CERTIFICATION PROPOSAL

REHABILITATION OF THE WASTEWATER COLLECTION SYSTEM IN COLONIAS LOMA LINDA AND ESPERANZA MEXICALI, BAJA CALIFORNIA

Revised: November 24, 2014

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EXECUTIVE SUMMARY

REHABILITATION OF THE WASTEWATER COLLECTION SYSTEM IN COLONIAS LOMA LINDA AND ESPERANZA MEXICALI, BAJA CALIFORNIA

Project: The project consists of the rehabilitation of sewer lines in Colonias Loma Linda and Esperanza, Mexicali, Baja California ("the Project").

Project Objective: The purpose of the Project is to eliminate exposure to untreated or inadequately treated wastewater discharges, which cause an immediate and significant threat to the environment and a potential for human contact, thus contributing to the reduction of pollution and the risk of waterborne diseases.

Expected Project Outcomes: The Project is expected to generate environmental and human health benefits related to improved wastewater collection services for up to 637 residential wastewater connections.

Population Benefitted: 2,230 residents of Mexicali, Baja California.[1]

Project Sponsor: Mexicali, Baja California Municipal Utility, *Comisión Estatal de Servicios Públicos de Mexicali* (CESPM)

Project Cost: US$1,364,240 (17,804,014 pesos MXN).[2]

NADB Grant: US$ 593,990 from EPA's Border Environmental Infrastructure Program (BEIF)

Uses & Sources of Funds:
(U.S. dollars)

Uses	Amount	%
Construction, contingencies, supervision and taxes	$1,364,240	100.0
TOTAL	**$1,364,240**	**100.0**
Sources	**Amount**	**%**
Mexico (Grant)	$ 770,250	56.0
NADB-BEIF (Grant)	593,990	44.0

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1. ELIGIBILITY

Project Type

The project falls within the eligible sector of wastewater.

Project Location

The Project is located in the city of Mexicali in the state of Baja California, which is adjacent to the City of Calexico, California.

Project Sponsor and Local Authority

The public-sector Project sponsor is the Mexicali Local Water Utility, Comisión Estatal de Servicios Públicos de Mexicali (CESPM or the "Sponsor"). As established in the Baja California Law for State Service Commissions, the local water utility, CESPM has the legal authority to operate and maintain water treatment, storage, and distribution systems, as well as wastewater collection and treatment systems.

2. CERTIFICATION CRITERIA

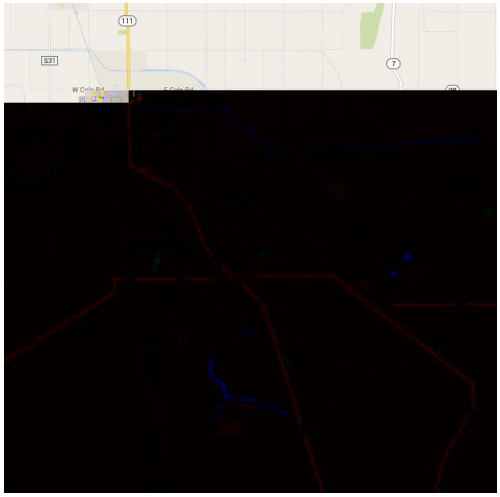
2.1. TECHNICAL CRITERIA

2.1.1. Project Description

Geographic Location

The city of Mexicali is located in the northeast region of the state of Baja California and borders the City of Calexico, California. Figure 1 shows the location of Mexicali.

Figure 1
PROJECT VICINITY MAP



General Community Profile

According to the population projections of the Mexican census bureau (INEGI 2010), the city of Mexicali had 697,149 residents in 2010, having grown at an average annual rate of 2.1 % over the last ten years from a population of 549,873 in 2000. Current estimates have the city's population at 829,494 residents.

The municipality's economic activities are based primarily on manufacturing and commerce. And according to the 2010 Census (INEGI), the economically active population is estimated to be 404,701 inhabitants.

The status of public services in the City of Mexicali is described below.

Table 1
BASIC PUBLIC SERVICES AND INFRASTRUCTURE

Water System	
Coverage	99.77 %
Supply source	Colorado River
Number of hookups	294,124
Wastewater Collection	
Coverage	95.34 % connected
Number of connections:	278,235
Wastewater Treatment	
Coverage*	100%
Treatment facilities	2 stabilization pond systems and 3 activated sludge systems, 2,164 liters per second (49.4 MGD total)
Solid Waste	
Collection coverage	99%
Final disposal	Landfill
Street Paving	
Coverage	70% (Source: Municipality of Mexicali)

Source: CESPM utility, April 2014.
* In accordance with tCONAGUA's definition, it is calculated based on the percentage of collected wastewater discharges treated at the existing treatment facility.

