

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

## **PARAGUAY**

### **UPGRADE AND MAINTENANCE PROJECT FOR NATIONAL ROUTE 9 AND ACCESS ROADS**

**(PR-L1145)**

#### **LOAN PROPOSAL**

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## ABBREVIATIONS

AADT	Annual average daily traffic
BCP	Banco Central del Paraguay [Central Bank of Paraguay]
CAF	Andean Development Corporation
CREMA	Contratos de rehabilitación y mantenimiento [rehabilitation and maintenance contract]
ECLAC	Economic Commission for Latin America and the Caribbean
EIRR	Economic internal rate of return
ESMP	Environmental and social management plan
ESMR	Environmental and social management report
ETAG	Especificaciones Técnicas Ambientales Generales [General Environmental Technical Specifications]
GMANS	Gestión de mantenimiento por niveles de servicio [service level maintenance management]
IMF	International Monetary Fund
IRI	International roughness index
MOPC	Ministry of Public Works and Communications
NR9	National Route 9
OC	Ordinary Capital
PEU	Project execution unit
PEU-MOPC	Unidad Ejecutora de Proyectos del MOPC [MOPC Project Execution Unit]
PNSV	Plan Nacional de Seguridad Vial 2013-2018 [National Road Safety Plan 2013-2018]
SENACSA	Secretaría Nacional de Calidad y Salud Animal [National Department of Animal Quality and Health]
VPS/ESG	Environmental Safeguards Unit of the Vice Presidency for Sectors and Knowledge
WEF	World Economic Forum

## PROJECT SUMMARY

### PARAGUAY UPGRADE AND MAINTENANCE PROJECT FOR NATIONAL ROUTE 9 AND ACCESS ROADS (PR-L1145)

Financial Terms and Conditions				
<b>Borrower:</b> Republic of Paraguay  <b>Executing agency:</b> Republic of Paraguay, acting through the Ministry of Public Works and Communications (MOPC)			Flexible Financing Facility <sup>(a)</sup>	
			<b>Amortization period:</b>	24 years
			<b>Original WAL:</b>	15.25 years
			<b>Disbursement period:</b>	7 years
			<b>Grace period:</b> <sup>(c)</sup>	7.5 years <sup>(b)</sup>
<b>Source</b>	<b>Amount (US\$)</b>	<b>%</b>	<b>Credit fee:</b>	<sup>(d)</sup>
<b>IDB (Ordinary Capital):</b>	US\$160 million	28.5%	<b>Inspection and supervision fee:</b>	<sup>(d)</sup>
<b>Local counterpart:</b> <sup>(a)</sup>	US\$400 million	71.5%	<b>Interest rate:</b>	LIBOR-based
<b>Total:</b>	<b>US\$560 million</b>	<b>100%</b>	<b>Currency of approval:</b>	U.S. dollars
Project at a Glance				
<b>Project objective/description:</b> To contribute to improved productivity and competitiveness of the agriculture sector and to the economic and social integration of Paraguay, particularly the Chaco region. The specific objective is to contribute to the maintenance of serviceability, improvement, and service level of National Route 9 from Kilometer 50 (Cerrito) to Kilometer 525 (Mariscal Estigarribia), as well as the access roads to the towns of Loma Plata, Neuland, and Filadelfia by upgrading and subsequently maintaining them, which will result in lower transportation operating costs and shorter average travel times.				
<b>Special conditions precedent to the first disbursement of the loan proceeds:</b> Evidence of the following will be provided, to the Bank's satisfaction: (i) the signature and entry into force of a financing agreement between the Andean Development Corporation (CAF) and the Republic of Paraguay in the amount of US\$400 million for joint parallel cofinancing of the project; (ii) the entry into force of the project Operating Regulations, via adoption of the corresponding ministerial resolution, on terms previously approved by the Bank; (iii) assignment of the project to the MOPC Project Execution Unit (PEU-MOPC), via ministerial resolution (see paragraph 3.7); and (iv) informed consent of the indigenous families and traders to be resettled (identified in the first round of consultations), to the resettlement and compensation measures called for in the Resettlement Plan approved by the Bank (see paragraph 2.6).				
<b>Special execution conditions:</b> (i) Prior to the solicitation of works, if prior to the first disbursement of the loan proceeds, satisfaction of the requirements of point (iv) of the conditions precedent to the first disbursement (see paragraph 3.7); (ii) execution of the project in accordance with the contractual provisions on environmental, social, and health and safety issues specified in Annex B of the environmental and social monitoring report (ESMR) ( <a href="#">required electronic link 3</a> ).				
<b>Exceptions to Bank policies:</b> Temporary exemption from the time limit established in Operational Policy OP-710 (document GN-1979-3), paragraph (V)(6)), and from the consent requirement in paragraph (IV)(4) of said policy before the Bank approves the project, so that the executing agency may submit the updated Resettlement Plan, including the consent requirement in paragraph (IV)(4) of said policy, prior to the solicitation of works or the first disbursement of the loan proceeds, whichever occurs first (see paragraph 2.7).				
Strategic Alignment				
<b>Challenges:</b> <sup>(e)</sup>	SI <input type="checkbox"/>	PI <input checked="" type="checkbox"/>	EI <input checked="" type="checkbox"/>	
<b>Crosscutting themes:</b> <sup>(f)</sup>	GD <input type="checkbox"/>	CC <input checked="" type="checkbox"/>	IC <input type="checkbox"/>	

