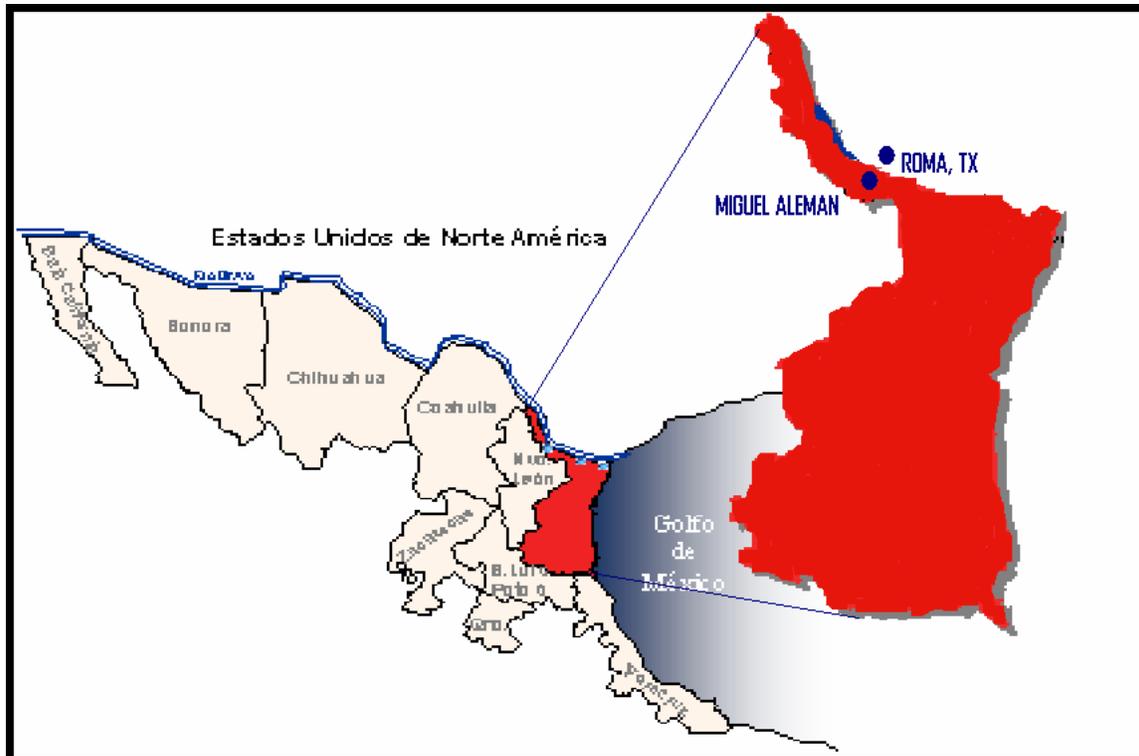


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**Border Environmental Cooperation Commission**  
**Wastewater Collection and Treatment Project in Miguel**  
**Alemán, Tamauliramas7**



**Figure 1.** Location of Miguel Alemán in the Municipality of Miguel Alemán

## Services

### Potable water system

The local Water Service and Sewer Board of Cd. Alemán, (La Comisión Municipal de Agua Potable y Alcantarillado de Cd. Alemán, COMAPA) has a system of potable water supply that begins in a Rio Grande intake pump with an extraction of 138 lps which has an elevation of 56 meters above sea level. From this point, water is pumped to a potabilizing plant that is located at a distance of 350 meters with 2 lines of asbestos-cement, which after it has passed through a process of sedimentation and filters is sent to an adjacent tank and ultimately through direct pumping to the network for distribution to the population. The service coverage the COMAPA provides is about 95%, this coverage includes the population of the town of Los Guerra, to which service is given by a pressure line that starts from the tank located in the water treatment plant.

### Wastewater Collection System

Currently, the wastewater collection system covers less area than the water system. The coverage is 78% of the population or 19,653 habitants (4,988 connections) of Cd. Miguel Alemán and the town of Los Guerra. The population that lacks sewer service uses septic tanks and discharges their wastewater in the Arroyo El Buey or into the Rio Grande.

