



# CERTIFICATION AND FINANCING PROPOSAL

## STREET PAVING AND REHABILITATION PROJECT SAN LUIS RIO COLORADO, SONORA

*Revised: August 2, 2013*

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## EXECUTIVE SUMMARY

### STREET PAVING AND REHABILITATION PROJECT SAN LUIS RIO COLORADO, SONORA

**Project:** The

<b>Grace Period:</b>	Up to twenty-four (24) months on principal payments, computed as of the first disbursement.
<b>Interest Rate:</b>	A fixed or variable market-rate loan in Mexican pesos.
<b>Repayment Sources:</b>	Federal tax revenues (" <i>participaciones</i> ") pledged into an irrevocable trust.
<b>Debt Service Coverage Ratio (DSCR):</b>	A DSCR equal to or greater than 1.0 for each fiscal year must be maintained in the trust.

# CERTIFICATION AND FINANCING PROPOSAL

## STREET PAVING AND REHABILITATION PROJECT SAN LUIS RIO COLORADO, SONORA

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### 1. ELIGIBILITY

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#### **Project Type**

The Project falls within the eligible sector of air quality.

#### **Project Location**

The Project is located in the city of San Luis Rio Colorado (SLRC), Sonora, immediately adjacent to the U.S.-Mexico border, and directly south of the city of San Luis, Arizona.

#### **Project Sponsor and Legal Authority**

The **public-sector** Project sponsor is the Municipality of San Luis Rio Colorado, Sonora (the "Municipality" or "Sponsor"), a public entity legally constituted under the Mexican Constitution, the Constitution of the State of Sonora and the Municipal Code of San Luis Rio Colorado. The Project Sponsor has been granted authorization by the Sonora State Congress to contract a loan for this Project under its Municipal Revenue Law for fiscal year 2013, issued in the official gazette of the State of Sonora on December 31, 2012.

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### 2. CERTIFICATION CRITERIA

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#### 2.1 TECHNICAL CRITERIA

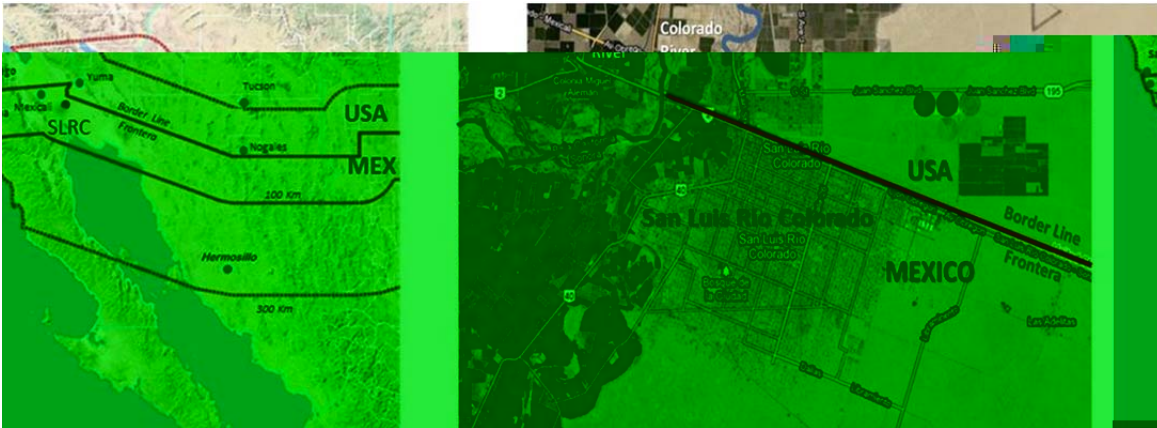
##### 2.1.1. Project Description

#### **Geographic Location**

San Luis Rio Colorado is located in the northwest corner of the state of Sonora where three states converge: Arizona, Baja California and Sonora. The city shares a border with San Luis, AZ and is 23 miles southwest of Yuma, AZ and 42 miles east of Mexicali, Baja California.

Figure 1 shows the geographical location of the City.