<sup>(a)</sup> Under the terms of the Flexible Financing Facility (document FN-655-1), the borrower has the option of requesting changes in the amortization schedule as well as currency and interest rate conversions. The Bank will take operational and risk management considerations into account when reviewing such requests.

<sup>(b)</sup> Under the flexible repayment options of the Flexible Financing Facility, changes to the grace period are permitted provided that they do not entail any extension of the original weighted average life of the loan or the last payment date as documented in the loan contract.

<sup>(c)</sup> The Government of Paraguay is negotiating with the Andean Development Corporation (CAF) to finance the local counterpart in the form of joint parallel cofinancing.

<sup>(d)</sup> The credit fee and inspection and supervision fee will be established periodically by the Board of Executive Directors as part of its review of the Bank's lending charges, in accordance with the applicable policies.

<sup>(e)</sup> SI (Social Inclusion and Equality); PI (Productivity and Innovation); and EI (Economic Integration).

<sup>(f)</sup> GD (Gender Equality and Diversity); CC (Climate Change and Environmental Sustainability); and IC (Institutional Capacity and Rule of Law).

## I. DESCRIPTION AND RESULTS MONITORING

### A. Background, problem addressed, rationale

- 1.1 **Territorial and socioeconomic framework.** Paraguay has been one of the fastest-growing economies in the region over the last decade. Between 2004 and 2016, real GDP expanded by an average of 4.7% per year, compared to an average growth rate of 3.2% observed in the rest of Latin America and the Caribbean.<sup>1</sup> Nonetheless, these results have been accompanied by significant volatility in GDP, which is highly dependent on weather conditions and on the economies of neighboring countries.<sup>2</sup> Paraguay has an open market-based economy dominated by crop and livestock farming, which represent around 25% of GDP.<sup>3</sup> Foreign trade has grown rapidly in the last decade, with total exports and imports representing nearly 77% of GDP.<sup>4</sup>
- 1.2 The country is geographically divided into two regions by the Paraguay River—the Eastern Region and the Western Region, or Chaco. The Western Region accounts for 61% of Paraguay's total land area of 406,752 square kilometers, but only 3% of its seven million inhabitants.<sup>5</sup> The total poverty rate in the Western Region is 22.6%, with over 55% of this population living in extreme poverty.<sup>6</sup>
- 1.3 **Road infrastructure.** Paraguay has a road network of approximately 74,646 km, 4.6% of which are national routes, 18.3% are departmental roads, and 77.1% are rural access roads.<sup>7</sup> The road network has 7,444 km of paved roads, 38% of which are in fair condition, and 20% in poor condition.<sup>8</sup> The Chaco region has an estimated road network of 6,272.89 km,<sup>9</sup> equivalent to a road density of (0.025 km/km<sup>2</sup>), well below the Eastern Region average of 0.43 km/km<sup>2</sup>,<sup>10</sup> which illustrates the marked difference between the two regions in terms of access to infrastructure.
- 1.4 **Strategic role of road infrastructure.** As Paraguay is a landlocked country, foreign trade freight travels an average of 1,350 km to and from sea ports, such that the costs of road transportation and the logistics chain significantly impact the country's productive and export activity. Paraguay is one of the Latin American and Caribbean countries with the highest costs associated with the movement of goods within the

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<sup>1</sup> Source: Staff calculations based on data from the Central Bank of Paraguay (BCP) and the International Monetary Fund (IMF).

<sup>2</sup> Severe droughts in 2009 and 2012 caused two years of economic recession when GDP shrank by 4% and 1.2%, respectively.

<sup>3</sup> Source: BCP, 2017.

<sup>4</sup> Source: BCP, 2016.

<sup>5</sup> Source: Ongoing Household Survey (EPH), General Directorate of Statistics, Surveys, and Censuses (DGEEC), 2016.

<sup>6</sup> Source: EPH, 2015.

<sup>7</sup> These correspond to the April 2017 road inventory. Source: Ministry of Public Works and Communications (MOPC).

<sup>8</sup> General status of the country's paved roads, based on results of the International Roughness Index (IRI) (2013-2014). The thresholds adopted are: IRI < 2.5 Good; 2.5 < IRI < 4 Fair; IRI > 4 Poor. Source: MOPC ([optional electronic link 8](#)).