### Treatment

The existing wastewater treatment plant is out of operation. It is almost completely obstructed and deteriorated. Since 1967, the date of its construction, it has not received any maintenance.

### **Pavement**

The City of Miguel Aleman has about 60% of its streets paved.

### **Solid Waste**

The solid waste service covers 100% of the city, and the city's solid waste is deposited in the new solid waste landfill. It is important to note that the landfill is the one proposed in the final design of a project which will be certified in the near future.

### **1.d Legal Authority**

The sponsor of the project is the Municipal Water and Sewer Commission (Comisión Municipal de Agua Potable y Alcantarillado, COMAPA) in cooperation with the Tamaulipas State Water Commission (Comisión Estatal de Agua de Tamaulipas, CEAT). The legal obligations of COMAPA are established in the Periódico Oficial del Estado de Tamaulipas No. 66 dated June 2, 2004. COMAPA has the power to provide the water and sewer services to the city while the CEAT is the regulating entity and in charge of developing improvement projects in the infrastructure of these services for the City of Miguel Alemán.

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. Both countries have signed six major bilateral agreements related to air, water, land protection and pollution control. These agreements are:

1889 International Boundary Convention

1944 Water Treaty

1983 La Paz Agreement or Border Environment Agreement

1990 Integrated Border Environmental Plan (IBEP)

1994 North American Free Trade Agreement (NAFTA)

The Border 2011 Program

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

### **1.e Project Summary**

#### **Project Description**

The project consists in the construction of a wastewater collection system, a force main, and lift stations as well as the construction of a wastewater treatment plant based on a lagoon system for the City of Miguel Alemán.

The project includes the following:

- Construction of the following collectors:
  - Los Guerra collector with 6,195 m in length in diameters of 38, 45, 60 y 76 cm.
  - Marginal collector with 4,948 m in length in diameters of 38 y 45 cm.
  - Calle 5ª collector with 316 m in length and 45 cm. in diameter.
- Construction of Pino Suárez force main with 752 m and 30 cm. in diameter.
- Construction and provision of equipment to the Cárcamo Marginal lift station.
- Provide equipment to three water lift stations:

- Cárcamo # 5
- Cárcamo # 6
- Cárcamo General
- Construction of Wastewater Treatment Plant with a capacity of 112.5 lps
  - 1st. Stage: 75 lps
  - 2nd. Stage: additional 37.5 lps

The total cost of the Project is estimated at \$6.47 million dollars.

### Project Map

Figure 2, shows the layout of the proposed sewer system for Miguel Alemán.



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water source and with the implementation of this project will be benefited due to the better quality of river water.

This project was ranked as a Category 1 under the FY 05/06 Prioritization Process of the Environmental Protection Agency (EPA) due to the lack of infrastructure for wastewater treatment.

**Important Aspects for Certification:**

The project is under the prioritized sectors of the BECC and compiles with the basic general criteria.

**Pending Issues:**

None.

## **2. Human Health and Environment**

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

The wastewater treatment plant final design took into account the recent environmental rules of the Official Mexican Standards (Norma Oficial Mexicana NOM-001-SEMARNAT-1996), which establish the maximum allowed limits of wastewater contaminants in waters and national properties.

Construction will be done according to the National Water Commission (CONAGUA) regulations for the construction of this type of facility and construction will not affect ecological reserves or protected areas. During the project implementation, the CEAT and CONAGUA will supervise the work according to these regulations.

The official document No. Z. A. 024/2002, of the National Institute of Anthropology and History (Instituto Nacional de Antropología e Historia (INAH), states it has no objection in the collector project in Los Guerra, since no evidence of monuments, archeological or historic sites are found and the rest of the proposed project takes place in urban areas already impacted. As a result, no cultural resources will be affected by the development of this project.