Local Wastewater System

The wastewater collection system in the Colonias Loma Linda and Esperanza has been in operation for 45 years. The original pipe material is made of concrete and clay and is experiencing frequent collapses. The aging and failing wastewater collection lines cause an immediate threat to residents, a potential exposure to untreated discharges, and an environmental risk related to infiltration in the existing groundwater resources and untreated surface water discharges which eventually cross the U.S.-Mexico border through the New River.

The Project will replace 24,085 linear feet (7,341 meters) of deteriorated sanitary sewer collection lines and will provide improved wastewater collection services for up to 637 residential wastewater connections. These WW flows will be conveyed into the Zaragoza WWTP which currently has an influent flow of 913 lps (20.8 MGD) and has an available capacity of 387 lps (8.8 MGD) to accept the flows generated by the Project.

Implementation of the proposed Project will reduce the risk of water pollution and waterborne diseases, directly benefitting an estimated 2,230 residents. These conditions are compatible with Category 2 conditions for the selection of projects for funding under the U.S.-Mexico Border Water Infrastructure program.

Project Scope and Design

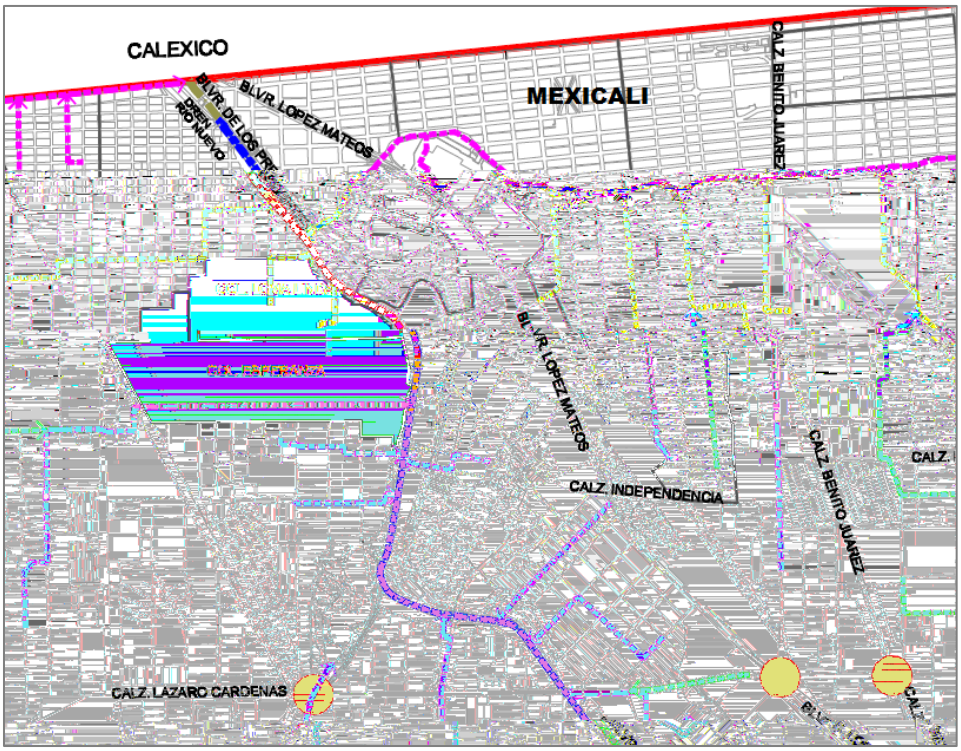
The Project consists of the rehabilitation of the wastewater system of the Loma Linda and Esperanza colonias with the installation of the following:

- *Esperanza Colonia*:
  - 4,878 linear meters (16,004 ft.) of 8-inch diameter PVC pipe
  - 466 benefitted residential connections
  - 8,652 m^2 (93,127 sq. ft.) of asphalt pavement

- *Loma Linda Colonia*:
  - 1,982 linear meters (6,503 ft.) of 8-inch diameter PVC pipe
  - 481 linear meters (1,578 ft.) of 12-inch diameter PVC pipe
  - 171 benefitted residential connections
  - 4,863 m^2 (52,344 sq. ft.) of asphalt pavement

Figure 2 shows the areas where the Project components will be installed within the city of Mexicali, Baja California.

