CERTIFICATION PROPOSAL

WASTEWATER COLLECTION AND TREATMENT PROJECT
REYNOSA, TAMAULIPAS

Revised: May 6, 2016

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CONTENTS

EXECUTIVE SUMMARY

WASTEWATER COLLECTION AND TREATMENT PROJECT REYNOSA, TAMAULIPAS

Project:

The proposed project consists of the expansion of the existing 5.7 million gallons per day (MGD) (250 liters per second (lps) Wastewater Treatment Plant No. 2 (WWTP-2) serving the south sector of Reynosa, Tamaulipas by building two new treatment modules with 5.7 MGD (250 lps) capacity each along with the construction of Lift Station No. 278 and the rehabilitation of Lift Station No. 1 in the north sector of Reynosa ("the Project").[1] The proposed wastewater infrastructure will be operated by the local water and wastewater utility –*Comisión Municipal de Agua Potable y Alcantarillado de Reynosa* (COMAPA).

Project Objective:

The purpose of the Project is to provide improved access to sustainable wastewater collection and treatment services by expanding the capacity of the WWTP-2, building lift station No. 278, and rehabilitating lift station No.1, reducing the risk of untreated or inadequately treated wastewater discharges and improving the quality of effluent discharges to receiving water bodies, thus, helping to reduce water pollution and the risk of waterborne diseases.

Expected Project Outcomes:

The environmental and human health outcomes anticipated for the Project include:

- Increased access to adequate wastewater collection services for 28,623 existing sewer connections;[2]
- Increased access to wastewater treatment services for 44,891 sewer connections receiving this service for the first-time;[3]
- Increase the wastewater treatment capacity by 11.4 MGD (500 lps);

[1] The Project combines three separate project certification applications submitted and selected through the Border Environment Infrastructure Fund (BEIF) prioritization process. The three applications are: Rehabilitation of Pumping Station #1; Construction of Pumping Station #278, and Expansion of the Wastewater Treatment Capacity in Reynosa, Tamps.

[2] Estimate based on 23,231 benefited connections for lift station 1 and 5,392 for lift station 278.

[3] Estimate based on a wastewater collection volume of 55 gallons/resident/day, a wastewater treatment deficit of 8.97 MGD, and an average of 3.63 persons per household, according to the 2010 Census developed by INEGI.

- Eliminate approximately 8.97 MGD (393 lps)[4] of untreated or inadequately treated wastewater discharges.

Population Benefitted: 266,853 residents of Reynosa, Tamaulipas[5]

Project Sponsor: *Comisión Municipal de Agua Potable y Alcantarillado de Reynosa* (COMAPA).

Project Cost: US$15,658,735.

BEIF Grant US$7,080,512.

Uses and Sources of Funds:
(US$)

Uses	Amount	%
Conveyance Infrastructure and Equipment*	$ 1,350,413	8.6
WWTP-2 Capacity Expansion	7,227,810	46.1
Construction related to lift stations No. 1 and No. 278	5,900,426	37.7
Contingency	590,043	3.8
Supervision	590,043	3.8
TOTAL	**$ 15,658,735**	**100.0**

* Includes costs related to the following components: Force main 1 for lift station No. 1, force main for lift station No. 22, pumps for lift stations No. 30 and No. 10, and Supervisory Control and Data Acquisition (SCADA) system for lift station No. 30 and WWTP-2.

Sources	Type	Amount	%
Mexico[6]	Grant	$ 8,578,223	54.8
NADB-BEIF Construction Assistance[7]	Grant	7,080,512	45.2
TOTAL		**$ 15,658,735**	**100.0**

[4] This value is related to the estimated flow of untreated or inadequately treated wastewater being discharged by Reynosa. This flow estimate does not include the total discharge volume that is expected to be treated in the future at the proposed wastewater treatment facility.
[5] Source: Calculation based on the Wastewater Treatment Project Final Design, which considers an 8.97 MGD wastewater treatment deficit and a total wastewater collection volume of 55 gallons/resident/day; plus 103,900 residents benefitted by the lift stations 1 and 278.
[6] Mexico's funding participation for this Project is MX$132.35 million (US$8.58 million), confirmed by CONAGUA through *Oficio* B00.7.04.-160 dated October 2, 2015. This amount is part of a total Mexican Match Credit of MX$166.95 million, requested by CONAGUA through the following *Oficios*: B00.05.06.-00185 (8/30/2012); B00.05.06.-174 (9/17/2012); B00.05.06.-00138 (6/24/2013); B00.05.06.-091 (5/26/2014); B00.7.04.-011 (1/29/2015); B00.7.04.-135 (7/28/2015). The aforementioned communications related to Match Credit were approved by EPA Region VI on August 3, 2015, and once the Project is certified the match will be validated.
[7] BEIF funding breakdown is US$5,900,426 for construction, US$590,043 for contingencies and US$590,043 for supervision, all including 16% VAT.

CERTIFICATION PROPOSAL

WASTEWATER COLLECTION AND TREATMENT PROJECT REYNOSA, TAMAULIPAS

1. ELIGIBILITY

Project Type

The Project falls within the eligible category of wastewater collection and treatment.

Project Location

The Project is located in Reynosa, Tamaulipas, adjacent to the U.S.-México border and across from Hidalgo, Texas, in the border region defined as the area within 100 kilometers (62 miles) of the U.S.-México international border.

Project Sponsor and Legal Authority

The public sector Project sponsor is the local water and wastewater utility, *Comisión de Agua Potable y Alcantarillado de Reynosa* ("COMAPA" o "the Utility"). The legal authority of COMAPA is established in Decree No. 255 of the Fifty-Eighth Constitutional Legislature of the Free and Sovereign State of Tamaulipas, published on April 2, 2003, which provides for the establishment of a municipal public agency with legal authority and equity capital, whose purpose is to provide water, wastewater collection, and treatment services to the Municipality of Reynosa, Tamaulipas.