**Figure 1**  
**PROJECT VICINITY MAP**



**General Community Profile**

According to the 2010 Mexican census, the municipality of SLRC has a population of 178,380 residents, which represents 6.7% of the state's population. By population, SLRC is the 4<sup>th</sup> largest municipality in the State, just behind Hermosillo, Obregon and Nogales.<sup>3</sup> Between 2000 and 2010, San Luis Rio Colorado experienced an average annual growth rate of 2.78%.<sup>4</sup>

According to the latest economic census, manufacturing constitutes the most important sector in San Luis Rio Colorado, generating 46.3% of the municipality's gross domestic product (GDP) and employing 23.6% of its working population. Commerce represents the second largest sector, generating 24.8% of the municipality's GDP and employing 33.6% of its work force. Temporary lodging, food and beverage services represent 6.7% of its economy and contribute with 9.1% of total employment. Overall, San Luis Rio Colorado's economy constitutes 2.2% of the state's GDP.<sup>5</sup>

The status of public services in San Luis Rio Colorado is described in the following table.

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<sup>3</sup> Source: Mexican national statistics institute, *Instituto Nacional de Estadística, Geografía e Informática* (INEGI), 2010 general population and housing census.

<sup>4</sup> Source: Mexican Population Council, *Consejo Nacional de Población* (CONAPO).

<sup>5</sup> Source: INEGI, 2009 economic census.

**Table 1**  
**BASIC PUBLIC SERVICES AND INFRASTRUCTURE IN SAN SAN SERVICIOS**

for the municipality, with a focus on improving connectivity throughout the community by completing new roads and providing new transportation route options.

**Project Scope and Design**

The Project consists of first-time road paving and rehabilitation of existing roadways, and includes the following components:

- 235,200 m<sup>2</sup> (2.53 million ft<sup>2</sup>) or approximately 17.1 km (10.6 miles) of new paving;
- 124,800 m<sup>2</sup> (1.34 million ft<sup>2</sup>) or approximately 7.6 km (4.7 miles) of paving rehabilitation in the downtown area; and
- Construction of two bridges to complete new road infrastructure across irrigation canals.

The streets targeted for new paving have existing water and wastewater infrastructure, except in the case of Oaxaca Avenue and Tlaxcala Avenue, where this basic service infrastructure will be installed by the local water utility (OOMAPAS) in coordination with the paving activities. The Project will include the purchase of the water and wastewater infrastructure materials necessary to provide these service connections and/or make repairs during construction. Additionally, storm water infrastructure improvements needed in the downtown area of SLRC will be developed by OOMAPAS prior to carrying out paving works. On May 31, 2013, OOMAPAS made a formal commitment to complete the installation of the necessary water and storm water infrastructure improvements in the Project area.<sup>6</sup>

Table 2 provides the streets that are expected to be addressed by the Project.

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<sup>6</sup> Source: OOMAPAS, Letter No. 408./DOOAS/2013, dated May 31, 2013, signed by the General Manager.



