California Border	30.7	61.9	22.1	12.7	22.0
New Mexico Border	46.9	14.6	21.2	7.3	3.9
Texas Border	40.4	38.9	49.1	26.5	7.9

Source: National Center for Health Statistics. Centers for Disease Control and Prevention, Vital Statistics Database. HRSA, n.d. <http://bphc.hrsa.gov/bphc/borderhealth/table1.htm>

The table shown above shows the most recent public health studies conducted in communities adjacent to the United States-Mexico border. The conditions in Agua Prieta are very similar to those of communities in the State of Arizona. As shown in the table, occurrence rates for diseases such as hepatitis or shigellosis are significantly higher in the Arizona border than in the rest of the United States.

Hepatitis A is a liver disease associated to unhealthy wastewater disposal and the use of an inadequate or contaminated water supply. Shigellosis is often the result of poor sanitation, lack of water or wastewater facilities, the use of contaminated water and food, and is a condition common to underprivileged areas.

The most common organisms or parasites found in untreated wastewater include: *E. coli* (*Escherichia coli*), cholera (*Vibrio cholerae*), hepatitis A (*Enterovirus ssp*), *Giardia* (*Giardia lamblia*), *Cryptosporidium* (*Cryptosporidium parvum*), and helminth eggs. An individual may become ill after drinking water that has been contaminated with these organisms, eating uncooked foods that have been in contact with contaminated water, or having bad hygiene habits that contribute to the dissemination of diseases by direct or indirect human contact.

Failing to implement the wastewater collection system expansion and the wastewater treatment plant will cause open-air discharges of untreated wastewater to continue, resulting in a high risk for water-borne diseases in the project area.

## Environmental Impacts

Overall, the environmental impact resulting from the implementation of the project will be positive, as wastewater collection and treatment service coverage will be increased, thus reducing the risk for wastewater seepage caused by the use of latrines and cesspools. In addition, all the project tasks will be carried out in areas of the city that have been previously impacted.

During the construction phases, minor environmental impacts will be generated by the excavation needed to install the wastewater collection pipes. These impacts include fugitive dust emissions, gases generated by construction machinery, temporary street blockage, presence of workers in the area, and fall hazards for individuals and vehicles.

A number of mitigation actions will be implemented to reduce environmental impacts during the construction phase, including the application of treated water to reduce fugitive dust emissions, vehicle tune ups to reduce emissions, placement of warning signs to prevent hazardous situations, placement of portable toilets, etc.

No negative impacts are expected during the project's operational phase, provided the project tasks are carried out according to specifications, pursuant to timing and development conditions in the final design.

### Transboundary Impact

No negative transboundary impacts are anticipated as a result of the development of the wastewater collection tasks, inasmuch as the expansion area is located south of the community. The treated wastewater will meet the quality requirements needed for disposal into the Agua Prieta Creek, which flows south away from the US-Mexico border, and will be reused by the Electric Utility.

A positive effect on the United States' side is anticipated because the risk of water-borne disease will be reduced for the border population and consequently the risk of transmitting such diseases will be lowered for the US population.

### Formal Environmental Authorization

For the construction of the wastewater collection system expansion, the Mexican Secretariat of the Environment and Natural Resources (SEMARNAT) issued an Official Communication No. DS-SGPA-UGA-IA-094-06 on February 8, 2006, stating to OOMAPASAP that the proposed works do not require an environmental impact assessment, as they will be developed within an area that has already been impacted by human activities.

As for the US Environmental Assessment Process (NEPA), a transboundary impact study was developed and submitted for consideration to the US Environmental Protection Agency (EPA). Based on this assessment, the EPA issued a Finding of No Significant Impact (FONSI) on March 20, 2007, which established that the project will not result in significant environmental impacts that may affect the US border area.

**Important Issues for Certification:**

The project addresses a major human health and environmental issues.  
Applicable environmental clearances have been obtained from Mexico and the United States.

**Pending Issues:**

- None

## 3. Technical Feasibility

### 3.a Technical Aspects

#### Project Development Requirements

The final design of the wastewater collection system was developed pursuant to technical specifications contained in the Wastewater Collection and Treatment Manual prepared by Mexico's National Water Commission (CONAGUA) and Official Mexican Standard NOM-001-CNA-1995 "Sanitary Sewerage System – Specifications for Hermeticity."

The development of the Final Design for the wastewater collection project was based on the preferred option from the alternative analysis; i.e., it included the design of gravity collection lines that will connect to the existing wastewater collection system to convey wastewater to the treatment plant or to the final disposal site (*Comisión Federal de Electricidad* facilities).