### **2. b Human Health and Environmental Impacts**

#### **Human Health Impacts**

The City of Miguel Alemán is located in the region known as Frontera Chica in the Northwest part of the state of Tamaulipas bordering with the Rio Grande. The local sewer system disposes wastewater to the Arroyo El Buey and the Rio Grande due to the lack of a collection system that will receive and discharge these waters for treatment, posing a direct human health and environmental hazard. This puts downstream U.S. and Mexican public health at risk as they use the Rio Grande as their main source of water.

The lack of wastewater treatment and disposal generates a serious problem by creating a source of infectious diseases. Also ground filtration causes underground water contamination and a deterioration of the environment. The purpose of this project is to take care of the public health problem and the underground water contamination as well as to avoid inherent risks due to mishandling of wastewaters.

With the implementation of this project the public health conditions will be improved in the following manner:

- (1) With the construction of the collectors, lift stations and the force main, human health will improve by eliminating any contact between the inhabitants and untreated wastewater.
- (2) By building and operating the WWTP soil and underground water pollution will be reduced
- (3) The pollution of the Rio Grande will be reduced to the benefit of downstream communities from Miguel Aleman that use river water as a source for drinking water.

## Human Health Statistics

The information and statistics about human health in the area of Miguel Alemán are limited. Table 1 shows a study about the public health of the habitants of the Mexico and United States border area. The conditions for Frontera Chica are similar to the following border areas in the state of Texas. As can be seen in Table 1 the recurrence of diseases such as hepatitis A or shigellosis is considerably higher in the border with Texas in relation to the rest of the United States.

Hepatitis A is a liver disease associated with the unsanitary sewer disposal, and polluted and inappropriate water supply. Shigellosis is frequently the result of poor sanitation, lack of water and wastewater infrastructure and contaminated food and water, common in marginalized areas.

**Table 1**  
Incidence and cases of illnesses in the border areas between the United States -Mexico

AREA	Illness				
	Hepatitis A	Measles	Shigellosis	Tuberculosis	AIDS
General Population in The United States	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 organisms or parasites more commonly found in untreated wastewaters are: *E. coli* (*Escherichia coli*), Cholera (*Vibrio cholerae*), Hepatitis A (*Enterovirus ssp*), Giardia (*Giardia lamblia*), Cryptosporidium (*Cryptosporidium parvum*) and worm eggs. If water contaminated with these organisms or food which has been cooked with this water with out proper cooking are consumed, coupled with bad hygiene habits, which permit the spreading of the diseases by direct or indirect human contact, they can be a major cause of human disease.

Table 2 shows the incidence of transmittable diseases in the project area. Gastroenteritis is the most common occurrence with a 56% of frequency in the area followed by dermatomycosis (21%) and the protozoarios infection (11%). This demonstrates the need to manage and treat wastewater in the area for later reuse and / or disposal.

**Table 2**  
Most frequent transmitted diseases in the Miguel Alemán area

Illness	Total %
Amibiasis	5%
Gastroenteritis	56%
Dermatomicosis	21%
Salmonelosis	7%
Protozoarios Infection	11%
Source: C. Miguel Alemán Tamaulipas Health Center, 2006 <sup>1</sup> .	

### Environmental Impacts

The project's environmental impacts, in general, will be a positive due to the fact that wastewater generated by the city will be collected, disposed of and be treated, reducing the risk of wastewater filtering underground because of the non-controlled discharges to superficial bodies of water. Also, with the exemption of Los Guerra collector (the INAH published a permit for the work to take place) all the work will be done in areas of the city that had been impacted previously.

During the building stages, low environmental impacts will happen as a result of digging for the installation of pipes of the collector and the force main as well as from the building of the lift station and treatment plant. These impacts include dust, gas emissions caused by the construction machinery, temporary closing of streets, workers present in the area, and the risks of people and vehicles falling into the trenches.

To reduce the environmental impact in the construction stage, a number of mitigation measures will be taken into account such as using water for dust control, tune up of the vehicles to lower emissions, posting warning signs to avoid risk situations and toilets, among others.

In regards to operation, negative impacts are not foreseen as long as these tasks are done according to specifications and taking into consideration the implementation schedule of the final design of each task, as well as making sure they comply with what is specified in the resolution given in the Manifestación de Impacto Ambiental (MIA).