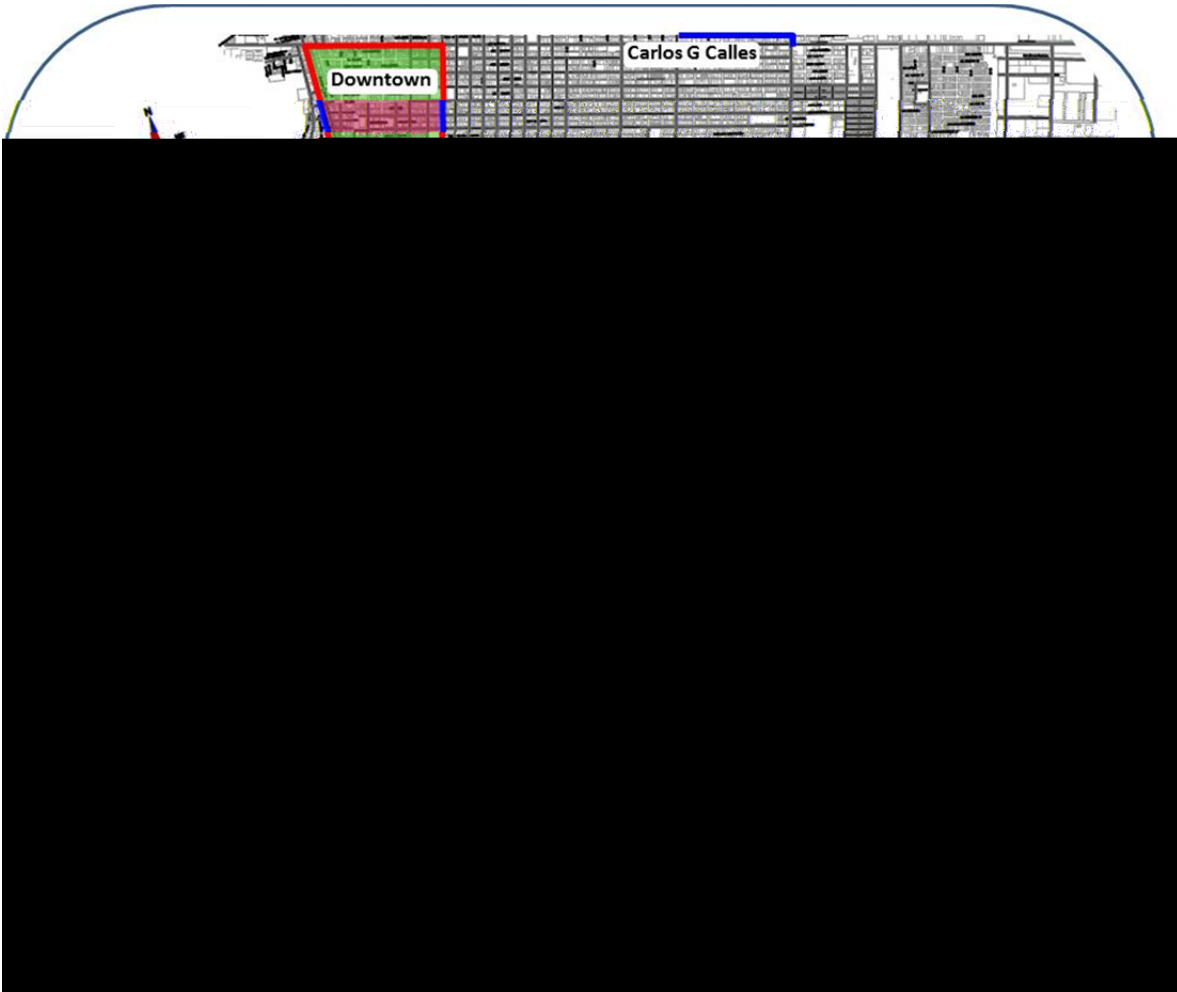
**Table 2**  
**PROJECT COMPONENTS**

<b>STREETS</b>	<b>Est. Length (km)</b>	<b>Est. Length (miles)</b>
<b>New Paved Roadways</b>		
34 <sup>th</sup> Street	1.93	1.20
Benjamin Flores	1.19	0.74
Jalisco Avenue	2.08	1.29
Oaxaca Avenue	2.93	1.82
Tlaxcala Avenue	2.44	1.52
26 <sup>th</sup> Street*	1.75	1.09
Carlos G. Calles*	2.33	1.45
Jazmin Avenue*	2.44	1.52
<b>Paving Rehabilitation</b>		
Downtown area (streets between Internacional Ave. and Kino Ave. and between Morelos and 7 <sup>th</sup> Street)	7.59	4.72
<b>BRIDGES</b>		
Bridge 1 on Jalisco Ave. over the 48 <sup>th</sup> Street canal		
Bridge 2 on Benjamin Flores over the Argentina Ave. canal		

\* Project complements under construction that are being funded by the Project Sponsor.

Figure 2 shows the general location of the Project components throughout the city of San Luis Rio Colorado, supporting a benefit to the entire population of the city.

**Figure 2**  
**LOCATION OF PROJECT**



The Municipality has made continuous investments to address paving deficiencies throughout the city supported by multiple funding sources, including the federal, state, and local governments. With planned paving investments for 2013, the Municipality expects to cover a total surface area of almost 775,000 m<sup>2</sup> (8.33 million ft.<sup>2</sup>), of which approximately 360,000 m<sup>2</sup> (3.87 million ft.<sup>2</sup>) are included in the proposed Project for certification and NADB financing. Based on this information and excluding the rehabilitation component, Project implementation is expected to increase paving coverage by just over 1%; however, the total 2013 paving efforts will increase paving coverage by just over 3%.

The proposed Project will address unpaved areas, along with the rehabilitation of roads in the downtown area that have deteriorated due to heavy traffic and age. The Project will also help improve urban mobility for residents by increasing paving coverage of primary roadways within the urban area, as well as roadway connectivity throughout the city. In particular, neighborhoods on the southeast side of the city will enjoy better traffic flows, while the interconnection of several main thoroughfares will provide easier access to the University and

other education centers, and agricultural products from the San Luis Valley (southwest of the city) will have direct routes to the downtown area, the university (on the east side), and to the commercial port-of-entry (on the northeast side). Other direct benefits for the community include facilitating easier and more rapid access for emergency, security and other public service personnel; fostering economic development; and increasing the value of properties located adjacent to the newly paved streets.