2. CERTIFICATION CRITERIA

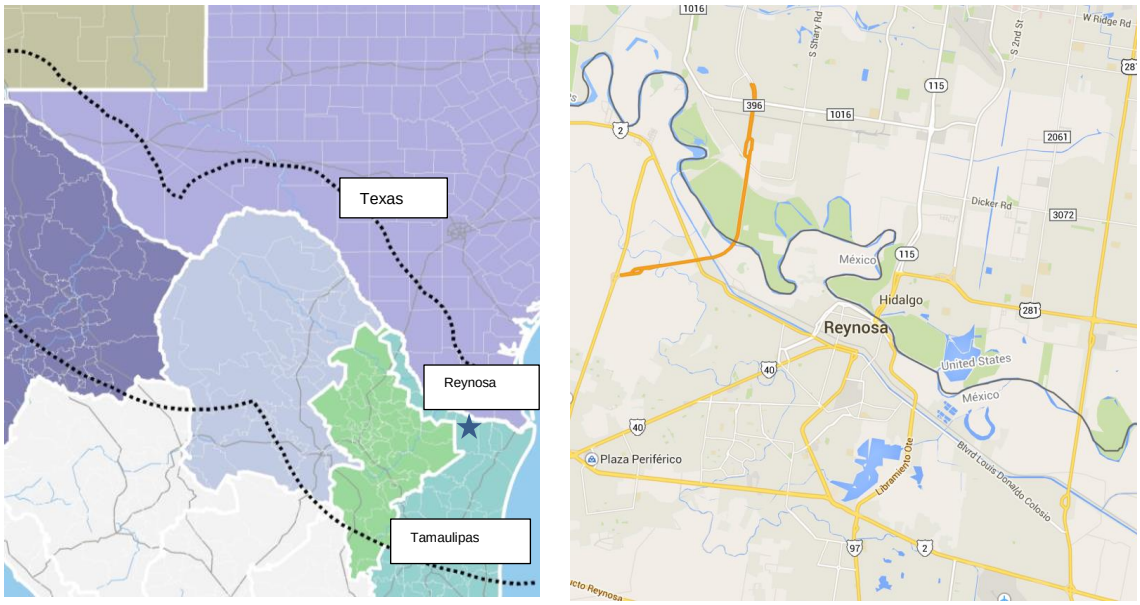
2.1. TECHNICAL CRITERIA

2.1.1. Project Description

Geographic Location

The Project is located in Reynosa, head of the municipality of the same name, in the State of Tamaulipas. The city of Reynosa is adjacent to the U.S.-México border, across from Hidalgo, Texas. Figure 1 shows the approximate location of the Project.

Figure 1
PROJECT VICINITY MAP



General Community Profile

As a result of its geographic location near the Texas border, Reynosa is one of the busiest commercial border crossings of the North American Free Trade Agreement (NAFTA) highway (three international bridges operate in the region), offering direct access to distribution routes into Central and Eastern United States (U.S.).[8]

Reynosa's economy is mainly driven by the oil industry and the maquiladora sector, which is anchored in a well-developed infrastructure (12 industrial parks) and qualified labor force with extensive experience in electronics, metal fabrication, automotive and medical device manufacturing.[9]

According to data from the last Population and Housing Census conducted by Mexico's National Statistics and Geography Institute (Instituto Nacional de Estadística y Geografía "INEGI"), the Municipality of Reynosa had a population of 608,891 residents in 2010, of which 40.3 percent were economically active.[10] Based on projections prepared by the Mexican National Population Council (Consejo Nacional de Población "CONAPO"), as of 2015, the municipality population is approximately 681,251, whereas city population is 660,423.[11] The estimated monthly average

[8] *Reynosa, Ayuntamiento 2013-2016*. "Do Business in Reynosa." Web. Accessed on September 2, 2015.
[9] *Op. cit. Reynosa, Ayuntamiento 2013-2016*. "Do Business in Reynosa." Web. Accessed on September 2, 2015.
[10] INEGI. "*Censo de Población y Vivienda 2010*." Web. Accessed on September 2, 2015.
[11] CONAPO. "*Tamaulipas: Proyecciones de población de localidades seleccionadas, 2010-2030*." Web. Accessed on September 2, 2015.

income per capita for the municipality was MX$3,151 (approximately US$239) in 2010 with 33.7 percent of its residents living below the poverty level.[12]

The following table summarizes the status of public services provided by COMAPA in Reynosa.

Table 1
BASIC PUBLIC SERVICES AND INFRASTRUCTURE (COMAPA)

Water			
Coverage:[1]	96 %		
Water supply source:	Rio Grande		
Number of hookups:[2]	224,962 (215,417 domestic)		
Wastewater Collection			
Coverage:[3]	93%		
Number of connections:[2]	217,333 (207,945 domestic)		
Wastewater Treatment			
Coverage:[4]	76 % (Once the Project is operational the coverage will be 100%).		
Treatment Facilities:	**Plant**	**Type**	**Capacity**
	1	Activated Sludge	22.8 MGD 1000 lps
	2	Trickling Filters (Module 1)	5.7 MGD 250 lps
Solid Waste			
Solid waste collection:	95 %		
Final disposal:	Landfill		
Street Paving			
Coverage:	55%		

[1] Source: INEGI. 2010 Population and Housing Census
[2] Source: Data provided by COMAPA de Reynosa, March 2015.
[3] Source: Calculation based on water and wastewater connection data provided by COMAPA de Reynosa, March 2015.
[4] Service coverage for wastewater treatment equals the percentage of discharges collected through the centralized collection system treated by a centralized wastewater treatment facility.
lps= liters per second

Local Wastewater System Profile

Reynosa currently has 28.5 MGD (1,250 lps) of wastewater treatment capacity in two treatment plants: WWTP-1 serving the north sector and WWTP-2 serving the south sector, which have 22.8 MGD (1,000 lps) and 5.7 MGD (250 lps) capacity, respectively. The current wastewater flow generated by the city exceeds the existing treatment capacity. As a result, approximately 9 MGD

[12] CONEVAL. "*Informe Anual sobre la Situación de Pobreza y Rezago Social: Reynosa, Tamaulipas*." Web. Accessed on September 2, 2015.