Figure 2
PROJECT AREA



Construction permits will be the responsibility of the contractor and are considered a construction task. Table 2 shows the proposed schedule for project implementation milestones.

Table 2
PROJECT MILESTONES

Key Milestones	Status
Initiation of procurement	Anticipated: 1st quarter 2015
Construction period	Six months from construction initiation

2.1.2. Technical Feasibility

Design Criteria

The final design of the proposed works was completed in accordance with the technical specifications of the Water, Wastewater Collection, and Treatment Manual developed by the Mexican federal water agency, CONAGUA. CONAGUA issued a technical validation for the Project through official correspondence on January 17, 2014 (BOO.00.R02.05.1-003/026).

Selected Technology

During the hydraulic modeling and final design process, technical options for pipe diameter, material and alignment were evaluated. To identify the most appropriate technology, technical options were evaluated pursuant to the following factors:

- Proposed layout of the sewer lines
- Required connection points for the system components
- Investment cost
- Operation and maintenance cost
- Materials and equipment reliability
- Sustainable practices

The pipe diameter was selected using appropriate slopes and velocities to prevent pipe silting and clogging, septic conditions, over-excavation or the need for pumping facilities that could increase project costs. Peak flow rates and maximum instantaneous flow rates were taken into consideration in order to avoid overflows. The analysis also considered using various pipe materials in compliance with applicable standards and regulations. High-density polyethylene, PVC, and asbestos-cement pipes were evaluated, and their characteristics and suitability for the soil type were reviewed. For the proposed Project, PVC was the selected material, which has proven to be reliable.

2.1.3. Land Acquisition and Right-of-way Requirements

All the construction tasks of the proposed Project will take place within existing municipal rights-of-way. No additional land or rights-of-way acquisition will be required.

2.1.4. Management and Operations

Management and operation of the proposed Project will be the responsibility of the municipal water utility, CESPM, which has sufficient resources and staff available for these purposes including procurement and construction supervision during Project implementation. CESPM has successfully completed several projects in coordination with BECC and NADB as well as with funding program sources such as US EPA and CONAGUA.

CESPM has an O&M manual that includes the primary tasks necessary to ensure proper operation of the new infrastructure. The utility serves 294,124 water hookups and 278,235 wastewater connections, and provides treatment to approximately 1,833 liters per second (41.8 MGD) of wastewater.

The Project sponsor has a pretreatment program to control industry and small businesses discharges in coordination with the Secretariat of Environmental Protection (SPA). The pretreatment program complies with the BEIF program requirements.

2.2. ENVIRONMENTAL CRITERIA

2.2.1. Compliance with Applicable Environmental Laws and Regulations

Applicable Laws and Regulations

The Project is subject to an environmental clearance authorization in accordance with the Regulations of the state of Baja California and the General Law on Ecological Balance and Environmental Protection regarding Environmental Impact Assessment, as determined through the SPA. Additionally, to be able to receive grant funds from the Border Environment Infrastructure Fund (BEIF), supported by federal appropriations to the U.S.-Mexico Border Water Infrastructure Program of the U.S. Environmental Protection Agency (EPA), the Project requires that the transboundary impacts be examined in compliance with the U.S. National Environmental Policy Act (NEPA).

In addition the Project complies with the 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.

Environmental Studies and Compliance Actions

Pursuant to the regulations of the SPA, through official letter No. SPA-MXL-508/2012, it was determined that the environmental impact assessment (MIA) for the Project was not required and subsequently authorizes its implementation.

In accordance with the NEPA process, EPA finalized a *Supplemental Environmental Assessment (SEA) of the Effect on Calexico, CA by the Proposed Construction of an Rehabilitation of the Wastewater Collection system in Colonias Loma Linda and la Esperanza Mexicali, Baja California and* issued a public notice reaffirming that no significant impacts to the environment would result from the implementation of rehabilitation of the wastewater collection service to the

Colonias Loma Linda and Esperanza Mexicali, Baja California. The comment period for the public notice closed without comments and the reaffirmed Finding of No Significant Impact (FONSI) was issued on June 7, 2013.

Since the Project will be implemented in already disturbed areas, the consultation with the National Anthropology and History Institute (INAH) is not required. No cultural or historical resources are expected to be disturbed

Pending Environmental Tasks and Clearances

There are no pending environmental tasks or clearances for this Project.