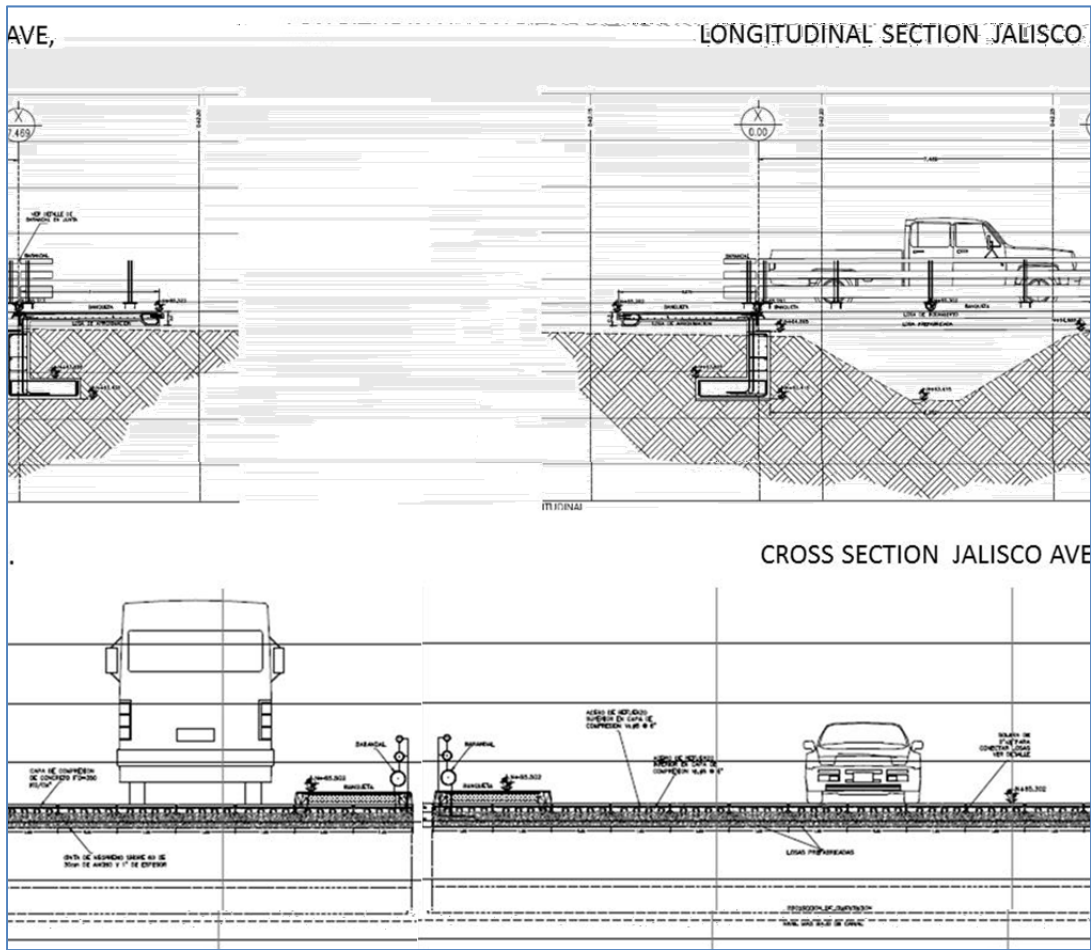
Table 3 presents the key development tasks related to the implementation of paving activities. The tasks currently listed as "in process" are expected to be completed by the end of 2013.



as with the design specifications of the American Association of State Highway and Transportation Officials (AASHTO).<sup>7</sup>

