CERTIFICATION AND FINANCING PROPOSAL

DRINKING WATER SYSTEM FOR JOSÉ SILVA SÁNCHEZ IN THE MUNICIPALITY OF SOTO LA MARINA, TAMAULIPAS

Revised: June 11, 2018

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EXECUTIVE SUMMARY

DRINKING WATER SYSTEM FOR JOSÉ SILVA SÁNCHEZ IN THE MUNICIPALITY OF SOTO LA MARINA, TAMAULIPAS

Project:	The proposed project consists of the construction of a drinking water system, including the installation of a new water transmission line, storage tank and distribution system, as well as equipping an existing well with a new power connection, pumping equipment and disinfection to provide first-time water service to the community of José Silva Sánchez in the municipality of Soto la Marina, Tamaulipas (the "Project").
Objective:	The purpose of the Project is to increase access to sustainable drinking water service by assuring adequate water supply and service reliability in order to eliminate the use of hauled water, thus helping to reduce health risks associated with waterborne diseases.
Expected Outcomes:	The Project is expected to generate environmental and human health benefits related to the following Project outcomes: • Provide first-time access to safe and reliable drinking water service for 33 new residential service connections. • Assure sufficient water supply by providing adequate pumping capacity and storage.
Population Benefitted:	135 residents of José Silva Sánchez, Tamps.[1]
Sponsor:	The local water utility, Comisión Municipal de Agua Potable y Alcantarillado de Soto la Marina (COMAPA).
Project Cost:	US$260,000.[2]
NADB Grant:	Up to US$250,000 through the Community Assistance Program (CAP), to cover up to 90% of the project cost in pesos.[3]

[1] Based on population projections prepared by the Mexican National Population Council (CONAPO), in 2018, the local population in Jose Silva Sanchez is estimated to be 135.
[2] Unless otherwise indicated, all U.S. dollar figures are quoted at an exchange rate of $18.0 pesos to the dollar, based on the average exchange rate set by Banco de Mexico to pay obligations entered into in U.S. dollars payable in México (FIX) for the last two years.
[3] Since the project costs are in pesos, the Bank is requesting a dollar amount that will allow for possible fluctuations in the exchange rate.

Uses and Sources of Funds:

Uses	Amount (US$)	%
Construction*	$ 260,000	100.0
TOTAL	**$ 260,000**	**100.0**

Sources	Amount (US$)	%
Mexican funds (state & local)	$ 26,000	10
NADB-CAP grant	234,000	90
TOTAL	**$ 260,000**	**100.0**

* Includes construction, contingencies, supervision and taxes

Project Status:

Key Milestones	Status
Environmental clearance – Mexico	Complete in August 2012
Final design	Complete in November 2015
Procurement for CAP-funded components	Anticipated in the third quarter of 2018
Construction period with CAP grant	Estimated period of 7 months

CERTIFICATION AND FINANCING PROPOSAL

DRINKING WATER SYSTEM FOR JOSÉ SILVA SÁNCHEZ IN THE MUNICIPALITY OF SOTO LA MARINA, TAMAULIPAS

1. PROJECT OBJECTIVE AND EXPECTED OUTCOMES

The purpose of the Project is to increase access to sustainable drinking water service for 33 new residential connections, eliminating the use of hauled water and helping reduce health risks associated with waterborne diseases. The new infrastructure will provide 1.6 liters per second (lps) or 25.4 gallons per minute (gpm) of potable water and storage capacity of 25 cubic meter or 6,600 gallons.

2. ELIGIBILITY

2.1. Project Type and Description

The Project falls within the eligible category of drinking water.

The proposed project consists of the construction of the drinking water system, including the installation of a new water transmission line, storage tank and distribution system, as well as equipping an existing well with a new power connection, pumping equipment and disinfection to provide first-time water service to the community of José Silva Sánchez in the municipality of Soto la Marina, Tamaulipas (the "Project").

2.2. Project Location

The Project will be implemented in the community of José Silva Sánchez within the municipality of Soto la Marina, which is located on the eastern coast of the state of Tamaulipas. José Silva Sánchez is approximately 10 miles (16 kilometers) south of the municipal seat, Soto la Marina, 25 miles (40 kilometers) west of the Gulf of Mexico, and approximately 126 miles (203 kilometers) from the U.S.-Mexico border at the geographical coordinates 23º 38' 55" Latitude North and 98º 08' 24" Longitude West, at 167 ft above mean sea level. The Project is in the border region, which in Mexico is defined as 300 kilometers (186.5 miles) from the U.S.-Mexico international border.