(400 lps) of untreated or inadequately treated wastewater are being discharged into the Rio Grande. This existing condition was the basis for selection by the US Environmental Protection Agency for funding from the Border Water Infrastructure Program.

Faced with this problem, Mexico's National Water Commission (CONAGUA), within the scope of the Project, has invested funds to expand WWTP-2 by building two modules with 5.7 MGD (250 lps) capacity each and implementing improvements to lift stations 22 and 30, which convey wastewater to WWTP-2, in order to meet the treatment capacity required to meet existing needs and flows that may increase in the immediate future.

In addition to the lack of wastewater treatment capacity, lift stations 1, 2, 7, and 8 in the city's north sector have exceeded their service life and experience leaks and recurrent problems that also result in raw wastewater discharges into the Rio Grande. The proposed Project will consolidate lift stations 2, 7 and 8 into one lift station (278) and will rehabilitate lift station No. 1, in addition to improving the lift stations at WWTP-2 (30 and 22), so that wastewater can be conveyed to the treatment facilities avoiding leaks and spills.

This Project intends to reduce the risk of exposure to untreated wastewater for Reynosa residents, and will prevent the contamination of major water bodies such as the Rio Grande. The Project will benefit approximately 73,513 households, or an estimated 266,853 residents. The Project will allow the wastewater flow (approximately 9 MGD/400 lps) currently pumped from the city's south sector to WWTP-1 in the north and discharged without treatment, to be conveyed directly to WWTP-2 located in the south sector using less energy, as the wastewater will be in closer proximity to the facility.

Project Scope

The Project consists of improvements to the wastewater collection and treatment infrastructure in the city of Reynosa, which will result in providing wastewater treatment coverage to 100% of the community.

The Project includes the following components:

- *Wastewater collection infrastructure*, including the construction of lift station No. 278 (2 MGD/88 lps), the rehabilitation of lift station 1 (8.22 MGD/360 lps), improvements to lift stations at WWTP-2 (LS-30 (13.7 MGD/600 lps) and LS-22 (4.6 MGD/200 lps)), approximately 3,182 linear feet (970 linear meters) of gravity sewer lines, 18,904 linear feet (5,762 linear meters) of force main, and 18 manholes.
- *Increased capacity for Wastewater Treatment Plant No. 2* (WWTP-2), consisting of two treatment modules based on "trickling filters," with capacity to treat 5.7 MGD (250 lps) each.
- *Decommissioning of three lift stations (2, 7, and 8)*

The final design for WWTP-2 provides for the expansion of treatment capacity to 28.5 MGD (1,250 lps) by adding two additional treatment trains with 5.7 MGD (250 lps) capacity each. The Project includes an 11.4 MGD (500 lps) capacity increase. The wastewater treated by the WWTP-2 will be discharged into an adjacent agricultural drain (Rhode Canal), which conveys the

effluent to Irrigation District No. 026 and eventually flows into the Laguna Madre. On April 15, 2015, CONAGUA issued Memorandum BOO.811.02.01-039, which states that application CNA-01-012, corresponding to the technical modification of Wastewater Discharge Permit No. 06TAM100226/24HADA14, is in the process of being recorded in the Public Registry of Water Rights.

The following figures show the components proposed for the Reynosa Wastewater Collection and Treatment Project.

Figure 2
WASTEWATER COLLECTION AND TREATMENT PROJECT FOR REYNOSA

Figure 3
LIFT STATION 278 AND CONVEYANCE LINES

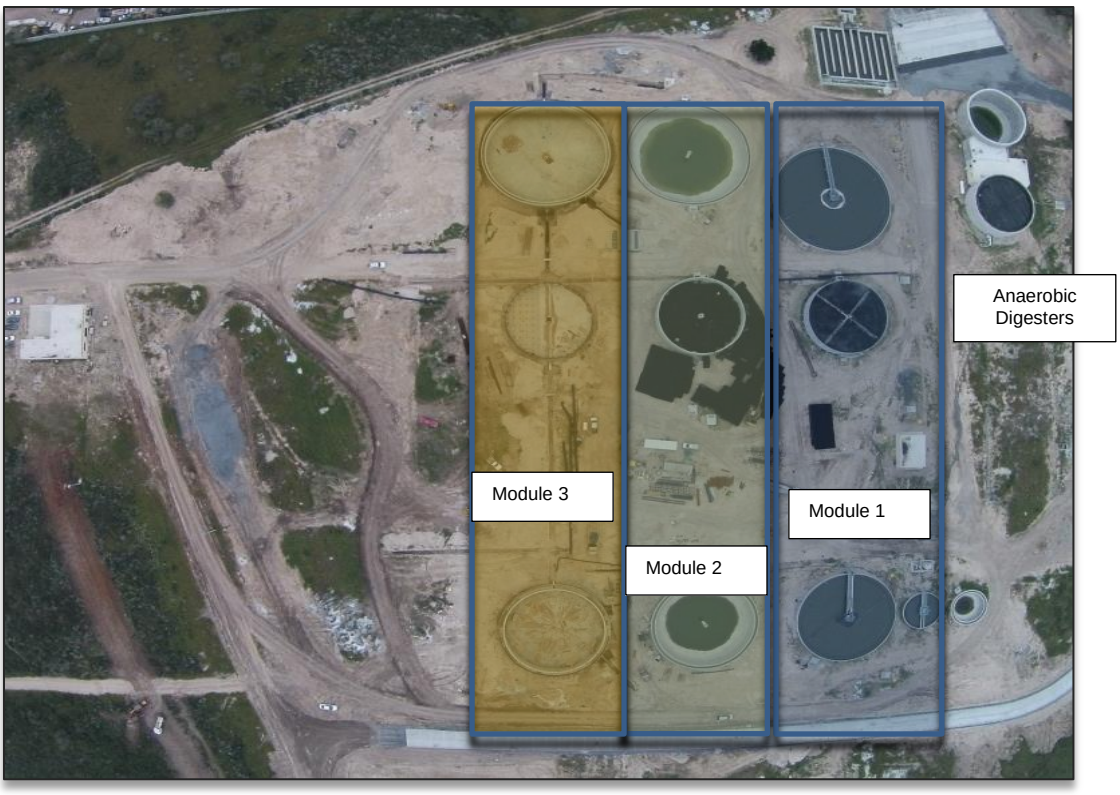
Figure 4
LIFT STATION 1 AND CONVEYANCE LINES