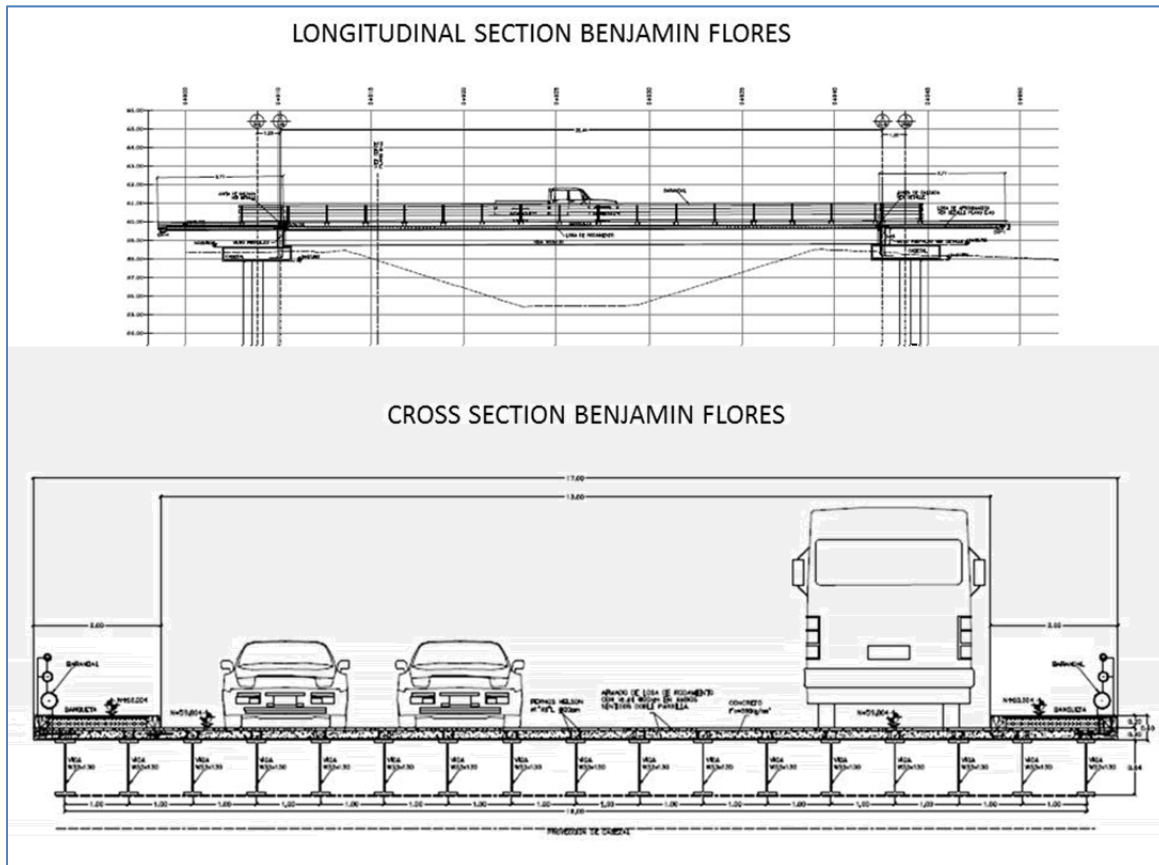
The designs for the two bridges are illustrated in the following figures.

**Figure 4**  
**DRAWING DETAILS FOR JALISCO BRIDGE**



<sup>7</sup> Source: SCT Standard No. N-PRY-CAR-06-01-005/01.

**Figure 5**  
**DRAWING DETAILS FOR BENJAMIN FLORES BRIDGE**



Technical documents reviewed in the evaluation of the Project scope, design and selected technology include, but are not limited to, the following:

- Final design and calculations for the streets to be paved, prepared by the engineering firm OI&A;
- Final designs and calculations for the bridges to be built prepared by the engineering firm, OI&A; y
- Soil mechanics and pavement studies of the streets to be paved, prepared by the company, *Estudios Profesionales de Geotecnia y Concretos* (EPGC).

### **2.1.3. Land Acquisition and Right-of-way Requirements**

The proposed Project is being developed within SLRC's urban area and primarily within existing rights-of-way. The Project Sponsor has indicated that property ownership and appropriate access to rights-of-way for all works within the city have been secured, except for a segment of approximately 130 meters (420 ft.) on Tlaxcala Avenue between 29th Street and 30th Street. This segment is owned by a private entity (Club Campestre) and is needed to complete the

Tlaxcala Avenue in the western part of the city. The Sponsor is currently negotiating the donation of this land with the property owners and will complete this task prior to authorizing construction of this segment. Even though implementation of this segment of the Project is contingent upon securing the land, it will not delay nor jeopardize implementation of the overall Project.

As previously described, the Project also includes two bridges that will cross over irrigation channels within the urban area. The corresponding construction permits have been requested as required from the local office of the Mexican National Water Commission (CONAGUA).<sup>8</sup> Similar permits have been issued for other crossings already constructed in the urban area; therefore, the Project Sponsor anticipates that the permits will also be obtainable for these new crossing activities. As with other projects, securing these permits will be a condition precedent in the loan agreement for disbursements related to these specific works.

