



CERTIFICATION AND FINANCING PROPOSAL

INFRASTRUCTURE PROGRAM FOR THE STATE OF NUEVO LEON:

MODERNIZATION AND IMPROVEMENTS TO DON MARTIN
IRRIGATION DISTRICT 004 IN ANAHUAC, NUEVO LEON
STATE OF NUEVO LEON

Revised: October 21, 2014

CERTIFICATION AND FINANCING PROPOSAL

MODERNIZATION AND IMPROVEMENTS TO DON MARTIN IRRIGATION DISTRICT 004 IN ANAHUAC, NUEVO LEON STATE OF NUEVO LEON

INDEX

EXECUTIVE SUMMARY.....	2
1. ELIGIBILITY.....	4
2. CERTIFICATION CRITERIA	
2.1 Technical Criteria	
2.1.1. Project Description.....	4
2.1.2. Technical Feasibility.....	11
2.1.3. Land Acquisition and Rightway Requirements.....	12
2.1.4. Management and Operations.....	12
2.2 Environmental Criteria	
2.2.1. Compliance with Applicable Environmental Laws and Regulations.....	12
2.2.2. Environmental Effects/Impacts.....	13
2.3 Financial Criteria	
3. PUBLIC ACCESS TO INFORMATION	
3.1 Public Consultation.....	17
3.2 Outreach Activities.....	17

EXECUTIVE SUMMARY

MODERNIZATION AND IMPROVEMENTS TO DON MARTIN IRRIGATION DISTRICT 004 IN ANAHUAC, NUEVO LEON STATE OF NUEVO LEON

Project:	The proposed project consists of the rehabilitation and modernization of the Don Martin Irrigation District 004 (DMID or “District”), located in Anahuac, Nuevo Leon and includes lining or enclosing distribution infrastructure and irrigation system improvements (the “Project”).
Project Objective	The Project will increase water management efficiency, including water conservation efforts in agricultural activities through the modernization of water distribution infrastructure and improvements to irrigation systems, resulting in a decrease in water extraction from the reservoir to reach a sustainable water volume of 146.2 million cubic meters (M ³ m).
Expected Project Outcomes:	The expected environmental and human health benefit expected from the implementation of the Project is to increase water use efficiency in the DMID to an estimated 60%.
Population Benefited:	18,480 residents ² .
Sponsor:	State of Nuevo Leon.
Borrower:	State of Nuevo Leon.
Project Cost:	Up to \$647.3 million pesos (US\$49.8 million ³).

¹ Source: Mexican National Water Commission (CONAGUA), Comprehensive Modernization Master Plan for Don Martin Irrigation District 004 (Plan Director para la Modernización Integral del Distrito de Riego 004 Martín), 2006, which indicates that the average efficiency of the DMID for the last 20 years (1985-2005) has been 41.8%. Upon completion, the improvements within the District will support an efficiency of 60%, allowing the local agriculture industry to operate based on a sustainable water volume as determined by CONAGUA.

² Source: Mexican national statistics institute (INEGI), 2010 census data for the town of Anahuac, Nuevo Leon.

³ The portion of the comprehensive DMID modernization effort to be covered by the State of Nuevo Leon.

⁴ Unless otherwise noted, all U.S. dollar figures are quoted at an exchange rate of \$13.0 pesos per dollar.

Loan Amount: Up to \$550.0 million pesos (US\$42.3 million) out of a total loan amount of \$1,000 million pesos (US\$76.9 million) for two separate projects⁵

Uses & Sources of Funds:
 (Millions of pesos)

Uses	Amount	%
Project costs*	\$ 647.3	100.0
TOTAL	\$ 647.3	100.0
Sources	Amount	%
NADB Loan	\$400.0 to 550.0	61.8– 85.0%
Federal, state and users' funds	247.3 to 97.3	38.2– 15.0%
TOTAL	\$ 647.3	100.0

*Includes design, construction, supervision, contingencies and taxes

⁵ The loan amount requested by the State of Nuevo Leon from NADB will be used to finance two separate projects: a) Air Quality Improvements through Street Paving for the Monterrey Metropolitan Area and b) Modernization and Improvements to Don Martin Irrigation District 004 in Anahuac, Nuevo Leon.

CERTIFICATION AND FINANCING PROPOSAL

MODERNIZATION AND IMPROVEMENTS TO DON MARTIN IRRIGATION DISTRICT 004 IN ANAHUAC, NUEVO LEON STATE OF NUEVO LEON

1. ELIGIBILITY

Project Type

The Project falls within the eligible sector of water conservation.

Project Location

The Project will be implemented in the municipality of Anahuac, Nuevo Leon, approximately 65 kilometers south of the U.S. Mexico border and within the 300m BECONIADB jurisdiction.

Project Sponsor and Legal Authority

The public sector Project Sponsor is the State of Nuevo Leon (the “State” or the “Sponsor”), a public entity legally constituted in accordance with Articles 40 and 43 of the Constitution of the United Mexican States and Articles 29 and 30 of the Constitution of the Free and Sovereign State of Nuevo Leon. The Nuevo Leon State Congress, through approval of a 2014 revenue law, authorized a debt ceiling that will partially fund the proposed Project. For 2015, the Nuevo Leon State Congress is expected to authorize additional debt that will include the remaining funding required for the Project.