### Transboundary Impacts

Negative trans-boundary impacts are not foreseen as a result of the wastewater collection and treatment project. A beneficial impact is foreseen in the U. S. since the wastewater that currently goes to the Rio Grande directly or by the Arroyo El Buey will stop thus improving the Rio Grande water quality, which is the main source of water for many downstream U.S. communities.

### Formal Environmental Clearance

Based on the General Law of Ecological Balance and Environmental Protection regarding Environmental Assessments (Ley General del Equilibrio Ecológico y la Protección al Ambiente en Materia de Evaluación del Impacto Ambiental), the Secretaría del Medio Ambiente y Recursos Naturales (SEMARNAT) determined via official communication SGPA/03.3335/05, that the

<sup>1</sup> Health Center of Miguel Aleman, Tamaulipas. 2006. Dr. Julio Cesar Cabrera. Director

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project requires a MIA, which was prepared and presented to SEMARNAT on July 17, 2007. The resolution of the MIA by SEMARNAT is pending.

In regards to U. S. environmental process (NEPA), a trans-boundary environmental information document was developed and submitted to the Environmental Protection Agency on January 14, 2007 for their review. After 30-day comment period and no comments received, a finding of no significant impact (FNSI) was issued determining that the project will not cause any significant environmental impact that may affect the border region. This document was issued on February 16, 2007.

During the environmental evaluation process the Comisión Internacional de Límites y Aguas (CILA) and its U.S. counterpart, the IBWC, were informed of the project and no negative comments were received.

**Important Aspects for Certification:**

The Project solves an important human health and environmental problem.  
Environmental authorization from the United States has been granted.

**Pending Issues:**

The authorization of the Manifestación de Impacto Ambiental of the WWTP by SEMARNAT.

## 3. Technical Feasibility

### 3. a Technical Aspects

#### Project Development Requirements

The wastewater treatment and collection system were designed according to the technical specifications of the Wastewater Treatment and Collection System Manual (Manual de Alcantarillado y Saneamiento) of the Technical Division (Subdirección General Técnica) of the CONAGUA and the Norma Oficial Mexicana NOM-001-CNA-1995 Sistema de Alcantarillado Sanitario-Especificaciones de Hermeticidad.

#### Collection System

The proposed collectors of the collection system are:

Collector	Length (m)	Diameter (cm)	Material
Los Guerra	6,195	38, 45, 60 y 76	HDP *
Marginal	4,948	38 y 45	HDP
Calle 5 <sup>a</sup>	316	45	HDP

\* High density polyethylene

The proposed pressure force main:

Force main	Length (m)	Diameter (cm)	Material
Pino Suárez	752	30	HDP

The proposed lift stations are:

Lift Station	Work
Cárcamo # 5	Provide equipment
Cárcamo # 6	Provide equipment
Cárcamo General	Provide equipment
Cárcamo Marginal	Construction and provide equipment

The wastewater collection system final design was developed under the strict specifications of the CONAGUA.

#### Wastewater Treatment Plant

The wastewater treatment plant design was based on the selected alternative which considered treatment efficiency and savings in the investment, operations and maintenance costs.

In July, 2007, the Final Design for the Construction of the Wastewater Treatment Plant of Miguel Alemán was concluded. The plant will be a lagoon type treatment plant and will have a capacity to treat an average flow in its first stage of 75 lps; the hydraulic retention time will be of 26.7 days.

With the purpose of avoiding possible filtration on the base or sides of the lagoons, it is proposed that the base and sides are made of compacted clay to 95% of the Proctor Test. Also, to protect the top of the walls from erosion caused by the waves of the treated wastewater, it is proposed

that pre-fabricated concrete slabs be installed. These should be  $f'c=250$  kg/cm<sup>2</sup> de 2.4 m x 2.4 m x 0.1 m.

## **Treatment Plant Description**

### **Pretreatment**

The untreated wastewater receives pretreatment prior to the existing main lift station that sends it to the treatment site. At this point large solids and sand are eliminated.