Compliance Documents

The following formal authorizations have been obtained for the Project:

- Official letter No. SPA-MXL-508/2012 issued by SPA on February 17, 2012.
- Reaffirmation of the FONSI issued by EPA on June 7, 2013.

2.2.2. Environmental Effects / Impacts

Existing Conditions and Project Impact – Environment

Wastewater overflows reported in the Project area resulted in a potential exposure to untreated discharges and a risk to the environment as a potential source of groundwater contamination in Mexico and the US through the New River. The Project will provide adequate infrastructure to collect and convey the wastewater flows to the existing Zaragoza WWTP. The expected environmental and human health benefits generated by the Project will be improved wastewater collection services for 637 residential wastewater connections.

The environmental impact resulting from Project implementation will be positive overall, given that it will prevent possible groundwater contamination and increase the reliability of wastewater collection service.

Mitigation of Risks

Only minor environmental impacts are anticipated during construction of the Project, provided that the tasks are implemented in accordance with best management practices. Potential impacts may be present during the construction phase and include the following:

- Emission of dust particles;
- Combustion gas emissions from construction machinery; and
- Temporary roadway blockages and the presence of workers in the area.

Typical mitigation measures to be practiced include:

- Application of water to reduce the emission of dust particles;

- Vehicle tune-ups to reduce emissions; and
- Placement of warning signs to prevent potentially hazardous situations.

Natural Resource Conservation

The Final Design includes the implementation of green building practices as part of the technical construction specifications, with a special focus in energy efficiency and optimal operational performance. The Project contributes to reduce environmental deterioration by installing new wastewater collection lines and providing the necessary means to collect and convey these flows to the existing WWTP. Also, the Project contributes to the protection of natural resources by reducing the risks of soil and water contamination.

No Action Alternative

The no-action alternative was not considered viable since failing to expand the collection system would result in possible groundwater contamination and a significant health risks for residents.

Existing Conditions and Project Impact – Human Health

The 45 year old wastewater collection system in the Loma Linda and Esperanza residential sectors was built with concrete and clay pipe and is experiencing frequent collapses. This results in discharge of untreated wastewater and a potential exposure and environmental risk from infiltration in the existing groundwater resources and nearby canals, eventually crossing into the US through the New River.

Waterborne diseases are caused by pathogenic microorganisms that are directly transmitted as a result of inadequate wastewater collection and disposal practices and unsafe water supplies. An individual can 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 3 shows waterborne statistics diseases for the city of Mexicali, BC for the period 2009-2013.

Table 3
WATERBORNE DISEASE STATISTICS FOR THE STATE OF BAJA CALIFORNIA, 2009-2012

PADECIMIENTO	2009	2010	2011	2012	2013
AMEBIASIS INTESTINAL	77	198	103	122	105
ASCARIASIS	0	0	0	3	2
BRUCELOSIS	0	0	5	11	2
CONJUNTIVITIS	192	296	439	482	395
ENTEROBIASIS	0	2	1	3	2
ESCABIOSIS	10	23	49	32	83
FIEBRE TIFOIDEA	26	45	63	68	156
GIARDIASIS	19	22	33	42	37
HEPATITIS A	6	21	22	39	19
HELMINTIASIS	21	116	183	209	
INFECCIONES INTESTINALES POR OTROS ORGANISMOS	4,029	4,831	6,373	6,611	5,082
INTOXICACION ALIMENTARIA BACTERIANA	1	0	96	319	236
SALMONELOSIS	91	95	69	86	137
SHIGELOSIS	0	0	0	6	11
TOTAL	4,472	5,649	7,436	8,033	6,267

Fuente: Sistema Unico Automatizado de Vigilancia Epidemiologica (Incidencia)/ Epidemiologia ISSSTECALI

There is a risk of exposure to untreated wastewater, which increases the vulnerability of area residents to waterborne diseases. The infrastructure improvements to be implemented under this Project will reduce this risk and thus prevent potential health threats. According to the World Health Organization (WHO), access to safe water and sanitation facilities, as well as better hygiene practices, can reduce ascariasis-related morbidity by 29% and diarrhea-related morbidity by 32%.[3]

Transboundary Effects

Due to the proximity of this community to the city of Calexico, California, there are frequent border crossings between cities. The proposed Project will have a positive impact on the health of residents of cities such as Calexico, El Centro and the entire region, since the Project will help to reduce the risk of waterborne diseases and water table contamination caused by the aging/collapsing wastewater infrastructure in the Loma Linda and Esperanza colonias.