#### **2.1.4. Management and Operations**

During Project implementation, the Municipality of San Luis Rio Colorado will oversee the execution of the proposed construction activities through its Department of Public Works and Municipal Utilities, *Dirección de Obras y Servicios Públicos Municipales* (DOSPM), in coordination with the Department of Property Records, Urban Development and Environment, *Dirección de Catastro, Desarrollo Urbano y Ecología* (DCDUE). According to Article 32 of the Internal Code of Municipal Public Administration,<sup>9</sup> the Municipality, through the DOSPM, is responsible for maintaining the roadways within the city limits. The Municipality has an ongoing paving maintenance schedule in place, divided into short-, medium- and long-term actions. The plan is described in the Urban Development Plan. The DOSPM will be responsible for implementing preventive and corrective maintenance of the roads included in the Project and for absorbing the related costs in its annual operation and maintenance budget.

The DOSPM organizational chart includes a director who oversees three offices: Public Works, Public Services and Administration. The Public Works office has an area dedicated to paving and rehabilitation that will be directly involved in operations and maintenance activities. The DOSPM will be responsible for quality control and assurance related to the implementation of the works included in the Project and may be assisted by external supervision.

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<sup>8</sup> Applications for construction permits were submitted to CONAGUA on June 5, 2013, under CONAGUA file number BCA-O-007-05-06-13-S.

<sup>9</sup> These internal regulations are public policy to be followed by authorities, officers, employees and public servants of the city administration and residents. Their purpose is to define the structure and regulate the internal functions of the municipal administration presided over by the City Council of San Luis Rio Colorado, Sonora.

## 2.2. ENVIRONMENTAL CRITERIA

### 2.2.1. Compliance with Applicable Environmental Laws and Regulations

#### ***Applicable Laws and Regulations***

Most of the Project components will be implemented within the jurisdiction of the Municipality of San Luis Rio Colorado in areas that have been previously impacted and are not part of protected natural areas or regions considered a priority due to biodiversity. Based on these characteristics and in accordance with Article 32 of the Internal Code for Municipal Public Administration, streets, bridges and primary accesses must be constructed by DOSPM, in coordination with DCDUE, the entity responsible for issuing environmental authorizations for the Municipality.

In the case of the bridge components, the construction will be across water infrastructure under federal jurisdiction. Therefore, letters have been submitted to the Sonora offices of the Mexican Ministry of Environment and Natural Resources (SEMARNAT) to determine if any specific environmental studies or authorizations will be required.

The Project will support compliance with the following environmental laws and regulations related to paving works and air quality:

- Urban Development Plan for San Luis Rio Colorado, Regulations Section, Urban Development Standards, Pavements (paragraphs 20-27), which establishes the requirements for paving works in SLRC.
- Official Mexican Standard NOM-025-SSA1-1993, which establishes the criteria for evaluating ambient air quality and the permissible level for concentrations of total suspended particles (TSP), including particles below 10 microns (PM<sub>10</sub>), with a permissible limit of 150 µg/m<sup>3</sup> in a 24-hour period, once a year.

#### ***Environmental Studies and Compliance Activities***

The Sponsor has consulted with the applicable environmental agency regarding the type of environmental authorization required for each Project component. The DCDUE has issued all necessary environmental authorizations and consent for the implementation of the works through Official letters No. 792/DCDUE/2013, No. 793/DCDUE/2013 and No. 793/DCDUE/2013 dated June 18, 2013.

On May 29, 2013, the Sponsor sent a letter to the Sonora office of SEMARNAT, to confirm that no other environmental clearances are required for the construction of the bridges.<sup>10</sup> SEMARNAT issued a response on July 16, 2013, indicating that no federal environmental clearances are required for the construction of the bridges.

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<sup>10</sup> Letters to SEMARNAT were submitted on May 29, 2013, with reference numbers 357/DOSPMM/2012 and 358/DOSPMM/2012, respectively.



**Pending Environmental Tasks and Authorizations**

No pending authorization or clearances are required.

**Compliance Documentation**

The following formal environmental authorizations have been obtained for the Project:

- Letter No. 792/DCDUE/2013 for new paving works.
- Letter No. 793/DCDUE/2013 for rehabilitation of paving works.
- Letter No. 794/DCDUE/2013 for the construction of the bridges.
- Letter No. DSSGUGAIA0584-13 from SEMARNAT, indicating no federal environmental clearance is required for the Jalisco Bridge.
- Letter No. DSSGUGAIA0585-13 from SEMARNAT, indicating no federal environmental clearance is required for the Benjamin Flores Bridge.