### **Influent Structures**

Requires a concrete structure sized 5.9 m x 4.1 m and 1.8 m deep, to be built to distribute the wastewater to be treated to the treatment train in equal volumes.

### **Primary Treatment**

Primary treatment will be via two anaerobic lagoons with a treatment capacity of 75 l/s and 37.5 l/ each one. The dimensions of these lagoons are 141.75 m in length and 66 m wide, and a variable length between 122.5/71.5 m and 66 m. wide, with a depth of 3.5 m of water.

### **Secondary Treatment**

In the first phase of secondary treatment, there will be two main lagoons each with a treatment capacity of 37.5 l/s and an organic superficial charge of 186.6 kg of BOD/ha with an area in the inferior part of 2,500,000 square meters with three sections to approximate the flow by flow pattern of the piston. The two lagoons are identical in size with 242.6 m in length and 117.20 m wide. A third lagoon, to be built in a second phase, will be 176.1 m in length and 159.7 m wide.

### **Polishing or Maturity**

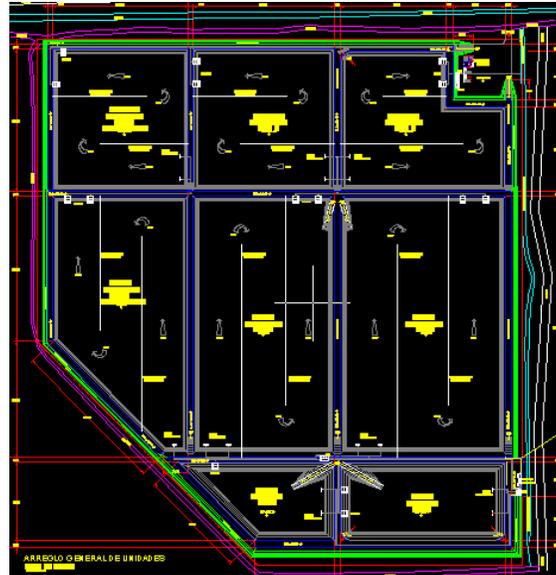
The building of three maturity lagoons is proposed (two in the first phase) with a treatment capacity of 37.5 l/s each one to receive the flow of each of the main lagoons corresponding drain. The lagoons of the first phase have an area of 1.29 ha, 1.33 ha, and the third lagoon 1.28 ha, which is the minimum required area to achieve the reduction of fecal coli forms.

The treated outflow will be discharged in the agricultural irrigation canal Los Guardados next to the treatment system.

### **Treatment Sludge**

Sludge produced during treatment will be stored and stabilized in the lagoons. They will remain there for a period of 5-7 years during which their composition will modify to become mineral. After this period the sludge will be extracted from the lagoons to dry and disposal at the landfill.

Figure 3 presents the arrangement of the wastewater treatment plant.



**Figure 3.** Arrangement of the treatment plant's system.

## Appropriate Technology

### Collection System

The construction of the collection system, lift stations and Pino Suarez force main were designed to provide an adequate collection system that operates in an efficient manner to collect and send the wastewaters of the city to the treatment plant. Due to the fact that it complements an existing collection system, and in view of the fact that the work can only be done in the site or in routes in which they are projected, the considered alternatives left are only two:

- a) **No Action.** Because of the environmental, human health, social and political implications, this option was eliminated. Under the current situation, wastewater discharged directly to the Rio Grande and the Arroyo El Buey would continue to be a hazard for human health and a detriment to the quality of surface water and a source of continued contamination of underground water.
- b) **Build the Collection and Disposal System Towards the Proposed Treatment Site.** This option was chosen with the purpose of improving the performance of the collection and treatment systems by proposing to build three collectors, build and provide equipment for a lift station, provide equipment to three other lift stations and the Pino Suárez force main, to avoid discharges of untreated wastewater into the superficial bodies of water and take the untreated wastewater to the treatment site.