2. CERTIFICATION CRITERIA

2.1 TECHNICAL CRITERIA

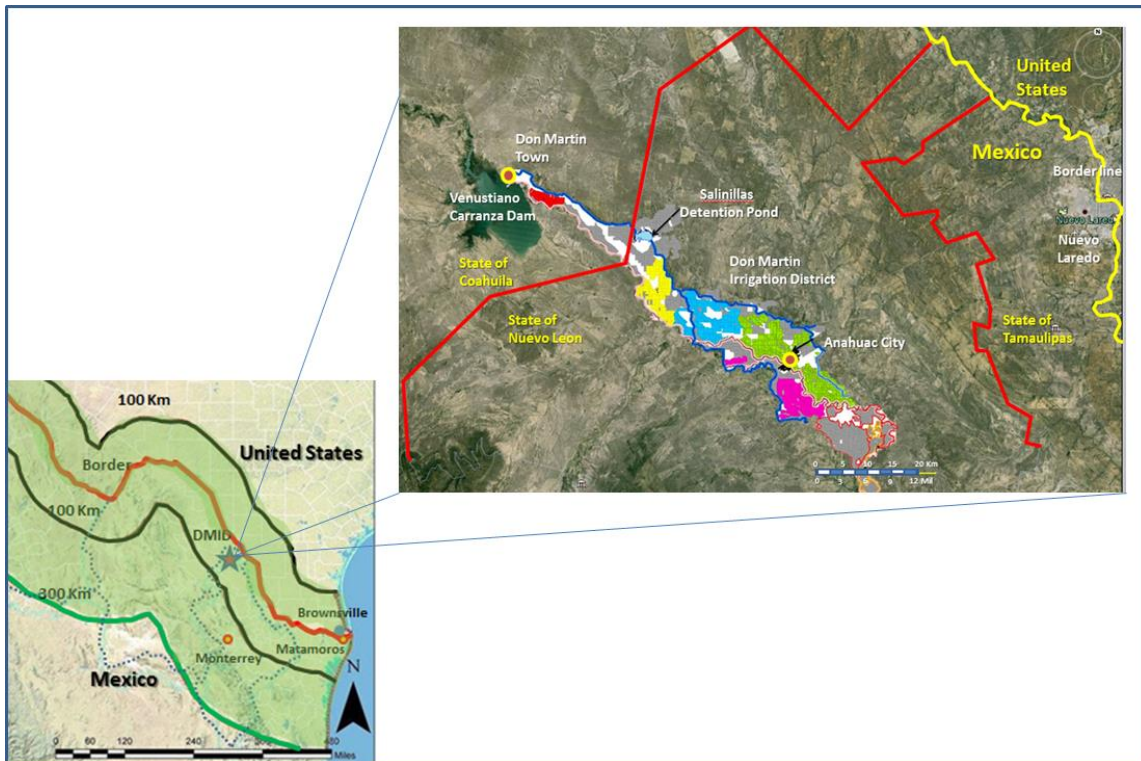
2.1.1. Project Description

Don Martin Irrigation District 004 (DMID or the “District”) is located in the municipalities of Juarez, Coahuila, and Anahuac, Nuevo Leon. The District starts in the state of Coahuila at the Venustiano Carranza Reservoir (better known as the Don Martin Reservoir⁶) near the town of Don Martin, and extends through the municipality of Anahuac in the state of Nuevo Leon. The District comprises a total surface area of 29,615 hectares (73,190 acres), 93.5% of which

⁶ The Venustiano Carranza Reservoir is located in the municipalities of Juarez and Progreso, Coahuila, 70 km (43 miles) to northeast of the town of Anahuac, Nuevo Leon.

located in the state of Nuevo Leon and the remaining 6.5% in the state of Coahuila. The proposed Project is located, in its entirety, within the state of Nuevo Leon. Figure 1 shows the geographic location of the area included in the scope of the Project

Figure 1
 MAP OF PROJECT AREA



Community Profile

According to the 2010 population census in Mexico, the state of Nuevo Leon has 4.65 million residents. Between 2000 and 2010, Nuevo Leon experienced an annual growth rate of 2.16%, which was higher than the national annual growth rate of 1.78%.

Based on the latest economic census, manufacturing constitutes the most important sector in Nuevo Leon, generating 55.8% of its gross domestic product (GDP) and employing 29.1% of its working population. Commerce represents the second largest sector, generating 9.2% of the GDP and employing 23.5% of the work force while financial services represents 6.1% of the economy and contributes with 3.2% of total employment. Because of its diverse economic, commercial and industrial activities, in 2009, the state of Nuevo Leon generated 8.3% of the total GDP for the country.

⁷ Source: INEGI, General Population Census 2010.

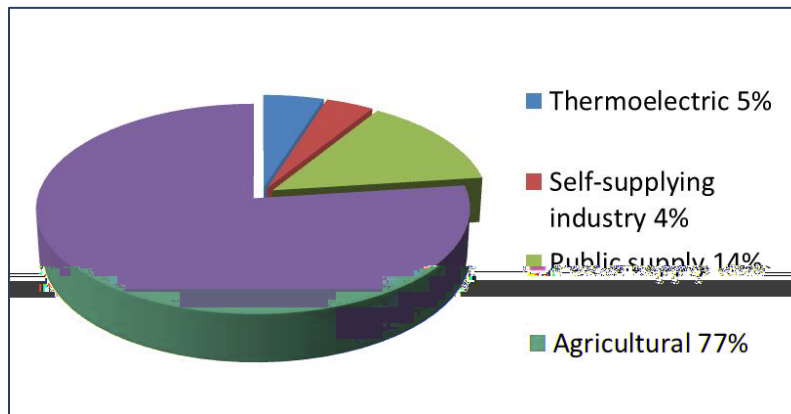
⁸ Source: INEGI, 2009 economic census.