Figure 1 shows the approximate location of the Project.

Figure 1
PROJECT LOCATION MAP

2.3. Project Sponsor and Legal Authority

The public-sector Project sponsor is the local water and wastewater utility, Comisión de Agua Potable y Alcantarillado de Soto la Marina ("COMAPA" o "the Utility"). The legal authority of COMAPA is established in Decree No. 262 of the 58th Constitutional Legislature of the Free and Sovereign State of Tamaulipas published on April 8, 2003, which provides for the establishment of a municipal public agency with legal authority and capital assets, for the purpose of providing water and wastewater services to the Municipality of Soto la Marina, Tamaulipas, which includes the community of José Silva Sánchez. [4]

3. CERTIFICATION CRITERIA

3.1. Technical Criteria

A. General Community Profile

The economy of Soto la Marina is based primarily on agriculture, fishing and tourist activities. José Silva Sánchez is a small, rural community within the municipality of Soto la Marina. According to the Mexican National Institute of Statistics and Geography (INEGI), José Silva Sanchez had a population of 127 residents in 2010. Based on population projections prepared by the Mexican

[4] In Mexico, a "municipio" or municipality has a similar jurisdiction to a county in the United States.

National Population Council (CONAPO), in 2018, the local population in José Silva Sanchez is estimated to be 135.[5] The primary economic activity of the community is agriculture.

The annual per capita gross domestic product (GDP) in 2005 in the municipality of Soto la Marina was equivalent to US$6,257, which is 17% less than the average per capita GDP of $7,482 for the State of Tamaulipas.[6] In 2010, 64.9% of all residents were living below the poverty level.[7]

The following table summarizes the status of public services and infrastructure in the community.

Table 1
BASIC PUBLIC SERVICES AND INFRASTRUCTURE

Water	
Coverage:	0%
Water supply source:	Water trucks
Number of hookups:	33 unserved households
Wastewater Treatment	
Coverage:	100%, through individual on-site disposal systems
Street Paving[4]	
Coverage:	0%

Source: Revisión y Complementación del Proyecto de Rehabilitación del Sistema de Agua Potable de José Silva Sánchez, Municipio de Soto la Marina, Tamaulipas [Review and Supplement to the Water System Rehabilitation Project for José Silva Sánchez, Municipality of Soto la Marina, Tamaulipas], June 2015.

Local Drinking Water System Profile

The community of José Silva Sanchez currently has a shallow well located just over 1.2 miles southeast of the town, within an agricultural area adjacent to the community. The quality of the water drawn from the well has been sampled and tested with satisfactory results, requiring only chlorine disinfection to meet drinking water standards. Additionally, the capacity of the well was confirmed with more than two times the water availability than required to serve the community of José Silva Sanchez. However, the well lacks electricity and pumping equipment and, therefore, has not been utilized by the community to meet existing drinking water needs. Figure 2 shows the local water well.

[5] Source: CONAPO, Tamaulipas: Proyecciones de población de localidades seleccionadas, 2010-2030, accessed via internet on April 28, 2016.
[6] Source: http://inafed.gob.mx/work/models/inafed/Resource/65/1/images/siha_2_2_4.xls
[7] Source: Consejo Nacional de Evaluación de la Política de Desarrollo Social [National Council for Evaluation of Social Development Policy (CONEVAL)], Informe Anual sobre la Situación de Pobreza y Rezago Social: Soto la Marina, Tamaulipas" [Annual Report on the Poverty Conditions and Social Needs in Soto la Marina, Tamaulipas], accessed via Internet on April 28, 2016.

Figure 2
EXISTING WELL SITE

Well head and cover

Well head and shed

Well casing

A temporary, substandard water distribution system, along with a concrete water storage tank elevated two meters (6.6 ft.) above ground, was constructed more than 30 years ago to serve the community. Both are obsolete and currently out of service. Community residents obtain their water supply from water trucks, which deliver twice per week. This water supply is unsecure and represents a risk for exposure to waterborne diseases due to improper handling or the use of un-sanitized water tanks or storage containers. Figure 3 shows the existing water distribution system and storage tank.