## Treatment System

The wastewater treatment alternatives considered were:

- a) **No action.** This alternative was eliminated because of the risks to human health and the environment. The continuance of the raw wastewater discharges to the Rio Grande implies the risk of pollution of the main water source of many downstream communities. Also, the population's contact with untreated wastewater either by direct contact or the consumption of food that have been in contact with it represents a potential risk of transmitting water borne diseases.
- b) **Build an Aerated Lagoons-Sediment-Maturity Lagoons Wastewater Treatment System.** This option does not constitute the best option even though it takes less space than the others. The operation and maintenance costs (\$2.24 pesos/m<sup>3</sup> of treated water), as well as the need of having specialized personnel in the operations of these systems made this option to be financially unacceptable.
- c) **Build a Facultative Maturity Lagoon Wastewater Treatment System.** This option represents a lower investment cost than the previous option and does not require specialized personnel, but it does require a greater land area and additionally the operation and maintenance costs are considered high (\$1.80 pesos/m<sup>3</sup> of water treated) in comparison with the other option based on natural methods. This made this option unacceptable.
- d) **Build an Anaerobic, Facultative and Maturity Lagoons Wastewater Treatment Plant.** This option requires less land and does not require specialized personnel for its operation. On the other hand, the operation and maintenance costs are the lowest (\$1.46 pesos/m<sup>3</sup> of treated water). These factors make this option the most viable for the community.

## Land Acquisition and Rights of Way Requirements

Due to the sewer lines being installed on right-of-ways and local traffic corridors, the acquisition of additional land will not be required for this project. In regards to the land required for the construction of the Wastewater Treatment Plant, the COMAPA has the property rights of the land in question as this site contains the existing oxidation lagoon system whose useful life has concluded. It is estimated to have been built in the early 70's. The tract of land has an area of 16.6 hectares. The BECC has the required title documents.

## Work Tasks and Schedule

The construction of the collector Los Guerra took place between October and December of 2006, and in the case of the Marginal collector and lift station, their construction is scheduled to start at the beginning of September of 2007 and conclude in November of the same year. The construction of the remainder of the collection system and the wastewater treatment plant is estimated to take place in 2008.

Figure 4 shows the project's schedule.



### **Operations and Maintenance**

The Operation and Maintenance Manual developed for the final design includes the main activities for preventive maintenance of the collection and wastewater treatment systems. The operation and maintenance of the treatment system will be the responsibility of COMAPA with the supervision of technical personnel of CEAT.

The wastewater treatment plant will have a qualified chief operator who will be trained by CEAT in the operation of wastewater treatment systems. This chief operator will have two operators for maintenance duties.

The Operations and Maintenance Manual has the objective of providing useful tools to carry on the activities related to quality control of the effluent of the treatment system and the operation and failure prevention of the system. The well functioning of the treatment system rests on good quality outflow. The preservation of the treatment systems components such as pumps, gates, valves as well as the slopes and side structures, etc. is a task that has to be scheduled and remain constant.

### **Pretreatment Program**

Given that only domestic users will use the proposed project, the COMAPA requires as a pretreatment program that complies with the Norma Oficial Mexicana NOM-002-ECOL-1996, which establishes the maximum limits of allowed pollutants in wastewater discharges to the municipal sewer system. The compliance will be under the authority of COMAPA with support from CEAT.

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

The City of Miguel Alemán has the CONAGUA permits for the extraction of potable water and the discharge of wastewater, as well the environmental authorizations required for the project's development. The wastewater collections and treatment projects have been reviewed by BECC, EPA, CEAT and the North American Development Bank (NADBANK) and validated by CONAGUA.

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

The final design was reviewed by EPA, BECC, CEAT and NADBANK and validated by CONAGUA.

#### **Pending Issues:**

None.

## 4. Financial Feasibility and Administration of the Project

### 1. Financial Feasibility

The North American Development Bank (NADB) reviewed the financial information presented by the project sponsor and, based on it, determined that the financial and structural capacity proposed by the COMAPA Miguel Alemán is adequate. The information presented and the financial analysis includes, among other items:

- Historic Financial Statements;
- Financial structure of the project;
- Investment budget;
- Budget for operation and maintenance, historic and pro forma; and
- Economic and demographic information of the project area.