The Project will primarily benefit the population of the municipality of Anahuac, most of whom are involved in the agriculture and livestock industries. Anahuac has a total population of 18,480 inhabitants, which represents 0.4% of the state population. Over the last 10 years, the community experienced an annual growth rate of 0.32%, which is lower than the national growth rate of 1.8%⁹.

Mexican Water Management Profile

In 2012, total water demand in Mexico was approximately 78,400 Mm³ (63.5 million acrefeet), 8.3% of which was met by water supply from overexploited aquifers, according to the Ministry of Agriculture, Livestock, Rural Development, Fisheries and Nutrition (SAGARPA)¹⁰. The Mexican National Water Commission (CONAGUA) estimates that the demand for water will increase 16.3% compared to demand in 2012, reaching almost 91,000 Mm³ (74 million acrefeet) by the year 2030. During the same period, the availability of water is expected to decrease by 12.9%, leaving only 68,000 Mm³ (55 million acrefeet), which represents a deficit of 23,000 Mm³ (19 million acrefeet) to meet the increased demand. This anticipated growth in demand is evidenced by water demand in 2013, which was estimated as 82,000 Mm³ (67 million acrefeet), an increase of nearly 6% in one year¹¹. Figure 2 illustrates the water usage in Mexico.

Figure 2
 WATER CONSUMPTION IN MEXICO



Source: CONAGUA. Statistics on Water in Mexico 2011

The National Water Plan (NWP) establishes the strategies, priorities, and regulations needed to support proper management of national water resources. It also identifies the availability, use and application of water at the national level. The NWP contains six guiding principles designed to strengthen water management by increasing technical capacities and technology in the sector to ensure an adequate water supply for human use and consumption. Objectives 1, 4 and 5 of the NWP specifically address strategies and action items for improving water management in

⁹ Source: INEGI, General Population Census, 2010.

¹⁰ Secretaria de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación (SAGARPA).

¹¹ Source: SAGARPA, Estimate of Water Demand and Consumption, 2012.

the agricultural sector, which is the largest consumer of water at the national level. The Project proposes system improvements closely aligned with these objectives.

According to the NWP, the main challenge in water use for agriculture, besides availability, is inefficient water delivery systems and irrigation techniques. Irrigation districts were designed using gravity water delivery systems, the prevailing technology at the time. This irrigation practice uses more water than necessary by predominantly implementing surface or flood irrigation techniques. Additionally, aging infrastructure contributes to decreased efficiency in water management.¹² SEMARNAT estimates that efficiency averaged 64% for the period 1990-2006.

In addition to physical infrastructure, a strong institutional structure is also important for proper water management. To ensure decentralized and participatory management of water resources nationwide, a series of permanent agencies have been set up by CONAGUA at different levels in Mexico. These entities include 13 river basin organizations, 25 river basin councils, 21 river basin commissions, 25 river basin committees, 78 technical groundwater committees, and 85 irrigation districts.

The irrigation districts have various types of infrastructure to manage the water resources used in agriculture, such as reservoirs, storage basins, pumping stations, wells, canals access ways, etc. The irrigation districts were constructed, operated and managed by the Federal government until 1990, when management was transferred to the irrigation district users. By the end of 2011, more than 99% of the total surface area of the irrigation districts has been transferred to user associations. However, a portion of the infrastructure continues to be managed by the Federal Government, and all irrigation districts are regulated by CONAGUA.¹³

Don Martin Irrigation District 004 (DMID)

Of the 85 irrigation districts in Mexico, two are located in the state of Nuevo Leon: Don Martin Irrigation District 004 (DMID) and Las Lajas Irrigation District 001. The DMID, also known as District 004, is located in CONAGUA Region VI (the Rio Bravo region) within the Bravo Conchos Watershed. The water source for the DMID is the Venustiano Carranza Reservoir, which has a surface area of 19,800 hectares (49,000 acres) and a capacity of 1,358 million acre feet), with an average volume of 281 Mm³. The reservoir also serves as the source of water supply for Anahuac.¹⁴

The DMID is an important agricultural area in the state of Nuevo Leon. Main crops include basic grains, such as corn, wheat and sorghum. Since the early part of the 1990s, before the prolonged drought began, its production represented 13% of total state production. The DMID began operating in 1931 with a total area of over 60,000 hectares (148,000 acres). In 1941, a presidential decree was issued reducing its surface area due to water supply problems. As a

¹² Efficient water use for irrigation considers several factors from storage to conveyance systems and parcel irrigation, including evaporation in storage systems, seepage in the conduction system, lack of accuracy in measurement, and water losses through evapotranspiration of crops.

¹³ Source: CONAGUA, National Water Information System, 2012 Digital Water Atlas in Mexico.