<sup>9</sup> Of these, 1,015 km are paved.

<sup>10</sup> MOPC, 2017.

region.<sup>11</sup> This is particularly relevant in a country without direct access to the sea, which relies heavily on road and river transportation, and on transshipment operations in neighboring countries.<sup>12</sup> Around 87% of freight is carried by road transport, and over 80% of agricultural exports are shipped overland to the river ports located on the Paraná and Paraguay rivers. The national logistics cost in 2011, including foreign trade insurance and freight costs, was estimated at US\$2.9 billion (11.52% of that year's GDP), 50.3% of which corresponded to the operational cost of road transportation.<sup>13</sup> This, in turn, is directly influenced by the broader costs of transportation, such as travel times and vehicle operating costs. Accordingly, improving the conditions of the Primary Road Network and optimizing the maintenance of its infrastructure are essential for reducing transportation costs, enabling stronger internal communication and territorial integration, facilitating the movement of freight and people between production and consumption areas, and enhancing the country's international competitiveness.

- 1.5 **Insufficient investment and deterioration of road infrastructure.** A historical lack of funding has meant that investment in transportation infrastructure has been insufficient to meet the country's needs.<sup>14</sup> The Global Competitiveness Report 2016-2017<sup>15</sup> ranks Paraguay 122th out of 138 countries in infrastructure quality, placing it last among Latin America and Caribbean countries (21st out of 21). In terms of road quality in particular, it ranks 136th out of 139. Paraguay invests an average of 2.5%<sup>16</sup> of its GDP per year in infrastructure, well below the over-5% needed to catch up with middle- and high-income economies.<sup>17</sup>
- 1.6 **Crop and livestock farming.** Paraguay's economy continues to revolve around the primary sector. Roughly 77% of foreign exchange inflows (excluding income from electric energy exports)<sup>18</sup> are generated from agricultural products and their derivatives.<sup>19</sup> The most important crop is soybean, and the leading product in the livestock sector is beef. Annual soybean production is around 10 million tons, having expanded at an average rate of 6%, to almost double output in the last ten years, making the country the world's seventh largest producer and fourth largest exporter of this crop. Beef production has also increased considerably, putting the country among the seven largest exporters of this product worldwide, with export volume

<sup>11</sup> [Better Neighbors: Towards a Renewal of Economic Integration in Latin America](#). World Bank, 2017. The cost of exporting from Paraguay, at US\$1,850 per container, is higher than in other countries of the region: Argentina US\$1,770; Bolivia US\$1,440; Uruguay US\$1,125. It is also above the Latin American and Caribbean average of US\$1,287 per container. Source: World Bank, [tradingeconomics.com](http://tradingeconomics.com).

<sup>12</sup> The lack of direct access to the sea is a commercial disadvantage. According to [Arvis et al. \(2010\)](#), landlocked countries: (i) sell 30% less than countries with coastlines; (ii) have higher import costs and lower export earnings; and (iii) grow by 1.5% less on average than countries with access to the sea.

<sup>13</sup> Source: National Logistics Plan (NLP), Costo Logístico [Logistic Costs], 2013.

<sup>14</sup> According to the MOPC Road Investment Plan 2013-2018, suboptimal investment in conservation is reflected in the fact that about 58% of the paved roads are in fair or poor condition (see paragraph 1.3). Source: Master Plan of Infrastructure and Transportation Service of Paraguay, 2013.

<sup>15</sup> Source: World Economic Forum, 2016.

<sup>16</sup> Average for 2004-2016. Source: World Economic Forum (WEF), 2017.

<sup>17</sup> [Financiamiento de la infraestructura en ALC: ¿Cómo, Cuánto y Quién?](#) [Financing Infrastructure in Latin America and the Caribbean: How, How much and by Whom?]. Serebrisky et al. IDB, 2015.

<sup>18</sup> Source: [Reporte de Comercio Exterior](#) [Foreign Trade Report], BCP, 2016.

<sup>19</sup> Source: [Plan Nacional de Desarrollo Paraguay 2030](#), [National Development Plan Paraguay 2030], 2014.

doubling between 2011 and 2014.<sup>20</sup> In 2016, a total of 240,000 tons of beef were exported for a value of US\$1.02 billion.<sup>21</sup>