The following is a summary of the financial analysis. The total cost of the project is estimated at \$6.47 million dollars, including the costs for construction and supervision.

Item	Quantity (Millions of Dollars)
Construction	6.31
Supervision	0.16
TOTAL	6.47

The COMAPA proposes a financial structure that will allow the implementation of the project, as further indicated:

Financial Source	Amount (Millions of Dollars)	%
Mexico	4.93	76
NADB-BEIF Construction Assistance	1.54	24
TOTAL	6.47	100

### 2. Fee/Rate Model

The annual budget of the COMAPA will cover the operation and maintenance expenses, such as water treatment and distribution, wastewater treatment and collection, reserve funding, as well as necessary maintenance and improvements to the water and wastewater systems.

### 3. Project Management

The project will be managed by the COMAPA who has adequate staff to manage the proposed infrastructure and address any potential emergency related to the operation and maintenance of the project.

## 5. Public Participation

Community Environmental Infrastructure Project -Community-wide Impact

On June 4, 2007, the Public Participation Plan was approved by the BECC. It was developed by the steering committee who prepared a program to inform the community about the project's certification, the benefits of the project for the community, as well as of the costs and the financial impacts on the city.

### Local Steering Committee

The steering committee formation meeting was held on May 22, 2007 in the offices of the COMAPA, with Mayor Alfonso Ramirez Rodríguez in attendance. The steering committee elected the following:

President: Marco Moreno Leal, public accountant citizen of the community.

Secretary: Profr. Cornelio Garza López, citizen of the community

Alternates:

- Architect. Lucila Barrera Garza
- Mr. Santos Amador Morales
- Attorney Carla Hernández de Saenz
- Mr. Román K. González.
- Dr. Maria Luisa Rodríguez

### Public Access to the Project's Information

#### Public Notice

The steering committee with the support of COMAPA, developed information of the project and designed pamphlets and fliers that were distributed in meetings with different organizations, local committees, non-profits and service organizations. An intense informational campaign was done in the press, radio and television. All the technical and financial information of the project was made available to the public for their review.

#### Additional Outreach Activities

Several information meetings were held with community, social, economic and service groups prior to the BECC required public meetings. Among these organizations were the Rotary Club, Universidad Miguel Aleman, Chamber of Commerce, Cattleman's Association, Business Association and several educational institutions.

### Public Meetings

#### First Public Meeting

The 30-day announcement for the first public meeting was published in the newspaper El Mañana of Reynosa on July 13, 2007 for a 6:30 PM meeting on Monday August 13 of 2007. The meeting was held in the Chamber of Commerce of Miguel Alemán. Mayor Alfonso Ramírez Rodríguez was present, members of the steering committee, the General Manager of COMAPA, Rosalva de Garza Ortiz and a representative of the



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State of Tamaulipas Water Commission. Approximately 50 people attended the event. During the event, 42 surveys were applied, in which, 100% of the people surveyed said that they had understood the project and strongly support it.

**Second Public Meeting**

The second public meeting is scheduled to take place on September 11, 2007 at the same location.

**Final Public Participation Report**

The steering committee and sponsor will prepare the Final Public Participation Report, which will demonstrate the objectives were met per BECC requirements.

**Important Aspects for Certification:**

The project enjoys strong support from the community and the supporting documentation is available.

**Pending Issues:**

The 2nd public meeting scheduled for September 11, 2007. The Final Public Participation Report is also pending.

## **6. Sustainable Development**

### **6. a Institutional and Human Capacity Building**

The project activities that strengthen the human and institutional capacity of the COMAPA of Miguel Alemán are:

- Improvement of the necessary collection and wastewater disposal infrastructure of the COMAPA.
- Construction of the wastewater treatment system.
- Operation of a wastewater collection system that complies with the required state and federal regulations.
- Training of the operation and maintenance personnel.