Figure 3
WATER DISTRIBUTION SYSTEM AND STORAGE TANK

Substandard water hose

Existing storage tank

In 2017, the municipal government of Soto la Marina tried to improve drinking water services for community residents by drilling a new well within the community and installing distribution lines to replace the existing system. However, the quality of the water from this well does not meet drinking water standards and is not adequate for human consumption. The condition and quality of the construction of the new distribution network is also unknown. An inspection of the new pipe will be conducted prior to procurement of the new works to determine if this investment can be utilized for the new service.

Local residents dispose of their wastewater using on-site wastewater disposal systems that, according to an evaluation done by the Tamaulipas State Water Commission (CEAT), are in good condition and do not constitute a significant risk for human health nor the environment.[8]

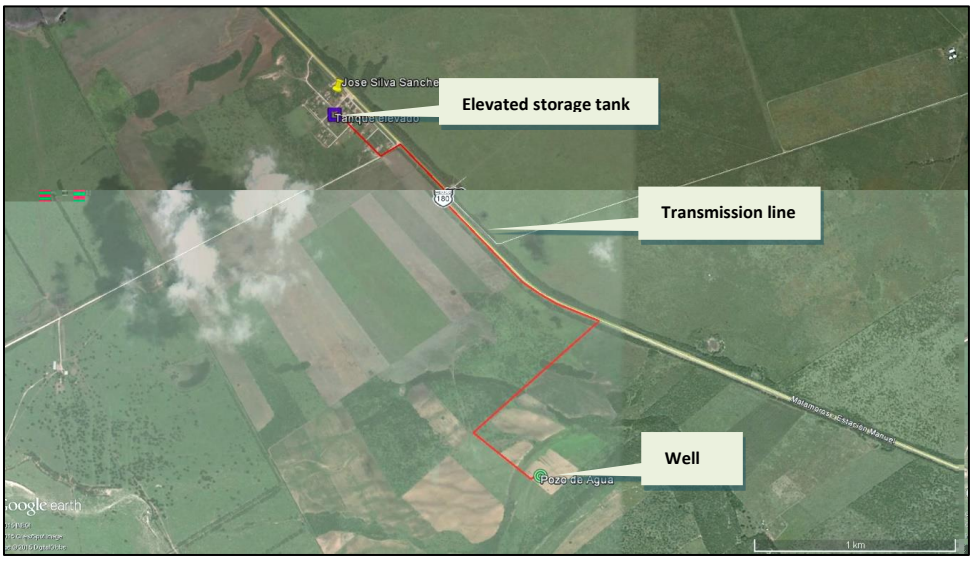
B. Project Scope

The main components of the Project are:

- Equipment for the well, with a volumetric flow rate of 1.6 lps or 25.4 gpm, consisting of:
  - Power line and transformer to supply energy to well;
  - Electromechanical equipment;
  - Chlorination unit;
  - Perimeter fence; and
  - Rehabilitation of control room;
- Construction of an elevated water storage tank, 10 meters (33 ft) above ground, with the capacity to hold 25 cubic meters (6,600 gallons) of water;
- Installation of 3,052 meters (10,012 ft) of a 2-inch PVC water transmission line, from the well to the elevated tank; and
- Installation of 1,651 meters (5,417 ft) of 2-inch PVC water distribution lines.

With chlorine disinfection, the quality of the well water will meet the parameters established by Mexican Official Standard NOM-127SSA1-1994 for drinking water supply. Figure 4 shows the general location of the Project components.

Figure 4
PROJECT LOCATION



[8] Source: CEAT, Official Letter No. CEAT/0931/18, dated May 23, 2018.

The final design was prepared pursuant to CONAGUA guidelines and the provisions of NOM-001-SEDE-2012 and NOM-127-SSA1-1994 and its 2000 amendment. Additionally, the final design includes the implementation of green building practices as part of the technical construction specifications. For example, the final design specifies the use of materials suitable for the Project and that guarantee durability at a low cost. It also specifies the use of local materials for trench filling to avoid transportation costs and emissions.

C. Technical Feasibility

During the final design process, alternatives related to pipe material, diameter and layout; the tank control system; and chlorination process, among others technical factors, were evaluated to determine the most appropriate technology and scope of each component. The technical evaluation was based on the following parameters:

- Proposed layout;
- Capital cost;
- Operation and maintenance costs; and
- Material and equipment reliability.

Pipe diameters were calculated using suitable pressure and strength ranges. The analysis also considered various pipe materials that meet the specifications established in current standards and regulations. High-density polyethylene (HDPE), PVC and asbestos cement pipes were assessed, taking into consideration their characteristics and suitability for the soil type in the Project area. PVC was selected as the best material for the transmission and distribution lines.