- 1.7 In the Chaco region, livestock farming accounts for about 65% of land use, and the remaining 35% is used for crop farming ([optional electronic link 13](#)). The Chaco region has roughly 6 million head of beef cattle (40% of the country's total), and is the source of about 47% of all beef exported.<sup>22</sup> It also has 109,000 head of dairy cattle (over 55% of the national total), which produce 888 million liters of milk per year. Over 90% of dairy production in the Western Region is industrialized for export and to supply Paraguay's domestic consumption.<sup>23</sup>
- 1.8 Paraguay is endeavoring to promote industrialization processes in the agricultural sector and to increase diversification through: (i) support for productive clusters; (ii) scaling up of production; (iii) integration of agriculture and forestry operations; (iv) promotion of breeding and processing techniques; (v) rationalization of logistics distribution systems; and (vi) consumption growth. All of these activities depend on the accessibility, coverage, and quality of the road network (serviceability and level of service).
- 1.9 In 2013, Paraguay was 16th in the ranking of 180 countries most exposed to the effects of climate change, with the seventh largest GDP impact (0.63%), according to the Climate Risk Index (2015). This is explained by its heavy dependence on a primary production system and the fact that its infrastructure, logistics capacity, and services sector are still under development. The Economic Commission for Latin America and the Caribbean (ECLAC)<sup>24</sup> predicts that Paraguay could lose up to 2% of its annual GDP by the end of the century, because of the economic effects of climate change.
- 1.10 **Road safety.** The country recognizes the high economic cost and social problems caused by traffic accidents, which have been increasing steadily to a level of 17.9 fatalities per 100,000 inhabitants, compared to an average of 17.2 per 100,000 in Latin America and the Caribbean as a whole. It is estimated that a patient in intensive care costs the government US\$1,200 per day and stays in hospital for an average of 16 days.<sup>25</sup> To address road safety issues, the Ministry of Public Works and Communications (MOPC) is leading implementation of the National Road Safety Plan 2013-2018 (PNSV)<sup>26</sup> in coordination with other ministries and entities.
- 1.11 The National Government, acting through the Ministry of Public Works and Communications (MOPC), is responsible for developing and implementing policies and rules on infrastructure and basic services for the country's integration and economic development. These responsibilities encompass all types of roads, so it has the chief responsibility for planning and managing their development and conservation. In that connection, and considering the shortcomings and limited

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<sup>20</sup> Source: [Paraguay: Livestock And Products Annual](#). United States Department of Agriculture, 2016.

<sup>21</sup> Source: National Department of Animal Quality and Health (SENACSA), 2016.

<sup>22</sup> SENACSA, 2016.

<sup>23</sup> Bolivia and Brazil are the main export destinations. Source: Paraguayan Dairy Industry Chamber, 2017.

<sup>24</sup> [La economía del cambio climático en el Paraguay](#) [The Economics of Climate Change in Paraguay], 2017.

<sup>25</sup> Source: Ministry of Public Health and Social Welfare, 2013.

<sup>26</sup> For further information on the PNSV, see [optional electronic link 12](#).



capacity of the centralized management of Paraguay's entire road network, the MOPC has prioritized work on 3,260 km, representing 43% of the entire paved network,<sup>27</sup> through contracts with the private sector, for rehabilitation and service-level maintenance.<sup>28</sup> The aim is to implement a strategy for improving efficiency and effectiveness in the management of the country's road assets, thus ensuring the sustainability of the investment.

- 1.12 National Route 9 (NR9), the “Carlos Antonio López” Highway, is 761 km long and serves as the main artery for the entire Western Region. It stretches from Asunción to the Bolivian border,<sup>29</sup> and is the main communication channel linking the Chaco region to Paraguay's administrative and economic center. It also connects the country with the Pacific coast through Bolivia, Argentina, and Chile, serving as a corridor for intraregional and global trade.<sup>30</sup> As such, it has been recognized by the Initiative for the Integration of South American Regional Infrastructure of the South American Infrastructure and Planning Council (IIRSA/COSIPLAN), as one of the projects of the regional integration portfolio (Project IOC72). Annual average daily traffic (AADT) in 2017 is roughly 1,500 vehicles, 50% of which are medium-sized and heavy trucks.<sup>31</sup> This road has a fixed weighbridge in each direction, one at Kilometer 26 and another at Kilometer 51, the main purpose of which is to prevent the rapid deterioration of the road,<sup>32</sup> given the heavy flow of freight along this highway, particularly the transportation of livestock,<sup>33</sup> dairy products, and liquefied petroleum gas from Bolivia.<sup>34</sup>

- 1.13 **Identification of the problem and main determinants.** Although the paved road network has grown by an average of 233 km per year (from 2,902 km in 1995 to

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<sup>27</sup> The rest of the paved road network (57%, 4,184 km) is administratively maintained through routine interventions by the Road Conservation Districts, except for a section of National Route 7 (144 km), which is managed under concession, and the segments of National Routes 2 and 7 which are covered by a public-private-partnership contract (149 km).