Wastewater collection system components include:

- Expansion including 12,814 m. of 20 cm diameter wastewater collection piping
- Construction of 164 manholes.
- Construction of 778 hookups.

The final design for the expansion of the wastewater collection system was reviewed jointly by the BECC and the North American Development Bank (NADB). Additionally, it was validated by the applicable regulatory agency and it was determined that it was developed according to CONAGUA norms.

#### Appropriate Technology

The project will use appropriate technology, in line with the city's operation and maintenance capacity. The project was designed to be built, operated, and maintained in a cost-effective manner to achieve the main goal of collecting wastewater produced in the expansion area. The Final Design was developed with said purpose in mind.

The project alternatives reviewed consisted basically of the following scenarios:

- a) **No-Action Alternative.** Under this scenario, residents who lack wastewater collection service would continue to discharge their wastewater into latrines and cesspools, with the resulting risks for aquifer contamination and transmission of water borne diseases. This alternative presents environmental, human health, social, and political implications that render it unviable.
- b) **Expand the wastewater collection system in the Southeastern area.** This alternative was reviewed and considered to be the preferred alternative, inasmuch as it allows for the currently unserved population to have wastewater collection service at a reasonable initial cost, with adequate subsequent operation and maintenance costs. This alternative considers discharging collected wastewater to the existing wastewater collection infrastructure.

The Preferred Alternative consists of a conventional gravity collection system that was selected due to its cost-effectiveness and ease of operation by OOMAPASAP. Given the site's topographic conditions, the project does not require a pump station.

### Wastewater Treatment System

Of the 154 lps of the total wastewater collected, 125 lps will be sent to CFE for treatment and reuse, the remaining flow (29 lps) will be treated at the wastewater treatment plant. The effluent of the Wastewater Treatment Plant will meet the provisions included in Mexican Official Standard NOM-001-SEMARNAT-1966. The operation of the lagoon system considers that the sludge generated during the wastewater treatment will comply with the Official Mexican Norm NOM-004-SEMARNAT-2002 which establishes final disposal parameters for biosolids generated during treatment. The generated sludge will be disposed in the landfill or will be used as soil improvement agent.

The sanitary wastewater collection project meets standard wastewater engineering norms, design criteria, and practices, and its design is based on technical manuals and design guidelines issued by the National Water Commission. Additionally, the specifications of the project considers Green Building principals.

### Land Acquisition and Right-of-way Requirements

Since the expanded wastewater lines will be laid on municipal rights of way and thoroughfares, no additional land needs to be purchased for the project.

### Work Tasks and Schedule

The project has been scheduled to be developed in approximately eight months, including domestic hookups to the existing sewerage system.

The tasks included in the project are as follows:

#### Organismo Operador Municipal de Agua Potable, Alcantarillado y Saneamiento de Agua Prieta

#### CALENDARIZACION DE OBRA DE ALCANTARILLADO SANITARIO



Mes	1	2	3	4	5	6	7	8
<b>Concepto</b>	<b>ATARJEJA SANITARIA</b>							
Excavacion								
Instalacion de tubo 8"Ø pvc								
Pozos de Visita								
Rellenos								
	<b>DESCARGAS SANITARIAS</b>							
Excavacion								
Instalacion de tubo 6"Ø pvc								
Rellenos								

Concurrent with the wastewater collection system expansion, OMAPASAP will develop the necessary engineering tasks to convey untreated wastewater to CFE facilities, and will also implement the necessary actions at the wastewater treatment plant to meet the required effluent quality.

### 3.b Management and Operation

#### Project Management

The project for the expansion of the wastewater collection system will be built and operated by OOMAPASAP, therefore the utility's organizational structure will be maintained.

## **Operation and Maintenance**

### **Organization**

As part of its organization structure, OMPAPASAP has a General Directorate and three divisions: the Commercial Division, the Technical Division, and the Administrative Division. The Technical Division has the necessary organizational infrastructure to build and operate the works proposed for the wastewater collection system expansion. Additionally, the utility will use its existing staff. OOMAPASAP will allocate the necessary budget funds to operate and maintain the proposed project.

### **Operation and Maintenance**

The OOMAPASAP will be responsible for the necessary budget for the operation and maintenance of the project.

### **Pretreatment Program**

So as not to interfere with the biological treatment processes carried out at the wastewater treatment facility, the Utility has implemented a continuing program to control wastewater discharges to the municipal wastewater collection system (Pretreatment). The purpose of said program is to comply with the provisions established in Standard NOM-002-SEMARNAT-1996. This program establishes wastewater quality requirements for non-domestic users through the issuance of wastewater discharge permits for private parties, including the use of pretreatment as needed.