Power will be supplied to the water well facilities by installing a 15-kVA transformer with 34,500 volts of primary voltage and 240 volts of secondary voltage, which will be mounted on a pole. The transformer will be located within the premises of the water well. The design criteria used to develop the layout of the electrical installations at the well was based on the standards and codes required to obtain the authorization for the connection from the Federal Electricity Commission, including those established in Official Mexican Standard NOM-001-SEDE-2012.

D. Management and Operation

Management and operation of the proposed water distribution system will be the responsibility of COMAPA. The utility currently serves a total of 4,755 water hookups and is organized in various departments, including: Operation, Finance and Management.

The Sponsor estimates that, after Project implementation, system operation and maintenance expenses will be approximately MX$45,000 (US$2,500) a year. The impact of the proposed Project on the operations and maintenance budget and procedures has been reviewed. To offset these costs, residents will be charged an average monthly bill of approximately MX$90.00 (US$5.00). Based on results of the review and additional revenue stream, the budget appears sustainable.

The Sponsor has an operation and maintenance manual that includes routine tasks, as well as procedures to address unexpected conditions and ensure the proper operation of the system. An updated manual will be prepared and delivered to the Sponsor upon completion of the Project.

Additionally, COMAPA will ensure that the potable water distributed by the Project complies with Official Mexican Standard NOM-127SSA1-1994, which establishes quality standards for drinking water.

E. Land Acquisition and Right-of-Way Requirements

All land or rights-of-way have been acquired for the development of this Project. Waterlines will be laid along permanent easements and public and private rights-of-way. COMAPA entered into an agreement with the landowners where the water and power lines are to be installed, in order to use their rights-of-way to convey water from the well to the community of José Silva Sánchez. The water storage tank will be installed on an area shared by the community for multiple uses.

F. Project Milestones

Once the Notice to Proceed is received for construction of the water distribution infrastructure, the work is expected to take approximately seven months to complete. Potential factors affecting the Project completion timeline, such as weather or the delivery of the materials, were considered in estimating construction duration.

Table 2 provides a summary of critical Project milestones and their respective status.

Table 2
PROJECT MILESTONES

Key Milestones	Status
Environmental clearance - Mexico	Complete in August 2012*
Final design	Complete in November 2015
Procurement for CAP-funded components	Anticipated in the third quarter of 2018
Construction period with CAP grant	Estimated period of 7 months

* Source: Official Letter No. SGPA/03-2174/12 dated August 28, 2012.

3.2. Environmental Criteria

A. Environmental and Health Effects/Impacts

i) Existing Conditions

The community of José Silva Sánchez does not have a formal water distribution system. The existing system consists of a shallow water well with no pumping equipment and a network of polyethylene hoses, which suffer constant leaks and breaks. These conditions force the

community to obtain their water supply from water trucks provided by COMAPA. The Project will contribute to improved health conditions in the community by providing reliable access to safe drinking water, eliminating the risks of waterborne disease associated with the inadequate transport and storage of water for human consumption.

ii) Project Impacts

The Project is expected to generate environmental and human health benefits related to the following outcomes:

- Provide first-time access to a safe and reliable drinking water service to 33 new residential service connections.
- Assure sufficient water supply (pumping capacity and storage).

The no-action alternative was not considered viable for the Project, since the lack of access to safe and reliable drinking water could result in significant health and safety hazards for the public. Residents rely on tanks and plastic containers to store water delivered by truck. These receptacles are often subject to contamination and the proliferation of microbes if they are not properly maintained. Additionally, the new service infrastructure will eliminate the necessity to truck water from the city of Soto la Marina to the José Silva Sanchez, reducing the inherent risk of water contamination from the transportation and delivery processes.

As a reference to existing health statistics, Table 3 shows annual waterborne disease incidents for Soto la Marina, Tamaulipas.

Table 3
WATERBORNE DISEASE STATISTICS FOR SOTO LA MARINA, TAMAULIPAS

Disease	Number of cases/year			
	2014	2013	2012	2011
Intestinal infections by other organisms	970	1,491	1,366	1,150
Other helminthiasis	23	30	61	52
Intestinal amoebiasis	24	105	59	59
Paratyphoid fever and other Salmonellosis	88	107	81	46

Source: Automated Epidemiological Monitoring System, 2017.