Figure 5 shows a view of the WWTP-2 under construction. Module 1 is in operation with 5.7 MGD (250 lps capacity); wastewater treatment modules 2 and 3 are complete and under testing; it is anticipated for both modules to become operational in early 2016; sludge treatment train will be completed by the second quarter of 2016.

Once the three modules at WWTP-2 are in operation, Reynosa will have a total of treatment capacity of just under 40 MGD (1,750 lps), which will be enough to treat 100% of the flow collected by the local wastewater system, which is estimated to be 37.5 MGD (1,643 lps).[13]

The sludge generated by the WWTP-2 will be digested in anaerobic reactors also shown in Figure 5. A by-product of anaerobic digestion is primarily methane. This gas is burned to heat the sludge in the digester in order to accelerate its breakdown and reduce the emission of greenhouse gases into the atmosphere. In the future, this gas could be used to produce electricity, contributing even more to the reduction of greenhouse gases. Sludge will be sent to the municipal landfill for disposal, and eventually, if the applicable analyses are favorable, it may be used as an agricultural soil enhancer.

Figure 5
LAYOUT OF WWTP -2 IN REYNOSA



Lift stations 1 and 278 will require approximately 15 months for construction, once the Project receives the Notice to Proceed. Potential factors affecting the Project completion timeline, such as issues with weather or the delivery of the materials, were taken into account to estimate the following milestones.

[13] Source: Estimations provided by COMAPA Reynosa

Table 2
PROJECT MILESTONES

Key Milestones	Status
Procurement	Anticipated to be complete in the second quarter of 2016
Construction period	15 months from the issuance of a Notice to Proceed

2.1.2. Technical Feasibility

Design Criteria

Final designs for the lift stations and the WWTP-2 in Reynosa were completed in accordance with the recommendations included in the Water, Wastewater Collection and Treatment Manuals (*Manuales de Agua Potable, Alcantarillado y Saneamiento*, MAPAS) developed by Mexico's National Water Commission (CONAGUA), and include the implementation of green building practices as part of the technical construction specifications. An extensive effort was made to achieve optimal energy efficiency and operational performance. These final designs were reviewed by CONAGUA, BECC, NADB, and Tamaulipas State Water Commission (*Comisión Estatal de Agua de Tamaulipas*, CEAT). The following letters were issued for the final designs of the Project by CONAGUA:

- Technical validation of the WWTP-2 capacity expansion (BOO.05.06-025, January 27, 2014)
- Technical validation of lift stations 1 and 278 (BOO.05.06-040, March 11, 2013)

Selected Technology

As part of the development of the Wastewater and Treatment Project for Reynosa, a Facilities Plan was completed during the planning phase, for which different alternatives were evaluated based on the following attributes:

- Constructability
- Capital cost
- Operation and Maintenance (O&M) cost
- Material and equipment reliability
- Environmental impact
- Social/community acceptance
- Topography
- System reliability
- Rights of way and easement requirements
- Pavement removal and replacement
- Technology and sustainable practices

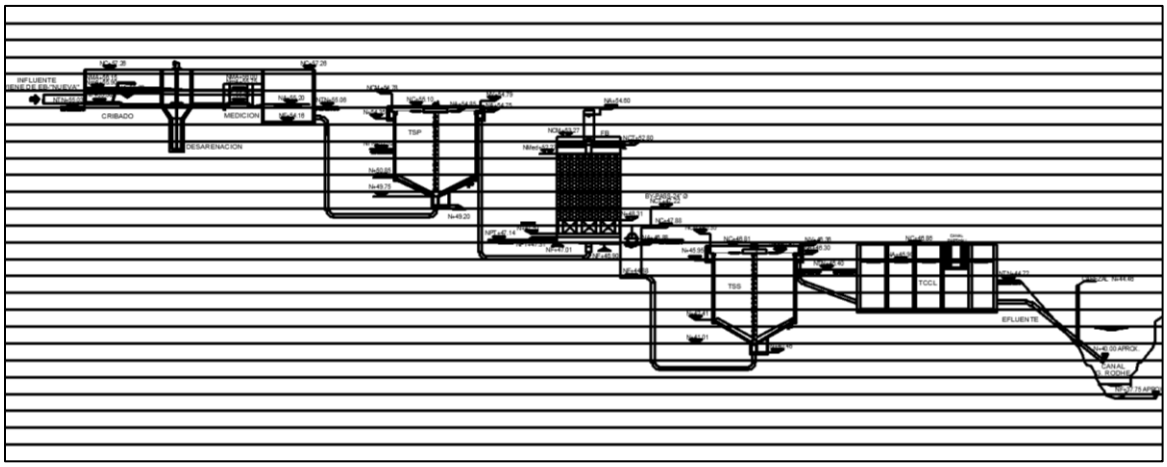
In order to reduce costs and make the best use of the site's natural topography, the shortest possible routes were reviewed to install outfalls and collectors for lift stations 1 and 278.

Sewer pipe diameters were calculated using slopes and velocities aimed at preventing silting, septic conditions, and over excavation, and minimizing the use of pumping facilities that might increase Project costs. Maximum flow rate, full build-out in the Project areas and treatment capacity were also taken into consideration for pipe diameter requirements.