### **Permits, Licenses, and Other Regulatory Requirements**

The community has the applicable CONAGUA authorizations for the development of the proposed project, as well as the applicable wastewater discharge permit. The wastewater collection expansion project has been reviewed by the BECC and NADB and has been validated by the CONAGUA.

#### **Important Issues for Certification:**

The Final Design was reviewed by OOMAPAS, NADB, and BECC and has been validated by the CONAGUA.

#### **Pending Issues:**

None.

## 4. Financial Feasibility and Project Management

### 4.a Financial Feasibility

The North American Development Bank (NADB), after reviewing the financial information submitted by the project sponsor (OOMAPASAP), determined that the financial capacity and structure proposed for the project is adequate. The information presented and the financial analysis includes but is not limited to:

- i) Economic and demographic information from the project area
- ii) Historic and pro-forma financial statements
- iii) Budget from 2007, income and expenditures
- iv) Project's Financial structure and Commitment Letters
- v) Historic and pro-forma operation and maintenance budget
- vi) Cost breakdown

A detailed analysis of the project's financial information is included in the financial structure proposal that will be submitted to the NADB Financial Committee for approval. Following is a summary of the financial analysis.

The total cost of the project is estimated to be \$7 Million Pesos, including supervision, expenses, unforeseen expenses and VAT.

TOTAL COST  
(Million pesos)

COCEPT	MX\$
Construction	6,580,000
Construction Administration	420,000
TOTAL	7,000,000

Based on the information presented by the OOMAPASAP to the NADB, it was concluded that the utility does not have the capacity to acquire a loan component for this project due to: a) the financial statements of the utility showed little capacity to generate sufficient resources to finance the minimum investment required for the city, b) the average water rate for domestic users in Agua Prieta, already represents a significant effort for its inhabitants, when this rate is compared to their average income, c) the utility's current debt is 65% above its profit.

As a result of these conditions, the OOMAPASAP and the NADB arranged a financial structure consisting of grants from the BEIF, the municipal government of Agua Prieta, and the utility's own resources.

The following chart shows the various sources of funding for the project.

<b>Funding Source</b>	<b>Type</b>	<b>Cost MX\$</b>	<b>%</b>
Agua Prieta/OOMAPASAP	Grant/Own resources	4,494,400	64.2%
BDAN-BEIF*	Grant	2,505,600	35.8%
<b>Total</b>		<b>7,000,000</b>	<b>100.00%</b>

\*/ Amounts in pesos are based on BEIF numbers in USD (\$232,000.)

Agua Prieta's municipal administration will be responsible for part of the total cost of the project, the funds invested will be used as the match required for the BEIF.

#### **4.b Rate/Fee Model**

Currently the OOMAPASAP has a rate system capable of providing enough income to pay operation and maintenance expenses as well as to carry on with a debt and maintain some reserves. It is noteworthy to mention that for the fiscal year 2007, the increase in rates was of 4%.

#### **4.c Project Management**

The project will be managed by OOMAPASAP, which has adequate personnel to manage the proposed infrastructure and address any potential contingencies related to the project's operation and maintenance.

#### **Important Issues for Certification:**

The project was reviewed and it was determined to be financially viable.

#### **Pending Issues:**

None.

## 5. Community Participation

### Comprehensive Community Participation Program

The Comprehensive Community Participation Plan developed by the Steering Committee was approved by the BECC on June 29, 2007. The Steering Committee was responsible for preparing an outreach program, including informing the resident of the benefits resulting from the project, as well as the associated costs and economic impacts for the community. Following is a summary of the activities carried out in each of the categories.

#### Local Steering Committee

The Steering Committee was formally established on June 26, 2007 at a meeting held at the Agua Prieta, Son. City Hall. A Board of Directors was elected, comprised of the following individuals:

Chairperson:	Mr. Adalberto Beltrán López
Vice-Chair:	Ms. Juana Ofelia Zavala Vega.
Public Meetings Official:	Mr. Manuel Pedregón Escalante.
Community Organizations Official:	Ms. Ofelia Martinez Serrano.
Outreach Official:	Mr. Efraín Martínez Ramírez.

#### Public Access to Project Information

The project's Final Design and Environmental Information Document were made available to the public by the utility (OOMAPASAP) at its office. Additionally, the utility prepared written information about the project to distribute at public meetings. Project information was available for review with the steering committee.

#### Additional Outreach Activities

Information meetings were held with local residents in anticipation of BECC public meetings.

#### Public Meetings



##### First Public Meeting

An invitation to the First Public Meeting, scheduled to be held on July 5, 2007, was published on June 27, 2007 in the newspaper. The meeting took place at the city's Public Safety Department Auditorium. The meeting was attended by members of the Steering Committee and approximately 100 residents.