CEAT will provide the basic technical training for the operations personnel of COMAPA for the operation and maintenance of the new infrastructure. Operations and maintenance training will be provided to the personnel before the WWTP starts operations and technical personnel from CEAT will provide the necessary technical support to COMAPA.

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

As referred in Chapter 2, the project complies with all applicable laws and regulations. Also, this project complements the recommendations proposed in the Master Plan for the Improvement of the Potable Water Services, Wastewater Collection and Treatment in Miguel Alemán, Tamaulipas. Among the recommendations is the necessity of developing basic wastewater infrastructure in Miguel Alemán. With the project's implementation the risks related to the mismanagement of wastewater will be eliminated and treated wastewater will be used for other purposes.

The project falls under the Border 2012 Environmental Program by meeting with Goal 1 (reduce water pollution) and Objective 1 (promote the increase of domestic outlets to the treatment and collection system) and Objective 4 (promote improvements in the efficiency in the organizations that administer water). One of the guiding principles of this program is to reduce major risks to public health and conserve and restore the natural surroundings. The project adheres to the State's Development Plan for Urban, Environmental Protection, Social and Health Development component.

### **6. c Natural Resource Conservation**

The project contributes to diminish the environment's deterioration by construction of the collector and the lift stations that will collect and take the wastewater to the new WWTP where its quality will be improved. The purpose is to reduce the risks of contamination of water and the risks to human health that the discharge of raw wastewater represents to the Arroyo El Buey and the Rio Grande. The project includes the practices of sustainable construction (green building) which will be included as part of the building specifications.

### **6. d Community Development**

The implementation of this project is of vital importance for the development of the community. This project will cause the reduction of the conditions which cause water borne viral diseases due

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to the inadequate disposal of wastewater. Furthermore, the improvement of the collection system promotes community development since it helps reduce the pollution in city areas and improves the quality of life of the citizens of Miguel Alemán, and the treated water can be used for agriculture as well as for urban needs.

**Important Aspects for Certification:**

The project complies with all sustainable development requirements

**Pending Issues:**

None.

**Available Project Documentation (available in Spanish only):**

- Oficio de fecha 23 de Noviembre de 2001 en el que la COMAPA solicita al INAH un dictamen sobre la existencia de sitios arqueológicos en la zona de Miguel Alemán.
- Oficio No. Z.A. 024/2002, en el que el INAH establece que no existe inconveniente para el desarrollo de este proyecto en el área de Miguel Alemán debido a que no hay evidencia de monumentos o vestigios históricos o arqueológicos en el lugar.
- Resolución de la EPA “Finding of No Significant Impact” (FONSI) de fecha 16 de febrero de 2007.
- Consulta ante SEMARNAT para determinar competencia y modalidad de evaluación ambiental, Oficio de fecha 29 de agosto de 2005, COMAPA.
- “Respuesta de SEMARNAT sobre modalidad de Estudio de Impacto Ambiental”, Oficio No. SGPA. 03.3335/05, Delegación Federal Tamaulipas, Subdelegación de Gestión para la Protección Ambiental y Recursos Naturales. 12 de Septiembre de 2005.
- Proyecto Ejecutivo de Alcantarillado de Miguel Alemán, Municipio del mismo nombre, Tamaulipas. Elaborado por la empresa ISO Desarrollos e Ingeniería, S. A. de C.V. COCEF, Diciembre de 2005.
- Proyecto Ejecutivo de la Planta de tratamiento de Aguas Residuales de Miguel Alemán, Tamps. Elaborado por la empresa AyMA Ingeniería y Consultoría, S. A. de C.V. Julio de 2007.
- “Dictamen del Impacto Ambiental del proyecto, Delegación Estatal de la SEMARNAT en Chihuahua, Mayo de 2007.”)
- Plan Maestro para el mejoramiento de los servicios de Agua Potable, Alcantarillado y Saneamiento en Miguel Alemán, Tamps. Elaborado por la empresa Estudios y Proyectos MORO S.A. de C.V. - Tláloc Ingeniería (COCEF, Diciembre de 1999).