<sup>28</sup> These contracts include the capital investments and routine maintenance needed for conservation of the targeted segments. With this type of contract, quality thresholds are achieved in the rehabilitation and during the maintenance period. The Bank is financing the maintenance of 1,520 km of these segments through loans 2934/OC-PR, 2935/BL-PR, and 3837/OC-PR. A World Bank evaluation of the experience in [Brazil](#) and [Argentina](#), which objectively compares maintenance by levels of service with the traditional maintenance defined in terms of meters and unit prices, shows that a general improvement in efficiency was achieved in the sector. This resulted in better road conditions at lower cost for governments and a reduction in administrative burdens. For the case of Paraguay, see [optional electronic link 8](#).

<sup>29</sup> It also has a 22 km spur that connects with Clorinda, Argentina.

<sup>30</sup> Paraguay is also part of the Capricorn and Central Interoceanic Integration and Development Hub. See [optional electronic link 11](#).

<sup>31</sup> Counting posts in Cerrito and Benjamín Aceval. Source: MOPC, 2017.

<sup>32</sup> Excess axle weight of 50% relative to the design specifications causes five times more deterioration to the road surface. It also means an 80% reduction in durability in years. Source: [El Control De Las Cargas En Las Rutas Y De Las Dimensiones De Los Camiones](#) [Control of Loads on Roads and Truck Size]. National Academy of Engineering of Argentina, 2015.

<sup>33</sup> The three main Mennonite colonies produce packed meat for export in their respective cold stores. In the case of the Neuland and Fernheim (Filadelfia) colonies, their processing plants are located on the outskirts of Asunción, which means that production occurs in the central Chaco area and cattle are moved on foot along National Route 9. In the case of Chortitzer (Loma Plata), its refrigeration plant is located in the Central Chaco region, so the meat travels National Route 9 already processed, destined for export markets.

<sup>34</sup> The Paraguayan market was the main destination for liquefied petroleum gas exported by Bolivia in 2014-2016, representing 75% of that country's total exports. Source: Bolivian Institute of Foreign Trade, 2017.

7,454 km in 2017), still only 10% of the inventoried network is paved<sup>35</sup> and therefore suitable for permanent traffic. Low road density combined with the poor quality of the network and high levels of rainfall mean deficiencies in access to transportation services, both for the population and for productive activities. This highlights the importance of upgrading and maintaining the road network, and is crucial for Paraguay's further economic and social development, since its economy relies heavily on agricultural exports (see paragraph 1.6). Moreover, while National Route 9 is paved, segments of it are now reaching the end of their design life.<sup>36</sup> They are also vulnerable to climate change, lack an efficient maintenance scheme, and display suboptimal functional characteristics.<sup>37</sup> An estimated 45% of the project length requires surface reconstruction work. These conditions of deterioration add to the broader costs of transportation and lengthen travel times;<sup>38</sup> they also undermine road safety and make it hard for this highway to become a consolidated logistics integration corridor. This limits potential for productivity growth for development<sup>39</sup> and the well-being of the population, so rehabilitation and upgrading are necessary.

- 1.14 **Paraguay's road infrastructure is exposed to climate change risks.** The Chaco region will be highly vulnerable for the next three decades, when the average annual temperature is expected to rise by up to 1°C relative to 1961-1990, with less precipitation in summer and more in winter, thus increasing the structural vulnerability of the roads, affecting activities and communities that depend on the service provided by the road infrastructure, especially the population of the Chaco region, as this is the only direct connection with the administrative capital of the country. For this reason, the Chaco region needs differentiated public development policies.<sup>40</sup> A hydrological/hydraulic analysis was done of the existing National Route 9 infrastructure as part of the project ([optional electronic link 18](#)), to identify critical points and the hydraulic work countermeasures necessary to increase the resilience of the infrastructure to the effects of climate change.
- 1.15 Data provided by the Paraguayan highway patrol show that 146 road accidents were recorded on National Route 9, causing 48 injuries and five fatalities,<sup>41</sup> and representing 9% of all accidents occurring on Paraguay's main road network. Although there are no official data on the causes of the accidents, the presence of

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<sup>35</sup> The following types of road surface are considered paved: asphalt concrete, surface treatment, hydraulic concrete, block paving, and loose surface road. On this basis, 91% of national roads and 24% of departmental roads are paved.

<sup>36</sup> The segment between Kilometer 525 (Mariscal Estigarribia) and Kilometer 761 (Infante Rivarola), is currently being worked on under a CAF-funded program (CFA-8729).

<sup>37</sup> The condition of the road is such that rainfall and other precipitation causes specific interruptions to the road's year-round serviceability, thus restricting the movement of people and production (See [Informe Periodístico No. 1](#), [Informe Periodístico No. 2](#) [Newspaper Reports 1 and 2]). In periods without rain, the condition of the road generates high vehicle operating costs and long travel times.