The infrastructure will provide safe drinking water to residents and will help prevent potential health threats.

iii) Transboundary Impacts

No negative transboundary impacts are anticipated.

B. Compliance with Applicable Environmental Laws and Regulations

The Project will comply with Official Mexican Standard NOM-127SSA1-1994, which establishes quality standards for drinking water.

i) Environmental Clearance

The Project will be constructed within previously disturbed areas, including existing rights-of-way. The Project will not require an Environmental Impact Statement as determined by the Mexican Ministry of Environment and Natural Resources (SEMARNAT), as indicated in Official Letter No. SGPA/03-2174/12 issued by the SEMARNAT Federal Delegation in Tamaulipas. Additionally, water rights are not required for the Project as documented by Official Letter No. B00.00. R11.04.1.-0392/2013 issued by the Mexican National Water Commission (CONAGUA) on February 28, 2013.

ii) Mitigation Measures

Only minor environmental impacts are anticipated during construction of the Project, provided that the tasks are implemented in accordance with best management practices. Typical mitigation measures to be practiced include:

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

By following best management practices, the temporary impacts due to construction will be minimized. In addition, final designs include the implementation of green building practices such as the use of high efficiency equipment, use of local materials, and efforts to reduce the excavation processes, among others.

iii) Pending Environmental Tasks and Authorizations

There are no environmental authorizations pending.

3.3 Financial Criteria

The total estimated cost of the Project is US$260,000, which includes the funding for construction, supervision, contingencies and value-added taxes (VAT). The Sponsor requested a grant from NADB though its Community Assistance Program (CAP) to cover up to 90% of the implementation of the Project. Table 4 presents a breakdown of total Project costs, as well as the sources of funding.

Table 4
USES AND SOURCES OF FUNDS
(US $)

Uses	Amount (US$)	%
Construction*	$ 260,000	100
TOTAL	**$ 260,000**	**100**
Sources	**Amount (US$)**	**%**
Mexican funding (state & local)	$ 26,000	10
NADB-CAP grant	$ 234,000	90
TOTAL	**$ 260,000**	**100**

* Estimated costs include 16% value-added tax (VAT), 10% for supervision and 10% for contingencies for CAP funded components.

Since the Project costs will be paid in Mexican pesos, NADB is proposing that the Board approve a CAP grant for up to US$250,000 to cover any possible variation in the dollar amount based on fluctuations in the exchange rate. At no time will the CAP grant exceed 90% of the total project cost in pesos.

The proposed Project complies with all CAP criteria. It is located within the U.S.-Mexico border region served by NADB, is being sponsored by a public-sector entity and is in an environmental sector eligible for NADB financing. Additionally, as a water project, it is considered a priority under the CAP program. As shown in the above table, the Project Sponsor has agreed to contribute funding to cover 10% of the project costs, as required under the program. Upon favorable inspection, the Mexican funds invested in the construction of the water distribution system and water connections could be considered as part of the Sponsor's required contribution. As necessary, additional funds will be provided by the Tamaulipas State Water Commission (CEAT).

Completion of the final design and procurement documents was supported by a grant from the Technical Assistance Program, jointly funded by NADB and the Border Environment Cooperation Commission (BECC). Additionally, all necessary pre-procurement permits, and authorizations have been obtained, and the Project Sponsor is ready to initiate bidding for construction once funding has been approved.

4. PUBLIC ACCESS TO INFORMATION

4.1 Public Consultation

NADB published the Draft Certification and Financing Proposal for a 14-day public comment period beginning May 25, 2018. The following Project documents were made available for public access:

- Final Design for the Rehabilitation of the Water System in José Silva Sánchez, Municipality of Soto la Marina, Tamaulipas.

- Official Letter SGPA/03-2174/12 issued by the SEMARNAT Federal Delegation in Tamaulipas on August 28, 2012.
- Official Letter No. B00.00. R11.04.1.-0392/2013 issued by CONAGUA on February 28, 2013.

The public comment period ended on June 8, 2018, with no comments received.

4.2 Outreach Activities

The Sponsor promoted the Project at meetings of its board and in CEAT coordination meetings. Board meetings were open to the general public, and meeting agendas were made available to the public beforehand. The COMAPA Board of Directors consists of representatives from various sectors of the community of Soto la Marina, including public-sector organizations, the municipal government and the social and private sectors. The Board has been informed about the proposed tasks and Project scope. Additionally, a media search related to the Project was conducted by NADB; however, no articles were found. No opposition to the Project has been detected.