Additionally, the implementation of the proposed Project will reduce the potential for contamination of local shared water bodies, such as the New River. According to the transboundary environmental assessment, significant impacts are not expected as a result of the Project implementation.

[3] Source: 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 Project was presented at the New River Binational Technical Committee (BTC) meetings during 2013-2014. The BTC is chaired by Mexican Section of the International Boundary and Water Commission (CILA). The BTC shared its support for the much needed Project investment.

2.3. FINANCIAL CRITERIA

The total estimated cost of the Project is US$1,364,240 which includes the funding for construction, supervision, contingencies and taxes. The Project meets all BEIF program criteria. EPA has approved a BEIF grant of up to US$593,990 for the Rehabilitation of the WWC System of Loma Linda and Esperanza Colonias to complete the financing of the Project.

Table 4 presents a breakdown of total Project costs, as well as the sources of funds.

Table 4
USES AND SOURCES OF FUNDS
(US$)

Uses	Amount	%
Construction, contingencies, supervision and taxes	$1,364,240	100%
TOTAL	**$1,364,240**	**100%**
Sources	**Amount**	**%**
Mexico (Grant)	$ 770,250	56%
NADB-BEIF Grant	593,990	44%
TOTAL	**$1,364,240**	**100%**

3. PUBLIC ACCESS TO INFORMATION

3.1. PUBLIC CONSULTATION

BECC released the Draft Project Certification Proposal for a 30-day public comment period beginning October 24, 2014. The following Project documentation is available upon request:

- Final Design, Wastewater Collection System for Colonias Loma Linda and Esperanza in Mexicali, Baja California, 2014.
- Official letter No. SPA-MXL-508/2012 issued by SPA on February 17, 2012 indicates the Project does not require an environmental impact assessment or authorization (MIA).
- A reaffirmed Finding of No Significant Impact (FNSI) issued by EPA on June 7, 2013.
- CONAGUA's technical validation dated January 17, 2014 (BOO.00.R02.05.1-003/026).

The 30-day public comment period ended on November 23, 2014, with no comments received.

3.2. OUTREACH ACTIVITIES

In accordance with the standard operating procedures for the PDAP/BEIF grant program, a broad public outreach effort was conducted for the Project, including activities such as the use of a local steering committee, meetings with local organizations, surveys, and public meetings. Below is a summary of the outreach activities carried out for the Project.

The Local Steering Committee was formally created on August 30, 2013, at a meeting held at CESPM's facilities. At this meeting the Board of Directors for the committee was selected.

The steering committee convenes periodically to help the Project sponsor disseminate information regarding water and wastewater infrastructure works. The committee includes members of civil engineering and economic development associations, as well as city council members. In addition, residents from the benefited areas participate directly with this group as the Project gets closer to being implemented in their specific communities. The Comprehensive Community Participation Plan developed by the Local Steering Committee was approved by the BECC in September 2013.

The Project's technical and financial information has been made available to the public for review. The Steering Committee, with assistance from the Project sponsor, prepared a fact sheet and a power point presentation for the Project. Additionally, a survey was disseminated to document the community's concerns or support for the Project. Project information was presented to the community at two public meetings:

- *First Public Meeting*. The first Public Meeting notice was published in the local newspaper "La Voz de la Frontera" on November 20, 2013, and was held on January 30, 2014 at the Avenida Yucatan Public Park located between the streets Merida and Progreso within the Colonia Esperanza. The meeting was attended by more than 42 residents who answered a Project survey. Of these, 100 % said they were able to fully understand the Project and explicitly expressed their support.

- *Second Public Meeting*. A second public meeting was held on October 10, 2014 at the Avenida Yucatan Public Park located between the streets Merida and Progreso within the Colonia Esperanza. During the meeting the community was informed of the Project's financial components. The meeting was attended by 40 residents. The Project survey received responses from 100 % of the attendees with full support for the Project.

The steering committee carried out several meeting with social and professional organization to provide project information. Activities conducted by the Project sponsor and Steering Committee demonstrate that the public outreach requirements for the funding programs have been met. Additionally, the Project was presented at the New River BTC meetings during 2013-2014. The BTC shared its support for the much needed Project investment.

BECC conducted a media search to identify potential public opinion about the Project. No articles related to the project were identified and no opposition to the Project was detected in the media search.