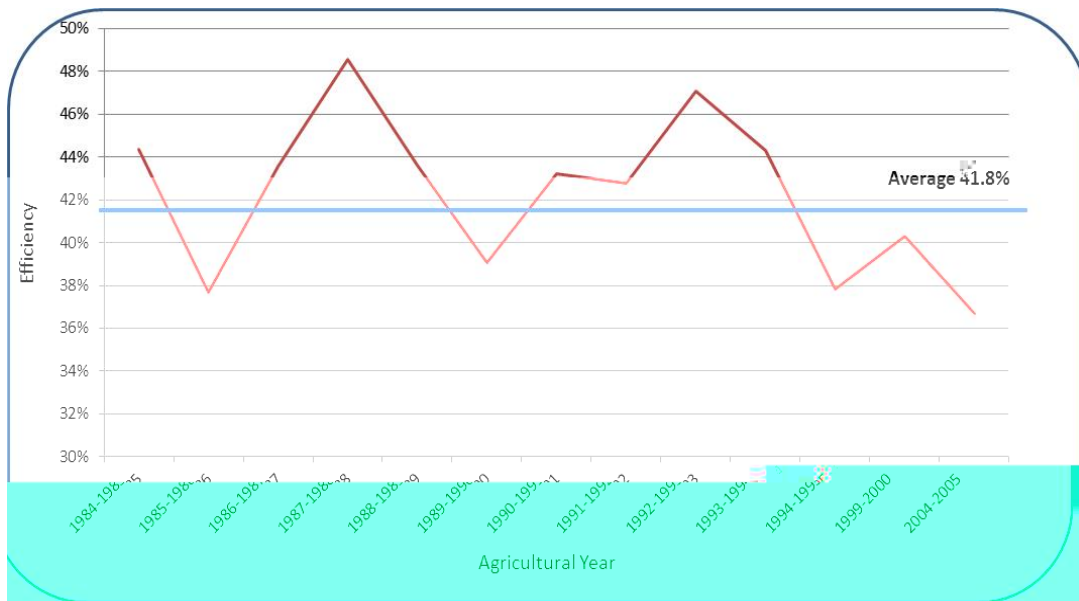
¹⁴ Source: CONAGUA, Comprehensive Modernization Master Plan for Don Martin Irrigation District 004 (DMID Master Plan).

result of this resizing, the District currently covers just over 29,600 hectares (73,000 acres) with irrigation system infrastructure consisting of 756 km (470 miles) of irrigation canals and 115 km (74 miles) of main distribution canals and 637 km (396 miles) of secondary distribution canals.¹⁵

Currently, the DMID has a deficient operation due to the water losses caused by obsolete and deteriorated infrastructure, as well as the inefficient operation of both the main and the secondary canal systems. This condition has hindered the feasibility of planting crops, other than basic grains. Additionally, poor crop yields and the complete abandonment of agricultural land by some of the land owners have negatively impacted the agriculture industry in the northern part of the state of Nuevo León.¹⁶

Although the DMID does not have a metering system in place to be able to measure the amount of water provided to each user, CONAGUA estimated that the average efficiency in the District is 41.8% due to water losses in the conveyance systems and the practice of flood irrigation. Figure 3 shows the estimated average efficiency in the DMID for the agricultural years from 1984 to 2005.

Figure 3
 ESTIMATED EFFICIENCY DMID (1984-2005)



Source: CONAGUA DMID Master Plan

The operation of the DMID is also affected by the climate of the region, where wide variations in water availability due to long periods of drought have resulted in effective irrigation in only three of the last ten years.¹⁷ Due to droughts and water shortages over the last 20 years, the average area irrigated has been 10,026 hectares (24,767 acres) or only 34% of the land.

¹⁵ Source: Web page of the State Information System for the Sustainable Development of Rural Nuevo León.

¹⁶ Source: CONAGUA Final design for Resizing and Modernizing Don Martín Irrigation District 004.

¹⁷ Source: CONAGUA DMID Master Plan.

For the above reasons, conditions need to be created that will assure DMID users that water will be available for irrigation by promoting long-term modernization and rehabilitation measures that will allow for the effective and sustainable use of the available water. Because of this need, in 2006, CONAGUA initiated the planning studies needed to achieve a more efficient use of water resources, sufficient water supply and increased agricultural production for DMID users. These studies include the Comprehensive Modernization Master Plan for Irrigation District 004 Don Martin (Master Plan), which contains an analysis of the sustainable volume of water in the Venustiano Carranza basin and reservoir. Additionally, the DMID Master Plan proposes resizing the DMID surface area to 14,881 hectares (36,770 acres) and implementing infrastructure improvements to increase efficiency and water availability.

On June 25, 2012, the State of Nuevo Leon, SAGARPA, CONAGUA and the users associations of the DMID of the State of Nuevo Leon signed a coordination agreement for the Modernization and Rehabilitation of Don Martin Irrigation District 004 (the "Coordination Agreement"). The purpose of the Coordination Agreement is to confirm the organizations' commitment to participate in the execution of the necessary technical activities and provide funding necessary to modernize and improve the DMID.