With respect to the WWTP, based on discharge quality requirements established by CONAGUA, the availability of land, as well as climate conditions in the area, the analysis of Project alternatives initially considered several options which included the use of pond systems, trickling filters, and other activated sludge processes. Among the process alternatives reviewed, the trickling filters process provides the features that can most reliably meet the effluent limitations established by CONAGUA for the resulting effluent.

Additionally, the trickling filters system was selected as the preferred alternative because the initial capital cost and the O&M costs are less, and the footprint is smaller than either a pond system or oxidation ponds. Furthermore, based on the topography of the site and the proper arrangement of the processing units, the facility's hydraulic profile allows for less use of pumping between processing units, thus optimizing energy use. The type of soil at the site also has an adequate load capacity to support structures such as those relating to the trickling filters, while the construction of lagoon systems in this type of terrain is very expensive. Figure 6 contains a schematic of the hydraulic profile of WWTP-2. This profile shows that the flow between processing units travels by gravity, which provides for a very efficient use of energy.

Figure 6
HYDRAULIC PROFILE OF WWTP-2 IN REYNOSA



2.1.3. Land Acquisition and Right-of-way Requirements

COMAPA Reynosa acquired the property for the construction of WWTP-2 and lift stations 1 and 278 from private landowners in the case of WWTP-2, and through a direct donation of land by the city of Reynosa for the lift stations. The corresponding title deeds have been duly

authenticated and all properties have been legally recorded in the Public Registry of Real Estate Property.

All sewers and subcollectors will be installed within existing municipal easements and rights-of-way.

2.1.4. Management and Operation

Management and operation of the proposed wastewater collection and treatment Project will be the responsibility of the Utility. The sponsor has an O&M manual that includes routine tasks, as well as procedures to address unexpected conditions and ensure a proper operation of the system.

COMAPA currently serves approximately 224,962 (215,417 domestic) water hookups and 217,333 (207,945 domestic) wastewater connections in its service area. The Utility is organized in various departments, including: Water Treatment, Wastewater Treatment, Operation and Maintenance, Construction, and Management. The impacts of the proposed Project to the O&M budget and procedures have been reviewed and are deemed sustainable.

Additionally, COMAPA has implemented a pretreatment program to control industrial and small business discharges. Wastewater flowing through the city's sewage collection system must comply with Official Mexican Standard NOM-002-SEMARNAT-1997, which regulates the quality of the wastewater until it is conveyed to the treatment facility. The pretreatment program also meets the requirement of the BEIF program.

With regard to the operation of the WWTP, COMAPA has an ongoing service contract with a private company, which includes the operation and maintenance of WWTP-1 and WWTP-2. The existing contract contains provisions for the expansion of WWTP-2 by 11.4 MGD (500 lps), and establishes a fee based on the flow of wastewater treated.

2.2. ENVIRONMENTAL CRITERIA

Reynosa residents have drinking water service but lack sufficient wastewater treatment capacity. Consequently, there are untreated or inadequately treated wastewater discharges and runoffs that reach the Rio Grande. Without Project implementation, there is a potential for human contact with raw wastewater and organisms that are vectors for infectious diseases. Additionally, the discharge of raw wastewater would continue affecting the Rio Grande.

The construction of the wastewater collection system will eliminate an average of 9 MGD (400 lps) of untreated or inadequately treated wastewater discharges in the Reynosa area. The risk of transmission of waterborne diseases and the potential for contamination of surface water and groundwater related the improper discharge of wastewater will be reduced as a result of the Project implementation.

2.2.1. Compliance with Applicable Environmental Laws and Regulations

Applicable Laws and Regulations

The Project is subject to an environmental clearance process pursuant to the regulations of the Law of Environmental Protection for the State of Tamaulipas, as established by SEDUMA and the General Law of Ecological Balance and Environmental Protection issued by SEMARNAT.

Additionally, due to funding participation through the BEIF, the Project's transboundary impacts need to be assessed pursuant to the United States' National Environmental Policy Act (NEPA).

The Project also complies with the following Official Mexican Standards and regulations:

- Wastewater discharges to the wastewater collection system comply with Official Mexican Norm NOM-002-SEMARNAT-1996, which establishes the maximum permissible levels of contaminants for wastewater discharges into urban or municipal wastewater collection systems.
- Official Mexican Norm NOM-001-CNA-1995 "Sanitary Sewerage System – Specifications for Hermeticity."
- WWTP discharges comply with Official Mexican Norm NOM-001-SEMARNAT-1996, which establishes the maximum permissible levels of contaminants for wastewater discharges into national waters and territories.
- Sludge produced by the WWTP complies with Official Mexican Norm NOM-004-SEMARNAT-2002, which establishes the maximum permissible levels of contaminants for the reuse and final disposal of biosolids.

Environmental Studies and Compliance Activities

On February 19, 2014, SEMARNAT, through the Directorate General of Environmental Impact and Risk (DGIRA), issued Memorandum No. S.G.P.A.-DGIRA.-DG/01633 containing a favorable opinion with respect to the *Manifestacion de Impacto Ambiental* (MIA) or the environmental impact study required in Mexico and the Environmental Risk Assessment Level 2 (ERA-N2) for the "Expansion of the Wastewater Treatment Plant No. 2 in Reynosa, Tamaulipas," a project that includes the rehabilitation of lift stations 1 and 278, the construction of new wastewater collection infrastructure associated with these stations, and the construction of two additional WWTP modules proposed in this certification document.

Furthermore, in accordance with the National Environmental Policy Act (NEPA), a Transboundary Environmental Impact Document (EID) was developed and submitted for consideration to the U.S. Environmental Protection Agency (EPA). The study included the scope described in the previous paragraph.