During the meeting, the Chairman of the Steering Committee, Adalberto Beltrán López, introduced the members of the committee to the community and described their duties and responsibilities.

Additionally, a presentation on the technical aspects of the project was made by Wilfrido Serrano, OOMAPASAP Technical Director, establishing the project's features and scope, and specifying the

area proposed for the wastewater collection system expansion and related benefits. Additionally, 77 surveys were administered during the meeting and 84% of those surveyed said to have understood the project well and explicitly expressed their support for it.

#### Second Public Meeting

A notice for the second public meeting scheduled for September 11, 2007 was also published on Wednesday, June 27, 2007 in the newspaper.

#### Final Public Participation Report

The Steering Committee and the applicant will prepare the "Final Public Participation Report" to demonstrate that the proposed objectives were fully met to BECC's satisfaction. This document will be submitted once the second public meeting is held.

#### **Important Aspects for Certification:**

There is overwhelming community support for the project, and the corresponding information to demonstrate public support is available.

#### **Pending Issues:**

- Second public meeting.
- Final Public Participation Report

## 6. Sustainable Development

### 6.a Institutional and Human Capacity Building

Actions within the scope of the project that contribute to institutional and human capacity building at the OOMAPASAP include the following:

- Improving the utility's necessary wastewater collection and treatment infrastructure (wastewater collection lines).
- Operating a wastewater collection system that meets applicable state and federal regulations.
- Provide training to operating staff.

OOPAMASAP will provide basic technical training to the staff for the operation and maintenance of the new infrastructure that will be built as a result of the project's implementation.

### 6.b Conformance with Applicable Local, State, and Regional Laws and Regulations and Conservation and Development Plans

As referenced in Chapter 2, the project complied with all laws and regulations applicable to the subject. In addition, the project supplements the actions set forth in the Master Plan for Improvements to Water, Wastewater and Collection Services in Agua Prieta, Son., which include the need to develop basic sanitary infrastructure works for Agua Prieta.

The proposed project complements the actions considered in the 2006-2009 Municipal Development Plan, which proposes to improve wastewater collection coverage rates during the 2006-2009 administration.

At the state level, the project meets the objectives and lines of actions set forth by the 2003-2009 Development Plan for the State of Sonora, which proposes to develop appropriate wastewater treatment facilities and infrastructure, and a more efficient enforcement of environmental rules and regulations to address water management issues with a long-term vision and financially viable, community endorsed, and environmentally sustainable alternatives.

At the federal level, the project meets all applicable rules and regulations regarding wastewater collection, treatment, and disposal.

The project adheres to the US-Mexico Border 2012 Environmental Program by meeting Goal 1 (Reducing water contamination) and Objectives 1 (Promoting an increase in the number of household connections to wastewater collection and treatment services) and 4 (Promoting improved water utility efficiency). One of the program's guiding principles is reducing major risks to public health and conserving and restoring the natural environment.

### 6.c Natural Resource Conservation

The project contributes to reduce environmental deterioration by expanding existing wastewater collection lines and providing hookups to households that currently lack this service. Wastewater will be collected and conveyed to the WWTP to improve its quality, thus reducing aquifer contamination and human health risks resulting from raw wastewater discharges to streams or agricultural drains.

The project also includes the implementation of sustainable building practices that will be part of the specifications of the construction process.

### 6.d Community Development

The completion of this project is crucial to the development of the community, as it will promote a harmonious development in areas that currently lack wastewater collection and treatment services.

The expansion of the wastewater collection system will promote the development of the local community by reducing contamination caused by untreated wastewater runoff, thus improving the quality of life.

**Important Aspects for Certification:**

The project meets all applicable Sustainable Development principles.

**Pending Issues:**

None.

**Project Documentation Available:**

**Final Design of the Project for the Expansion of the Wastewater Collection System in Agua Prieta, Son.** Éxito, Consultores (OOMPAPASAP), Agua Prieta Sonora. 2007

**Environmental Assessment to the Proponed Expansion of the Wastewater Collection System in the South Sector of the City of Agua Prieta, Sonora, Mexico** Prepared for: Border Environment Cooperation Commission by Licon Engineering Company, Inc. (LEC), 2007.

**Sonora State Official Gazette, May 10, 2004.** Agreement that creates the water and wastewater utility, Organismo Operador Municipal de Agua Potable, Drenaje, Alcantarillado Tratamiento y Disposición de Aguas Residuales del Municipio de Agua Prieta (OOMAPASAP).

Sonora State Water and Wastewater Act No. 104.

**Final Public Participation Report.** (OOMAPASAP) Agua Prieta, Son, 2007