Scope and Design

Based on the Coordination Agreement, the investments committed by the State of Nuevo Leon are expected to fund up to 28% of the following infrastructure improvements:

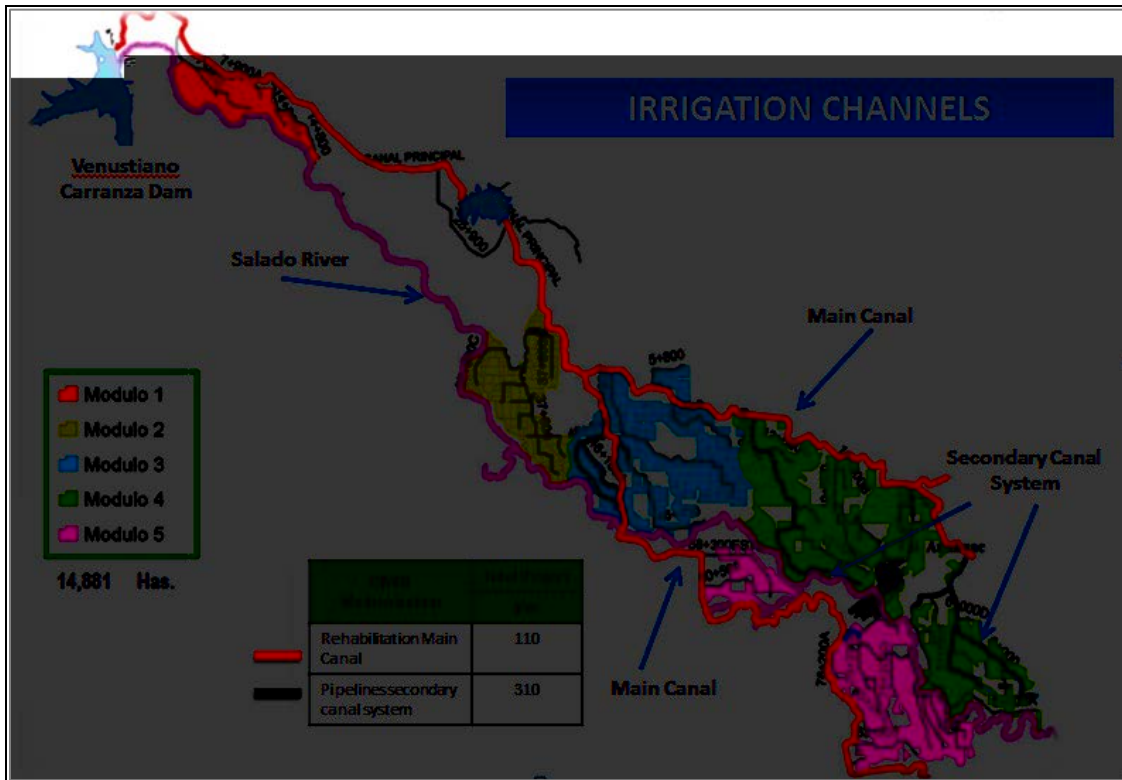
- x Lining of up to 110 km (69 miles) of the main distribution canal;
- x Enclosing up to 310 km (193 miles) of secondary canals and installation of metering systems to measure the water volume delivered to the users;
- x Modernizing irrigation systems, supporting conversion from traditional surface or flood irrigation practices to more efficient irrigation technologies.

In addition to the investments by the State of Nuevo Leon, funding will be provided by CONAGUA, SAGARPA and DMID users to implement all of the proposed infrastructure improvements. Subject to the availability of funds, all the project activities included in the DMID modernization and improvement project are expected to be completed within four years. Figure 4 shows the location of the main and secondary canals as well as the location of the expected works.

¹⁸ Source: Ibid.

¹⁹ For CONAGUA, sustainable water use is achieved when its use generates social wellbeing, facilitates economic development, and preserves adequate quality and quantities for current and future generations as well as for the flora and fauna of the region. Office of the President, 2014. <http://www.presidencia.gob.mx/uso-sustentable-del-agua/>

Figure 4
 IRRIGATION DISTRICT INFRASTRUCTURE



Source: State of Nuevo Leon 2014 presentation

CONAGUA is responsible for developing final designs for all infrastructure tasks. According to the information provided by the Sponsor, investments related to the proposed improvements began in 2012. In 2013, approximately 7.5 km (4.7 miles) of the main canal had been rehabilitated and 61 km (37.9 miles) of pipeline had been installed to enclose the secondary canal system.²⁰ Table 1 shows the status of key tasks for the implementation of the Project.

Table 1
 PROJECT MILESTONES

Key Milestones	Status
Procurement processes	Ongoing
Environmental authorization clearance	Not applicable
Right-of-way	Complete
Water rights	Complete

* According to CONAGUA's official letter No. BOO.821.DR.0084 (14) dated September 9, 2014, which references conclusions of the Master Plan.

²⁰ Source: State of Nuevo Leon, presentation on resizing and modernizing Don Martin Irrigation District 004, June 2014.

The agencies involved in this comprehensive project have committed to form a follow-up group to evaluate the progress of works, ensure project completion and determine the outcomes and water savings after all investments have been completed.

2.1.2. Technical Feasibility

Selected Technology

CONAGUA and the State of Nuevo León through its agricultural development agency, Corporación para el Desarrollo Agropecuario de Nuevo León (COANL) and the Nuevo León water institute, Instituto del Agua de Nuevo León (IANL), have developed various studies, needs assessments and designs for the DMID agricultural water infrastructure for the purpose of establishing the best design parameters for the optimal use of the water available. These studies include