<sup>38</sup> The deterioration is estimated to increase vehicle operating costs by up to 19%, depending on the type of vehicle, and to lengthen travel times relative to optimum traffic conditions by up to 76% (see Annex II).

<sup>39</sup> According to WEF (2017), inadequate infrastructure is the second greatest obstacle to doing business in Paraguay.

<sup>40</sup> Source: [Estudio de Vulnerabilidad d Impacto del Cambio Climático en El Gran Chaco Americano](#) [Study on the Climate Change Vulnerability and Impact in the Gran Chaco Americano], 2017.

<sup>41</sup> Source: Patrulla Caminera, 2016.

intermittent potholes,<sup>42</sup> which force abrupt avoidance maneuvers, seems to be one of the most recurrent causes in the case of National Route 9.

- 1.16 **Project rationale and proposed interventions.**<sup>43</sup> Considering the preponderance of road transportation in the conveyance of domestic and export freight in Paraguay (see paragraph 1.4), the improvement and timely maintenance<sup>44</sup> of the only main artery in the Western Region (60% of national territory)<sup>45</sup> will help reduce transportation costs for areas of high economic and productive potential.<sup>46</sup> It will also enable internal communication and territorial integration to be strengthened, making it easier to move freight and people between production and consumption areas, since the deterioration of the road means that even permanent traffic is restricted in rainfall periods. It will also complement the Bank's actions in support of the diversification and industrialization of agricultural products, contributing to Paraguay's international trade competitiveness and functional integration with other countries in the region and elsewhere in the world ([optional electronic link 11](#)). The highway segment identified for upgrading and conservation work is an essential logistics corridor that connects Western Region production areas to the country's export processing, manufacturing, and marketing centers, and to intermodal waterway terminals.
- 1.17 **The Bank's knowledge of the sector.** In recent decades, the Bank has been playing a key role in the development of Paraguay's transportation and logistics sector, with a view to improving agricultural competitiveness by reducing transportation costs for integration with neighboring countries and other foreign trade markets, given Paraguay's landlocked status. It seeks to prioritize investment in the road sector owing to the need to support and consolidate the growing volume of exports, since the low density of the country's paved main road network is now insufficient.<sup>47</sup> Over the past 20 years, the Bank has approved operations totaling US\$633 million in main road corridors, including the paving of 1,035 km of major

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<sup>42</sup> [Informe Periodístico No. 1](#), [Informe Periodístico No. 2](#), [Informe Periodístico No. 3](#), [Informe Periodístico No. 4](#) [Newspaper 1, 2, 3, and 4].

<sup>43</sup> "Expansão Rodoviária e Desenvolvimento Agrícola dos Cerrados" [Road Expansion and Agricultural Development of the Cerrados Region]" (Castro, N., 2002) studies the impact of transportation costs on agricultural production in the Center-West region of Brazil between 1970 and 1996, the period when this region emerged as an agricultural powerhouse thanks to the expansion of soybean cropping, coinciding with substantial improvements in its paved road network. The study finds this region to be highly and robustly sensitive to transportation costs, as reflected in a negative elasticity of between -0.4 and -0.9 (a 1% increase in transport costs reduces soybean production and trade by between 0.4% and 0.9%). This negative impact is even greater in the states of the region where agriculture accounts for a large share of GDP, and transportation routes are longer, as is the case of the Paraguay's Chaco region.

<sup>44</sup> [Una Evaluación de Impacto en Indonesia](#) [An Impact Evaluation in Indonesia] (Gertler et al., 2014) finds that a 1% increase in road roughness as measured by the IRI reduces per capita consumption by 0.26% and reduces income by 0.89%.

<sup>45</sup> The length of the segment to be targeted represents more than 7.5% of the country's paved roads.

<sup>46</sup> The excess logistic costs of products that are representative of Paraguay's foreign trade exceed 2% of GDP. [Impact of Transportation and Logistics on Paraguay's International Trade](#). United States Agency for International Development (USAID), 2006.

<sup>47</sup> Paraguay: 0.0175 km/km<sup>2</sup>; Argentina: 0.0284 km/km<sup>2</sup>; Brazil: 0.0250 km/km<sup>2</sup>; and Uruguay: 0.0447 km/km<sup>2</sup>. Source: ECLAC, 2015.

highways; and it has supported the development of a planned service-level maintenance management (GMANS) system on 1,520 km of roads.<sup>48</sup>