**2.2.2. Environmental Effects/Impacts**

San Luis Rio Colorado has experienced rapid urban growth and development. As a trade corridor for North America, it is critical to maintain infrastructure

reduce PM<sub>10</sub> emissions by an estimated 99.7% in the direct Project area, which equates to 185.6 metric tons/year. The construction of new bridges, interconnecting roads and repaving, is also expected to improve traffic flows, which may help reduce vehicular gas emissions.

#### Mitigation of Risks

During Project implementation, measures are being taken to mitigate the temporary effects of construction by following the preventive actions recommended by the state and federal environmental authorities, such as:

##### Noise

- All operating vehicles must close their exhaust and operate at low speed around the work areas.
- All vehicles must comply with Mexican standard NOM-080-ECOL-1994, which establishes the maximum permissible levels of noise from motor vehicles, motorcycles, and three-wheel motor vehicles, as well as noise measuring methods.

##### Site preparation and construction

- Dust emissions generated by vehicle traffic will be minimized by irrigating the areas where work will be performed.
- With regard to air emissions caused by motor vehicles, all vehicles used in the Project must have emission control systems.
- Wastewater collected in portable containers will be disposed of by an authorized company.
- The use of water should be optimized during construction of the Project. The water required during the construction phase should be obtained from a water tap provided by OOMAPAS or from an alternative source authorized by CONAGUA.
- Excavations will only be performed in areas previously identified by the Project.
- In-fill activities will be performed, preferably, with the material from the excavations whenever appropriate.

##### Waste management

- All non-recyclable solid wastes must be disposed of according to applicable procedures and in facilities designated by the authorities for this purpose.
- Backfill and compacting materials should be free of hazardous and non-hazardous waste, ensuring that such materials are moved to authorized confinement or treatment sites.
- In order to avoid ground contamination generated by vehicle, machinery and equipment maintenance and oil changes, these activities will be carried out in authorized service shops.

Natural Resource Conservation

The Project does not interfere in any way with the conservation of natural resources in the region. All Project components will be carried out in a predisturbed urban area and within existing roads.

No Action Alternative

The no action alternative was dismissed because of the ongoing need for basic services and the deterioration of roadways, which poses risks to local air and water resources, as well as to public health. The Project is necessary to meet the existing and future urban development needs of San Luis Rio Colorado. Affordable project financing is important to support the implementation and ongoing investment in adequate basic infrastructure, such as paving. Without access to affordable financing, the needed works and future investments by the Municipality may be delayed or postponed.

**Existing Conditions and Project Impact – Health**

Although human health statistics for Sonora are limited, Sonora Health Services for Health Jurisdiction Number II and the SLRC Local Health Services have annual incidence rates for acute respiratory diseases in San Luis Rio Colorado over a five-year period based on a total population of 178,380 (see Table 4 below).

**Table 4  
 INCIDENCE RATES OF RESPIRATORY DISEASES IN  
 SAN LUIS RIO COLORADO, SONORA**

	2009	2010	2011	2012	2013*
<b>Total No. of Cases</b>	17,298	15,697	14,399	14,482	4,883
<b>Incidence Rate</b>	105.25	94.75	86.25	86.15	28.85

\* Information as of May 11, 2013.

Mexican Standard NOM-020-SSA1-1993 establishes that health risks associated with air pollutants are correlated to the time elapsed between exposure and the onset of adverse effects in exposed individuals and cause changes in pulmonary function that render affected individuals more susceptible to respiratory diseases and infections. Furthermore, with respect to epidemiological surveillance, in Mexican Standard NOM-017-SSA2-1994, potential health impacts from environmental pollution are defined as poisonings and disorders resulting from contact with or handling of toxic substances and environmental factors.

**Transboundary Effects**

The Project is expected to have a positive transboundary impact by improving air quality in the shared airshed of San

In addition to these benefits, this Project will also improve urban mobility, not only for local traffic, but also for cross-border traffic that flows through the city to the international crossings, thereby further reducing environmental pollution from vehicle exhausts while improving the quality of life for people on both sides of the border. Finally, the new paving works are not expected to result in increased storm water runoff along the international border.

**Other Local Project Benefits**

Additional direct benefits to the local community include facilitating access to emergency, security and other public services; reducing travel times; and fostering economic development.