- x Comprehensive Modernization Master Plan for Irrigation District 004 Don Martin (August 2006) This study developed by CONAGUA includes the following elements: 1) modernization of the DMID, 2) determination of sustainable irrigation flow and 3) district resizing. It specifies the need for a geographic information system (GIS) to collect information on the parcels of land and provide a tool to follow up the operation of the District. The study also determined that the sustainable water volume for the irrigation district is approximately 46 Mm³ per year, which represents a reduction of nearly 30% over the current volume pumped from the reservoir, which averages 191 Mm³ per year.
- x Geographic Information System Model Don Martin Irrigation District 004 (December 2008) This study was developed by CONAGUA to determine the need to update the user database and records as well as to implement a GIS for the District. The study also identified geographic areas where the soil is not suitable for the establishment of agricultural crops as well as vegetated and unused parcels, which for various reasons and especially the lack of steady water supply, have been left unirrigated. The study concluded that there is a need to resize the District.
- x Flagship Project “Sustainable Water Management Don Martin Irrigation District 004” (June 2009) This study developed by CONAGUA describes detailed actions for the sustainable water management in the DMID. Some of the recommendations deriving from this study include works to rehabilitate and modernize the transmission and distribution infrastructure as well as eliminate approximately 14,700 hectares (36,411 acres) from the DMID boundaries.

Based on the results of these studies, CONAGUA and the State of Nuevo León defined the infrastructure improvement strategies presented in this Project.

2.1.3. Land Acquisition and Right-of-way Requirements

CONAGUA, in compliance with the Mexican National Water Act, grants DMID users water rights as well as the right to use irrigation infrastructure. The Project will be developed within areas and right-of-way of the District. No land acquisition or additional right-of-way are necessary.

As specified in the Coordination Agreement, the user associations have agreed to allow access to any land or areas where the main and secondary canals or pipeline routes are located for the construction of works, without any compensation for such access. Additionally, the user associations will manage and facilitate access to material banks during construction.

2.1.4. Management and Operations

According to the Coordination Agreement, DMID users are responsible for the operation, maintenance and administration of the main and secondary irrigation canal systems as well as for drainage and roads. To coordinate operation and maintenance activities, the District users created a limited liability company, Unión de Asociaciones de Usuarios Anáhuac, S.R.L. de I.P. de C.V. The purpose of the company is to sign and amend any contracts concerning the management, operation, conservation and maintenance of the water infrastructure as well as focusing the proceeds of loans obtained by users to cover operation, maintenance and improvement needs related to the water infrastructure and any assigned equipment. The users cover the costs of operation and maintenance with the income generated by crops.

To reduce the DMID users' investment, the Nuevo Leon State Government offered economic support in addition to that offered by the Federal Government for the development of the project to modernize the DMID. Moreover, the Coordination Agreement indicates that the users' associations will receive training and support in the use of pressurized irrigation systems, development of profitable low-water-use crops, marketing of agricultural products and gaining access to the agricultural loans provided by SAGARPA and the State of Nuevo Leon.

2.2 ENVIRONMENTAL CRITERIA

2.2.1. Compliance with Applicable Environmental Laws and Regulations

Applicable Laws and Regulations

The modernization and rehabilitation of the DMID will occur in areas within the District that are subject to the jurisdiction of CONAGUA, have been impacted since 1930, and are not part of protected natural areas or regions considered a priority for biodiversity. Based on these

²¹ Source: CONAGUA, DMID Master Plan.

²² Source: Agreement between SAGARPA, CONAGUA, the State of Nuevo Leon and the DMID user associations in Nuevo Leon dated June 25, 2012, Tenth Clause.

²³ Source: Incorporation document of the company of the Don Martin Irrigation District 004 User Associations in Coahuila and Nuevo Leon dated November 17, 2003.

²⁴ Source: CONAGUA, DMID Master Plan.

characteristics, the DMID Master Plan determined that an environmental authorization would not be required to implement the Project. CONAGUA confirmed this through Official Letter No. BOO.821.DR.004-081(14) dated September 9, 2014.

The Project will support compliance with the following environmental laws and regulations related to water management

- x Mexican National Water Law which provides the legal framework for water management in Mexico. It states that the use of the nation's water or the right to discharge wastewater will be carried out through concessions.
- x General Law of Ecological Balance and Environmental Protection (LGEYERPA) establishes the environmental regulatory framework, expands the strategic vision and conveys specific powers and duties to the states and municipalities, so that environmental problems can be addressed directly.

The Project will support the implementation of environmental legislation based on improved water management, as well as help preserve the quality and quantity of water for its comprehensive sustainable development, as indicated in the Mexican National Water Law.

Environmental Studies and Compliance Activities

Based on the general characteristics of the Project, an environmental clearance study and authorization is not required for its construction. Because the Project is located in a previously disturbed area, only minimal temporary impacts are anticipated, primarily, associated with construction. In accordance with the practices recommended by the federal environmental authorities, mitigation measures to address the temporary environmental effects of construction will be carried out.

Pending Environmental Tasks and Authorizations

There are no pending environmental tasks or authorizations.

Compliance Documentation

CONAGUA Letter No. BOO.821.DR.004-081(14) dated September 9, 2014 satisfies the compliance documentation required for the Project.