The document presents an assessment of the Project alternatives related to the following environmental consequences:

- Air quality, odors, and greenhouse gas emissions
- Noise impacts

- Water quality, hydrology and floodplain impacts
- Biological resources and wetland impacts
- Cultural and historic resource impacts
- Geology and soils impacts
- Municipal and public service impacts
- Public health, hazards and waste management
- Socioeconomic conditions
- Land use and planning
- Transportation and circulation
- Utilities and service systems, and
- Environmental justice

Based on the findings and conclusions of the EID, EPA Region 6 prepared an Environmental Assessment (EA) and a Finding of No Significant Impact (FONSI). A 30-day public comment period began on June 3, 2014 for the environmental study and the Finding of No Significant Impact. On July 9, 2014, EPA issued a FONSI resolution, which establishes that the Project will not result in significant impacts to the environment that may affect the U.S.-Mexico border.

Pending Environmental Tasks and Authorizations

There are no environmental authorizations pending.

Compliance Documentation

The following authorizations have been obtained for the Project:

- MIA Resolution (including Risk Assessment) (S.G.P.A.-DGIRA.-DG/01633)
- FONSI Resolution issued on June 3, 2010

2.2.2. Environmental Effects/Impacts

Existing Conditions and Project Impact – Environment

At present, Reynosa lacks sufficient capacity to treat wastewater flows generated by its residents, so part of these flows are diverted to an old lagoon-based treatment system, which effluent discharges into the “El Anhelo Drain” and eventually into the Rio Grande after having received inadequate treatment. This condition prevents Reynosa from complying with Official Mexican Norm NOM-001-SEMARNAT-1996, which establishes the maximum permissible levels of contaminants for wastewater discharges into national waters and territories.

Additionally, lift stations 2, 7, 8 and 1 have exceeded their service life and often experience leaks and spills that eventually reach the Rio Grande through the Reynosa stormwater collection system.

The following are the expected Project environmental benefits:

- Increased access to adequate wastewater collection services for 28,623 improved sewer connections;
- Increased access to wastewater treatment services for 44,891 new sewer connections;
- Increase the wastewater treatment capacity by 11. 4 MGD 500 (lps);
- Eliminate approximately 8.97 MGD (393 lps) of untreated or inadequately treated wastewater discharges.

Mitigation of Risks

Although the Project implementation will have no significant adverse impacts on the environment, mitigation measures have been established to address temporary and minor adverse impacts during the construction phase. Potential impacts during construction include the following:

- The local air basin will be temporarily impacted by emissions of carbon monoxide, nitrous oxide and sulfur dioxide emissions due to vehicles and equipment used during construction.
- Noise levels may be elevated during construction activities; however, this impact is short in duration and will be concentrated in the work area. Potential impacts also include temporary roadway blockages, as well as the presence of workers in the area.
- Surface water resources could be temporarily impacted by storm water runoff during the construction phase.
- Hazardous wastes such as used motor oil could be generated during the construction and operation phases.

In summary, the environmental resolution for the Project provided by SEMARNAT recommends that the mitigation measures shall be addressed using Best Management Practices (BMP) and compliance with local ordinances to reduce the temporary impacts of construction activities. The hazardous wastes must be disposed of in accordance with the applicable regulations. Additionally, the Project sponsor is responsible for continued coordination with the International Boundary and Water Commission (IBWC), and must adhere to any water quality requirements, permitting processes, or recommendations put forth by the agency for the duration of the Project.

Natural Resource Conservation

Final designs include the implementation of green building practices as part of the technical construction specifications, with an extensive effort made to achieve optimal energy efficiency through the use of gravity flow and energy-efficient technology and operational performance, as well as the minimization of earthworks in the Project area. Additionally, the treated effluent from WWTP-2 may be reused for agricultural purposes, which provides an opportunity to reduce the demand for this type of resource. The Project also contributes to reduce environmental deterioration by expanding the capacity of the existing wastewater treatment system. Wastewater will be collected and conveyed to WWTP-1 and WWTP-2, where its quality

will be improved to reduce the risk of groundwater contamination and health hazards resulting from the discharge of raw wastewater into water bodies.

No-Action Alternative

The no-action alternative was not considered viable for the Project, since the chronic condition of leaks and overflows at the existing lift stations and the lack of wastewater treatment capacity could result in significant health and safety hazards for the public. Additionally, the new service infrastructure will eliminate the discharge of untreated or inadequately treated wastewater into the environment and will prevent associated water quality and public health impacts. Finally, without the Project implementation, COMAPA would continue in violation of existing regulations regarding wastewater discharges into receiving bodies.

Existing Conditions and Project Impact – Health

According to the "World Health Organization Water, Sanitation and Hygiene Links to Health FACTS AND FIGURES – *updated November 2004", sanitation projects can have the following benefits to human health:

- Improved sanitation reduces diarrhea morbidity by 32%.
- Access to safe water and sanitation facilities and better hygiene practices can reduce ascariasis-related morbidity by 29%[14].

The Project implementation is expected to reduce the health risks associated with uncontrolled discharges and inadequate wastewater treatment. The Project will reduce the possibility of human contact with improperly disposed and partially treated or raw wastewater; as a result, it will reduce the transmission of waterborne diseases.

Waterborne diseases are caused by pathogenic microorganisms that are transmitted as a result of inadequate wastewater disposal practices and unsafe water supplies. 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 through poor hygiene habits that contribute to the dissemination of diseases by direct or indirect human contact.
Table 4 shows waterborne disease statistics for Reynosa, Tamaulipas.

Table 4
WATERBORNE DISEASE STATISTICS FOR REYNOSA, TAMAULIPAS

Disease	Number or annual cases			
	2014	2013	2012	2011
Intestinal infections by other organisms	17,018	19,174	17,334	16,271
Other helminthiasis	213	119	80	17
Intestinal amoebiasis	685	685	584	649
Parathyphoid fever and other Salmonellosis	86*	518	902	486

Source: Secretariat of Health, Reynosa Urban Health Center. * Only Salmonellosis.