- 1.18 **Lessons learned.** A study to evaluate the lessons learned in road corridor improvement and conservation operations undertaken by the Bank in Paraguay<sup>49</sup> produced the following recommendations, which have been taken into account in the design of this operation: (i) MOPC technical teams should be of sufficient size to supervise consulting and works contracts, as well as the implementation of environmental and social programs, which is reflected in this operation through specialists and additional personnel to be hired using project resources (see paragraph 3.3); (ii) indigenous community should participate in the planning of support programs and involvement of their leaders for effective implementation, which has occurred in this operation through the personalized consultations held (see paragraph 2.5); (iii) the right of way should be cleared prior to the start of activities on the work fronts, to minimize conflicts, which is part of the special contractual conditions precedent to the order to start each segment ([required electronic link 3](#)); and (iv) maintenance should continue under the service-level standards modality, which is reflected in this operation through the use of rehabilitation and maintenance contracts (CREMA) (see paragraph 1.23).
- 1.19 **The Bank's country strategy.** The project is aligned with the Bank's country strategy with Paraguay for 2014-2018 (document GN-2769),<sup>50</sup> in particular with the strategic objective of improving transportation infrastructure.
- 1.20 **Strategic alignment.** The project is consistent with the Update to the Institutional Strategy 2010-2020 (document AB-3008) and aligned with the development challenges of: (i) productivity and innovation, under the criterion of providing adequate, reliable, and affordable infrastructure and public services, since the rehabilitation, upgrading, and conservation of the road infrastructure in this strategic corridor of Paraguay will facilitate connectivity, lower transportation costs, shorten travel times, and facilitate access to markets and services, the adoption of technology, and progress in the productive sector; and (ii) economic integration, with a focus on national subsidiarity and regional additionality, since these are investments in a nationwide infrastructure project with an international focus, which aims to improve a national and international transportation corridor that also feeds the multimodal system of the Paraguay-Paraná waterway; and for its contribution toward facilitating access for goods production and transit to external regional and international markets ([optional electronic link 11](#)). The project is also aligned with the crosscutting theme of climate change and environmental sustainability, since it incorporates concepts of climate change adaptation in its works component, including bridges, drainage, and sewers, the design of the paving structure, and criteria for reducing the potential infrastructural impacts of extreme weather events. Approximately 4.53% of the operation's resources are invested in climate change adaptation activities, according to the multilateral development banks' joint methodology for estimating climate finance ([optional electronic link 19](#)). These funds

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<sup>48</sup> Loans 933/OC-PR (1996-2007); 1230/OC-PR (1999-2010); 1278/OC-PR (2000-2010); 1822/OC-PR (2006-2015); 2934/OC-PR and 2935/BL-PR (implemented since 2013); 3372/OC-PR (in execution since 2016); and 3837/OC-PR (approved in 2016).

<sup>49</sup> See [optional electronic link 3](#).

<sup>50</sup> See paragraph 3.7 of document GN-2769.

contribute to the IDB Group's goal of increasing the level of climate change lending to 30% of all approvals by the end of 2020.<sup>51</sup> The project will contribute to the Corporate Results Framework (2016-2019) (document GN-2727-6) through the expected output of kilometers of roads to be upgraded and built.

- 1.21 The project is consistent with the Bank's Infrastructure Strategy, as set out in document GN-2710-5, "Sustainable Infrastructure for Competitiveness and Inclusive Growth," since it contributes to the strategic principles of: (i) financing and technical assistance to ensure that infrastructure supports economic growth, provides access, and fosters regional and global integration; and (ii) the planning, construction, and maintenance of the road infrastructure to deliver quality services that promote sustainable and inclusive growth in the country. The project is also consistent with the Transportation Sector Framework Document (document GN-2740-7), as it contributes to: (i) improved accessibility; and (ii) the rehabilitation and upgrading of the conditions of the road network ensuring full utilization of existing assets and increased safety, and supporting logistics development, thus aligning with the Transport Division's strategic areas of logistics and road safety.

## **B. Objectives, components, and costs**

- 1.22 **Objective.** The overall objective is to contribute to improved productivity and competitiveness of the agriculture sector and to the economic and social integration of Paraguay, particularly the Chaco region. The specific objective is to contribute to the maintenance of serviceability, improvement, and service level of National Route 9 from Kilometer 50 (Cerrito) to Kilometer 525 (Mariscal Estigarribia), as well as the access roads to the towns of Loma Plata, Neuland, and Filadelfia by upgrading and subsequently maintaining them, which will result in lower transportation operating costs and shorter average travel times. To achieve these objectives, the project has been structured in the following component:
- 1.23 **Sole component: Civil works (US\$549.45 million).** This component will finance: (i) upgrading and rehabilitation work on approximately 531 km of National Route 9 (including 56 km of access roads), with interventions to improve the technical characteristics of the existing road, for which, based on current road conditions and their projected future state,<sup>52</sup> the following intervention levels were defined: resurfaced, recycled, or rebuilt. Improving road safety is a key aspect of this operation and will involve widening the current road, rebuilding, and widening shoulders and bridges, rehabilitating drainage ditches, and renovating signage, among other measures. In addition, climate change adaptation measures will include the upgrading of embankments and concrete or masonry structures to the critical hydrological conditions foreseen (see paragraph 1.20). It also includes maintenance by service levels on approximately 553 km (corresponding to the segments to be rehabilitated and upgraded plus 22 km of the "South Line" linking the access roads to Filadelfia and Loma Plata) for a period of four years following the completion of the rehabilitation and upgrading works (see paragraph 2.13); (ii) technical inspection and environmental/social supervision of works, for both the rehabilitation and the maintenance periods; (iii) environmental and social compensation; (iv) payments for environmental services, pursuant to

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<sup>51</sup> Resolution AG-6/16.