2.2.2. Environmental Effects/Impacts

The DMID has existed since the 1930's and is one of the oldest irrigation districts in the country. The land served by the District has been predominantly used for agricultural productivity and is considered previously impacted. For this reason, no significant negative impacts on the natural resources of the area are foreseen in relation to the activities included in the Project. On the contrary, the purpose of the Project is to allow for more efficient management of water resources, by reducing the volume pumped from the reservoir, maintaining the sustainable volume necessary for annual agricultural activities and improving efficiency in the water used for irrigation. The infrastructure will reduce water lost to evaporation and filtration in unlined canals and surface irrigation techniques, thereby increasing the system's efficiency to

60%. Additionally, improvements in the water distribution system will prevent losses caused by weeds and other foreign objects in the canal system, which reduce water flow and capacity.²⁵

In addition to the capital improvement project, other operational strengthening activities are expected to be implemented in accordance with the Agreement. For example, land that is currently abandoned and has not been cultivated will be eliminated from the District and reclassified for better use as rangeland for livestock. The DMID associations will also receive training from SAGARPA and the State of Nuevo Leon in the proper use and application of chemical products such as fertilizers, which will contribute to the prevention and mitigation of environmental impacts and health problems related to the indiscriminate use of such products.

Existing Conditions and Project Impact Environment

As water becomes scarce and more costly, implementing measures that promote a more efficient use of water in agriculture is crucial. Traditional surface or flood irrigation techniques cause excessive water consumption. Environmental concerns related to this irrigation practice include depletion of water sources (falling water tables or reduced water levels in streams and reservoirs) soil erosion due to overapplication, runoff and leaching of chemicals, salinization of the soil (salt buildup), and harmful minerals and nutrients in return flows that drain from the irrigated areas.

As previously mentioned, the operational conditions in the DMID have been affected in recent years by water shortages and uncertainty regarding the water supply for agriculture. In addition, the poor conditions of the infrastructure for water transmission and distribution have further impacted the availability of water for irrigation. As a result the land has been underused and production has been meager, which in turn has given rise to a vicious cycle where the farmers do not have sufficient resources for the adequate operation and maintenance of the existing infrastructure, which again affects production opportunities.

Mitigation of Risks

The Project will be carried out in compliance with CONAGUA design criteria and the oversight provided by the follow-up group will ensure the use of best management practices to avoid unnecessary impacts to the environment. Additionally, as part of the modernization efforts, the DMID will support the following activities to mitigate environmental and health impacts related to agricultural activities within the District:

- x Ensure that all producers have adequate equipment to apply agrochemicals such as fertilizers, herbicides, fungicides and insecticides, and have access to specific advice about when and how to apply the recommended products.
- x Regular monitoring to detect any change or increase in soil salinity levels and apply preventive measures, if necessary.
- x Regular monitoring of soil compaction and content levels of agrochemicals in the water table.

²⁵ CONAGUA Detailed action plan for the Project, Sustainable Water Management in Don Martin Irrigation District 004, 2009.

- x Promote cultivation practices to prevent soil erosion, promote soil recovery, conserve soil humidity and incorporate organic matter into the topsoil.

Natural Resources Conservation

The purpose of the proposed Project is focused on conservation of an essential natural resource—water. Based on the DMID Master Plan, the implementation of the Project will help reduce the volume of water currently pumped from the Venustiano Carranza Reservoir. The Project is expected to achieve delivery and irrigation efficiencies sufficient to eliminate the withdrawal of approximately 40 M³m³ reducing the extraction rate from approximately 191 M³m³ per year to 146 M³m³ per year, in order to maintain the sustainable water levels at the water source.²⁶

No Action Alternative

The no action alternative would further exacerbate the problem of water shortages and the abandonment of land for agricultural activities, resulting in a negative effect on a local economy, which depends on this industry. Implementation of the Project as well as additional efforts to strengthen the capacity of the agriculture users, will promote improved practices that are expected to result in better production, opportunities for higher yield crops and greater preservation of natural resources.

Existing Conditions and Project Impact

Access to sufficient quantities of safe water for domestic use, as well as for commercial and industrial applications, is critical to health and well-being and offers the opportunity to achieve human and economic development. The Project will promote a more efficient use of water, a reduction in over-extraction from available water sources, as well as the protection of water quality and the environment by instituting better management practices related to irrigation techniques and the use of fertilizers and pesticides. Projects to protect water resources help improve the community's public health.

Transboundary Effects

No significant transboundary impacts or negative effects have been identified and none are anticipated as a result of the development of the Project. The Project has the potential to provide a positive transboundary impact based on anticipated water savings as a result of the proposed works. Maintaining sustainable water levels at the Venustiano Carranza Reservoir will support reliable supplies to other streams such as the Salado River, which provides water to the Rio Grande.

Other Local Benefits

According to the DMID Master Plan developed by CONAGUA, the Project will benefit approximately 18,480 residents in Anahuac, Nuevo Leon. Implementation of the Project is also expected to trigger economic development activities in the region that addition to the DMID

²⁶ CONAGUA developed a detailed analysis based on historical data as far back as 1930 to determine the sustainable water supply volume from the reservoir.

users, will also benefit other sectors such as transportation, commerce, equipment and material supply.

2.3 FINANCIAL CRITERIA

The State of Nuevo Leon has requested a loan for up to \$1,000.0 million pesos from NADB to complete the financing of two separate projects: Basic Urban Infrastructure for the Monterrey Metropolitan Area; and Modernization and Improvements to the Don Martin Irrigation District 004 in Anahuac, Nuevo Leon, together the “Projects”. The Nuevo Leon State Congress through the authorization of its 2014 revenue law has authorized a debt ceiling which will partially fund the proposed Projects. For 2015, the Nuevo Leon State Congress is expected to authorize additional debt levels that will include the remaining funding requirements for the Projects. This Project is estimated to cost up to \$647.3 million pesos. Up to \$550.0 million pesos of the loan could be used to pay related costs, such as design, construction, and supervision if necessary. The NADB loan will complement other sources of funds.