[14] WHO, Water, Sanitation and Hygiene Links to Health, Facts and Figures, updated November 2004 (http://www.who.int/water_sanitation_health/publications/facts2004/en/).

The infrastructure to be implemented under this Project will reduce raw wastewater discharges into the environmental, and will help prevent potential health threats.

Transboundary Effects

Due to the proximity of Reynosa with several U.S. cities located in Hidalgo County, Texas, there are frequent border crossings between these communities. The construction of wastewater collection and treatment infrastructure will have a positive impact on the health of residents of communities such as McAllen or Pharr, Texas, and throughout the entire region, since these actions will help reduce the risk for waterborne diseases caused by exposure to untreated discharges. Additionally, the implementation of the proposed Project will reduce the potential for contamination of shared bodies of water, including the Rio Grande.

2.3. FINANCIAL CRITERIA

The total estimated cost of the Project is US$15,658,735, which includes the funding for construction, supervision and contingencies.[15] The Project meets all BEIF program criteria and has been approved by EPA for a BEIF grant of up to US$7,080,512 for the Wastewater Collection and Treatment systems to complete the financing of the Project. Table 5 presents a breakdown of total Project costs, as well as the sources of funding.

[15] Estimated costs include a 16% VAT, 10% supervision and 10% contingency for BEIF funded components. Unless otherwise noted, all U.S. dollar figures are quoted at an exchange rate of $15.4284 pesos per dollar, based on Banco de Mexico's average Fix exchange rate for January-August 2015, and as agreed with CONAGUA for indicative purposes of this Project.

Table 5
USES AND SOURCES OF FUNDS
(US $)

Uses	Amount	%
Conveyance Infrastructure and Equipment*	$ 1,350,413	8.6
WWTP-2 Capacity Expansion	7,227,810	46.1
Construction related to Lift Stations No. 1 and No. 278	5,900,426	37.7
Contingency	590,043	3.8
Supervision	590,043	3.8
TOTAL	**$ 15,658,735**	**100.0**

* Includes costs related to the following components: Force main 1 for lift station No. 1, force main for lift station No. 22, pumps for lift stations No. 30 and No. 10, and Supervisory Control and Data Acquisition (SCADA) system for lift station No. 30 and WWTP-2.

Sources	Type	Amount	%
Mexico[16]	Grant	$ 8,578,223	54.8
NADB-BEIF Construction Assistance[17]	Grant	$ 7,080,512	45.2
TOTAL		**$ 15,658,735**	**100**

3. PUBLIC ACCESS TO INFORMATION

3.1. PUBLIC CONSULTATION

BECC published the draft Certification Proposal for a 30-day public comment period beginning February 16, 2016. The following Project documentation was made available upon request:

- Final Design for the Expansion of Wastewater Treatment Plant No. 2 in Reynosa, Tamaulipas. COMAPA, 2012.
- Final Design for lift station No. 278 in Reynosa, Tamaulipas. BECC, 2013.
- Final Design for lift station No. 1 in Reynosa, Tamaulipas. BECC, 2013.
- Transboundary Environmental Impact Study Document for the Wastewater Collection and Treatment Systems Improvements Project in Reynosa, BECC/CDM, March 2013.
- Environmental Assessment (FONSI) for the Wastewater Collection and Treatment Systems Improvements Project in Reynosa, Tamaulipas, México. (June 3, 2014)

[16] Mexico's funding participation for this Project is MX$132.35 million (US$8.58 million), confirmed by CONAGUA through *Oficio* B00.7.04.-160 dated October 2, 2015. This amount is part of a total Mexican Match Credit of MX$166.95 million, requested by CONAGUA through the following *Oficios*: B00.05.06.-00185 (8/30/2012); B00.05.06.-174 (9/17/2012); B00.05.06.-00138 (6/24/2013); B00.05.06.-091 (5/26/2014); B00.7.04.-011 (1/29/2015); B00.7.04.-135 (7/28/2015). The aforementioned communications related to Match Credit were approved by EPA Region VI on August 3, 2015, subject to NADB's validation.

[17] BEIF funding breakdown is US$5,900,426 for construction, US$590,043 for contingencies and US$590,043 for supervision, all including 16% VAT.

- Environmental Impact Study (MIA) for the Expansion of Wastewater Treatment Plant No. 2 in the Municipality of Reynosa, Tamaulipas.
- Environmental Risk Assessment Level 2 (ERA-N2) for the "Expansion of Wastewater Treatment Plant No. 2 in the Municipality of Reynosa, Tamaulipas".
- Resolution regarding the Environmental Impact Study and Environmental Risk Assessment Level 2 (ERA-N2) for the "Expansion of Wastewater Treatment Plant No. 2 in the Municipality of Reynosa, Tamaulipas". Memorandum No. S.G.P.A.-DGIRA.-DG/01633, of February 19, 2014, issued by the Secretariat of the Environment and Natural Resources through its Directorate General of Environmental Impact and Risk.
- Public Participation Report including Public Meeting Minutes, pictures, articles and related materials.

The public comment period ended on March 18, 2016, with no comments received.

In addition to publishing the certification proposal, the Project included a public comment process related to the publication of the environmental clearance finding on June 3, 2014. No public comments were received regarding the proposed Project, the WWTP site, or the environmental impacts identified.

3.2. OUTREACH ACTIVITIES

The Utility conducted extensive outreach efforts to communicate the Project characteristics, including cost and fees, and to obtain the support of the residents of the Project area. In accordance with the public outreach requirements of the BEIF program, activities such as the use of a local Steering Committee, public meetings, and appropriate project information access where conducted as described in the Public Participation Plan (PPP). The following information provides a summary of the outreach activities carried out for the Project.

The Local Steering Committee was established on October 15, 2012. The Steering Committee includes members of the community, civic organizations, and the Utility's staff. The steering committee developed a public participation plan and periodically met with the Project team to help the Utility to disseminate information regarding the Project. The Project's technical and financial information was made available to the public for review. The Local Steering Committee, with assistance of members of the COMAPA staff, prepared a fact sheet and a presentation on the Project. Information on the Project was presented to the community during two public meetings.