**2.3. FINANCIAL CRITERIA**

The Project Sponsor has requested a loan for up to \$112.5 million pesos from NADB to complete the financing of the Project, which is estimated to cost a total of \$179.1 million pesos. The loan will be used to pay for construction and related costs, such as designs, construction, supervision and management when necessary. The NADB loan will complement federal, state of Sonora and other municipal funds.

The Project's proposed payment mechanism is consistent with financial structures for loans to Mexican municipalities with federal revenues (Participaciones Federales) as the source of payment. The source of repayment will be the Participaciones Federales received by the Municipality of San Luis Rio Colorado, which shall be irrevocably pledged and deposited into a trust to pay for the NADB loan's debt service in accordance with the applicable laws.

NADB performed a financial analysis of the Municipality of San Luis Rio Colorado. The cash flow projections indicate that San Luis Rio Colorado has the capacity to meet all its financial obligations, including those related to this loan, without adversely affecting the operation and maintenance of the Municipality. In line with these conclusions, Fitch Ratings and Moody's have rated San Luis Rio Colorado BBB (mex) and A2mx, respectively. These ratings had already considered the impact of the requested loan amount.

In addition, NADB has verified that San Luis Rio Colorado has the legal authorization to contract this loan and to pledge its Participaciones Federales as the source of payment for its debt service. San Luis Rio Colorado has also the legal and financial capacity to operate and maintain the works constructed under this Project, either directly or through its water utility (OOMAPAS).

Considering the Project's characteristics and based on the financial and risk analyses performed by NADB, the proposed Project is considered to be financially feasible and presents an acceptable level of risk. Therefore, NADB proposes providing a market-rate loan of up to \$112.5 million pesos to the Municipality of San Luis Rio Colorado, Sonora for the construction of the Project described herein that will be repaid in a period of up to 240 months.

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### **3. PUBLIC ACCESS TO INFORMATION**

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#### **3.1. PUBLIC CONSULTATION**

BECC released the Draft Project Certification and Financing Proposal for a 30-day public comment period beginning July 3, 2013. The following Project documentation was made available for public access:

- DCDUE Authorization Letter No. 792/DCDUE/2013 dated June 18, 2013, for new paving works.
- DCDUE Authorization Letter No. 793/DCDUE/2013 dated June 18, 2013, for rehabilitation of paving works.
- DCDUE Authorization Letter No. 794/DCDUE/2013 dated June 18, 2013, for the construction of the bridges
- Municipality Urban Development Program (UDP)
- Paving Needs Assessment by Satellite Imaging for San Luis Rio Colorado, Sonora, developed by BECC
- OOMAPAS Letter No. 408./DOOAS/2013 dated

describing current paving activities related to the Project, but not part of the proposed works, and seven comments from residents were posted in response.<sup>11</sup>

Additionally, BECC conducted a media search to identify public opinion regarding the Project. References were found in several articles on Internet sites, including online newspapers such as *Sonora presente*, *Expreso más personal*, and *Diario en tu ciudad*. No opposition to the Project was detected in the media search. Examples of these articles can be found at the following links:

- *Sonora presente* (June 14, 2013).- State Governor announces investment of more than 60 million pesos to pave San Luis Rio Colorado  
(<http://sonorapresente.com/2013/06/anuncia-padres-inversion-de-mas-de-60-mdp-para-pavimentar-san-luis-rio-colorado/>)
- *Expreso más personal* (June 13, 2013).- More than 60 million pesos to be invested in paving SLRC.  
([http://www.expreso.com.mx/index.php?option=com\\_content&view=article&id=62369:anuncia-padres-inversion-de-mas-de-60-mdp-para-pavimentar-slr&catid=943:nogales&Itemid=163](http://www.expreso.com.mx/index.php?option=com_content&view=article&id=62369:anuncia-padres-inversion-de-mas-de-60-mdp-para-pavimentar-slr&catid=943:nogales&Itemid=163))
- *Diario en tu ciudad*. (February 18, 2013) San Luis Rio Colorado requests loan from NADB for paving (<http://www.sinbaches.com/recurre-san-luis-rio-colorado-a-credito-para-pavimentacion/>)

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[https://www.facebook.com/photo.php?fbid=504028213002774&set=a.175162625889336.43674.165126250226307&type=1&comment\\_id=1378234&offset=0&total\\_comments=7](https://www.facebook.com/photo.php?fbid=504028213002774&set=a.175162625889336.43674.165126250226307&type=1&comment_id=1378234&offset=0&total_comments=7)