The repayment source for the NADB loan will come from the State’s federal tax revenue derived from the General Fund. The State has pledged a portion of its current and future General Fund revenue into a Master Trust, which will serve as the payment mechanism. The pledge has been made in accordance with Article 9 of the federal Fiscal Coordination Law. The pledge instruction is irrevocable, and the trust will repay the loan automatically, thus ensuring that payments are made in full and in a timely manner.

NADB performed a financial analysis of the State of Nuevo Leon. Cash flow projections indicate that the State of Nuevo Leon has the capacity to meet all its financial obligations, including those related to this loan, without adversely affecting the normal business operations. In line with these conclusions, HR Regi, Standard & Poor’s and Fitch Ratings have rated the State of Nuevo Leon HR, Axx A and BBB+, on a local scale, respectively.

Considering the Projects’ characteristics and based on the foregoing financial and risk analysis, the proposed Projects are financially feasible and present an acceptable level of risk. Therefore, NADB proposes providing a market loan of up to \$1,000.0 million pesos to the State of Nuevo Leon, for the construction and related costs of the Projects, of which up to \$550.0 million pesos could be used for the Project described herein.

3. PUBLIC ACCESS TO INFORMATION

3.1. PUBLIC CONSULTATION

BECC released the Draft Project Certification and Financing Proposal for a 30-day public comment period beginning September 19, 2014. The following Project documentation was made available for public access:

- x Plan Director para la Modernización Integral del Riego del Distrito 004 Don Martín (Comprehensive Modernization Master Plan for Don Martin Irrigation District 004 (August 2006).
- x Modelo de Sistema de Información Geográfica del Distrito de Riego 004 Don Martín (Model Geographic Information System for Don Martin Irrigation District (December 2008).
- x Proyecto Emblemático “Manejo Sustentable del Agua en el Distrito de Riego 004 Don Martín” (Flagship Project “Sustainable Water Management in Don Martin Irrigation District 004”) (June 2009).
- x Analysis of the Water Management and Use in the Agricultural Sector of Nuevo León (October 2011).
- x Coordination Agreement between the State of Nuevo Leon, SAGARFONAGUA and the DMID user associations in Nuevo Leon (July 2012).
- x CONAGUA Official Letter No. BOO.821.DR.004/081(14). (September 2014).

The public comment period ended on October 19, 2014, with no comments received.

3.2. OUTREACH EFFORTS

As part of development of the Flagship Project “Sustainable Water Management in Don Martin Irrigation District 004” in 2009, several government officials and representatives of the users’ associations were interviewed in order to collect information related to the use of water in the DMID. According to the study the people interviewed saw the study as a genuine opportunity for modernizing the District and believed that this type of project could activate the economic sector.

The study also included interviews with farmers that currently grow crops and those that have abandoned this activity within the DMID. Through the interviews it was found that in some cases people were elderly, parcels had been completely abandoned, people were discouraged and uninterested in getting organized, and others that abandoned farming for a different activity. The interview process also made it possible to identify all stakeholders involved in the Project, such as the users’ associations.

In order to define the strategic actions, the Project Sponsor, in coordination with CONAGUA and SAGARPA, organized two working sessions with the DMISers to develop the activities necessary for modernizing the District. The first session was held on May 26 and 27 of 2009, in the town of Anahuac, Nuevo Leon. The second meeting was held in June 2009 in the same place. During the working session, the Sponsor and stakeholders discussed the objectives, background of the existing infrastructure, existing agricultural conditions and prepared outreach materials. Promotional videos were also developed to promote field visits among stakeholders. Project information is also posted on the web page of the State of Nuevo Leon.

BECC conducted a media search to identify public opinion about the Project. References to the Project were found on several internet sites. Most of the information found highlights the benefits of the Project.

- x Sexenio (September 26, 2012). "Reconstruyen zona de riego de Anáhuac," (They are reconstructing the Irrigation district in Anahuac, NL) Nuevo Leon State Government initiated the modernization of Don Martin Irrigation District. <http://www.sexenio.com.mx/nuevoLeon/articulo.php?id=10229>
- x El Regio (April 11, 2014). "Supervisan producción ganadera y agrícola en Anáhuac," (They are supervising livestock and agricultural production in Anahuac). State governor and the Secretary of Agriculture, Livestock, Rural Development, Fisheries and Nutrition supervised activities for modernizing Don Martin Irrigation District. <http://elregio.com/local/90757-supervisan-produccion-C3%B3-ganaderay-agr-C3%AD-cola-n-an-C3%A1-huac.html>
- x Inforural (March 25, 2013). "Revisan avances en Programa de Modernización del Distrito de Riego 004 Don Martín," (Progress on the modernization of Don Martin Irrigation District 004 reviewed). The General Director of the Nuevo Leon agricultural development agency CDANL, and the Deputy Manager of Irrigation Districts for CONAGUA reviewed progress on the modernization of the Don Martin Irrigation District. <http://www.inforural.com.mx/revisan-avances-en-programa-de-modernizacion-del-distrito-de-riego-004-don-martin/>

As reflected in the articles above and in compliance with BECC certification requirements, Project information has been made available to the general public, and the Sponsor and organizations involved have participated in the development of strategies related to the scope and implementation of the Project. The Project Sponsor has demonstrated a willingness to address comments and continues to work to satisfy information requirements.