The first Public Meeting notice was published on November 11, 2012 in the *El Mañana de Reynosa* (local newspaper) and was held on December 10, 2012 at the Prado I Conference Room of the Holiday Inn Zona Dorada Hotel in Reynosa. Based on the sign-in sheet, the meeting was attended by more than 300 individuals showing strong interest from the community towards Project implementation. This meeting was used to inform local residents of the Project characteristics and potential funding sources. Project support was documented through a survey conducted at the event in which 100% of the attendants expressed their support to the Project.

A second public meeting was held on February 3, 2016. During the meeting the community was informed of the proposed funding structure and potential environmental impacts of the Project. The meeting was attended by 233 residents showing their support and interest towards Project implementation. The meeting served as a discussion forum for the attendees and Project support was also documented through a survey conducted at the event in which 99% of the persons surveyed expressed their understanding and support to the Project.

In addition, during the development of the Project, the Local Steering Committee maintained a blog to provide information about the Project's progress. To view the entries regarding the Project please use the following link: http://seguimientociudadanopis.blogspot.mx/.

BECC conducted a media search to identify potential public opinion about the Project (construction of a wastewater collection and treatment system 11.4 MGD (500 lps) in Reynosa, Tamaulipas). The information found in the media explained the need for services in the area and did not contain any negative comments posted by readers. No opposition to the Project was identified in the media search.

References to the Project were found on the websites listed below:

- *Government website; press release*:

  http://tamaulipas.gob.mx/2011/10/pactan-tamaulipas-cocef-proyectos-de-agua-por-99-5-millones-de-dolares-2/
  (Published on Wednesday, October 5, 2011. Article regarding the agreement between the State Government and BECC for project totalizing 99.5 million dollars, works lead by Maria Elena Giner and the Governor Egidio Torre Cantú

  http://tamaulipas.gob.mx/2012/12/obtiene-tamaulipas-apoyo-de-865-26-mdd-de-cocef/
  (Published on December 16, 2012. Article focused on the funds that the Tamaulipas State has gotten from BECC to strengthen the water and wastewater projects, totalizing 865.2 million dollars

  http://www.reynosa.gob.mx/prensa/comunicados/2016/febrero/040216/
  (Published February 2016, on the city website regarding the project.)

- *News:*

  http://www.horacero.com.mx/reynosa/busca-comite-ciudadano-impulsar-saneamiento-de-reynosa/
  (Published on October 16, 2012. Article regarding the goals of the Steering Committee)

  http://www.hoytamaulipas.net/notas/58461/Busca-Reynosa-13-mdd-para-tratar-aguas-residuales.html
  (Published on November 4, 2012. Article regarding the presentation of the Project to Reynosa residents)

http://www.elmanana.com/avanzaelproyectointegraldesaneamientomunicipal-1885386.html
(Published on Wednesday, December 11, 2012. Article regarding the first public meeting for Project certification, which includes a summary of the project and estimated capital costs)

http://www.hoytamaulipas.net/notas/62709/Costaria-32-mdd-proyecto-Integral-de-Saneamiento-para-Reynosa.html
(Published on December 13, 2012. The article focuses on the description of wastewater collection and treatment projects for Reynosa, the need for these projects, and the investments required)

http://laprensa.mx/notas.asp?id=167479
(Published on December 10, 2012. The article focuses on the first public meeting for the certification of wastewater collection and treatment projects for Reynosa.)

http://www.sinembargo.mx/11-12-2012/458344
(Published on December 11, 2012. This article refers to the BECC announcement on the 32 million dollars wastewater projects proposed for certification and informs that to date projects for more than 300 million dollars have been certified in Reynosa).

http://www.notigape.com/contenido/19074
(Published on June 5, 2013. This article centers on the resources that the BECC and NADB will bring to complete the wastewater projects for Reynosa).

http://www.hoytamaulipas.net/notas/210062/Se-reune-en-Reynosa-Comite-Ciudadano-de-Seguimiento-al-Proyecto-Integral-de-Saneamiento.html
(Published February 2, 2016, article on the scheduled public meeting for the Reynosa project)

http://www.hoytamaulipas.net/notas/210287/7.8-mdp-para-saneamiento-de-aguas-residuales-en-Reynosa.html (Published February 4, 2016, article is on the second public meeting held for the Reynosa project.)

http://www.metronoticias.com.mx/nota.cgi?id=294324
(Published February 4, 2016 article on the 7.8 MDD project in Reynosa)

http://www.laverdad.com.mx/desplegar_noticia.php?seccion=REGIONAL&nota=231837 (Published February 4, 2016 on the second meeting for the Reynosa project)

http://www.elmanana.com/vienen78mddparatratadora-3176708.html
(Published February 4, 2016 on the plans for the 7.8 MDD Reynosa project)

http://www.elmanana.com/78millonesdedolaresparasaneamientodeaguasresiduales-3177902.html (Published February 5, 2016 on the investment for the Reynosa project)

http://www.enlineadirecta.info/?option=view&article=279739#sthash.mM5gnZuO.dpbs (Published February 5, 2016 column on the citizen community meeting held for the Reynosa project)

http://www.horacero.com.mx/reynosa/comapa-anuncia-carcamos-comenzaran-hasta-el-mes-de-agosto/ (Published February 8, 2016 article is the more than 7 million that will be available for projects in Reynosa)

http://www.laverdad.com.mx/desplegar_noticia.php?seccion=REGIONAL&nota=232178 (Published on February 8, 2016 article features the wastewater project for Reynosa)

The Project Sponsor's activities and articles identified above demonstrate that the public received updates related to the Project, including the Project's technical aspects, environmental effects, funding structure and financial impacts to residents that will occur due to the wastewater system improvements. The Project sponsor informed BECC that no comments expressing concern about the Project have been received during the public outreach process.