<sup>52</sup> Estimated at two years, until the effective start of the works.

- Law 3001/2016 and its regulations, which requires environmental service certificates to be purchased as measures to offset the environmental impacts of the projects, representing at least 1% of the investment cost of the works ([required electronic link 4](#)); and (v) cost escalations and contingencies.
- 1.24 Other costs to be financed (US\$10.35 million): (i) project management, including expenses to support the structure of the MOPC Project Execution Unit (PEU-MOPC), either through a consulting firm for technical and fiduciary support, or through individual support consultants (see paragraphs 2.10 and 3.3); (ii) technical studies; (iii) monitoring and evaluation; (iv) external financial audits; and (v) the finance charges provided in the contract with the Andean Development Corporation (CAF).
- 1.25 **Beneficiaries.** National Route 9 runs through two of the three departments of the Western Region (Presidente Hayes and Boquerón). The main beneficiaries of the project will be the users of the road network, especially agricultural producers, including small and medium-scale entrepreneurs, and inhabitants of the service area of the targeted segments. In the area of direct and indirect influence, there is a potential beneficiary population of at least 201,552 people ([optional electronic link 14](#)).

### C. Key results indicators

- 1.26 The main outcomes of the project will be verified through the following indicators: (i) operating cost (constant US\$ per vehicle-km); (ii) average travel time (minutes per journey); and (iii) the number of trucks in the AADT of National Route 9. The impacts of these outcomes will also be analyzed through an indicator that reflects improvements in the overall perception of Paraguay's road infrastructure quality<sup>53</sup> ([required electronic link 2](#)).
- 1.27 **Economic viability.** An economic feasibility analysis ([optional electronic link 2](#)) was conducted for the project, based on a comparison of costs and benefits, at economic prices, in conditions with and without the project. The benefits were estimated by applying an analytical methodology widely used in road projects (consumer surpluses), quantifying both the savings in the general transportation costs for normal traffic (both induced and derived), as well as the reduction in maintenance costs for the segment. The Highway Development and Management System (HDM-4) model was used to calculate the project's benefits, considering: (i) investment costs, including direct socioenvironmental impact mitigation costs; (ii) vehicle operating costs, including time; and (iii) annual maintenance costs defined for the conditions with and without the project.
- 1.28 The result of the analysis yielded an economic internal rate of return (EIRR) of 16.77%. Under sensitivity analyses that considered a 20% increase in investment cost, a 20% decrease in benefits, and a combined 10% increase in the investment cost and 10% decrease in benefits, the project maintains an EIRR above the 12% discount rate used, thus confirming its robustness under less favorable scenarios. Table 1 summarizes the results of the cost-benefit and sensitivity analysis performed.

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<sup>53</sup> The World Economic Forum quality of roads indicator is used in the calculation of the Global Competitiveness Index.



**Table 1. Economic cost-benefit analysis**

Project	Length (km)	Cost* (US\$ million)	ENPV (US\$ million)	EIRR (%)			
				Base	Sensitivity analysis		
					Cost +20%	Benefit -20%	Cost +10% Benefit -10%
Rehabilitation of National Route 9, from Kilometer 50 to Kilometer 525, plus the Filadelfia, Neuland, and Loma Plata access roads.	531	504.69	67.606	16.77%	14.87%	14.47%	14.69%

\* The initial investment costs included in the condition with the project include: minor rehabilitation works (US\$472.13 million); inspections (US\$20.00 million); payments for environmental services (US\$4.93 million); and ESMP implementation (US\$7.63 million).

- 1.29 Other additional benefits that were not quantified result from the project's strategic importance for the development and socioeconomic integration of its region of influence: (i) impact on the supply of local production and increases in agricultural value-added; (ii) development of the tourism sector; and (iii) the effect of improved year-round serviceability on access to social services (schools, health centers, markets, etc.), among other benefits.

## II. FINANCING STRUCTURE AND MAIN RISKS

### A. Financing instruments

- 2.1 **Cost and financing.** The project will have a total cost of US\$560 million, US\$160 million of which will be financed from the Bank's Ordinary Capital (OC). To finance the local counterpart, the Government of Paraguay is negotiating a loan of US\$400 million with the Andean Development Corporation (CAF). Local counterpart resources, jointly with the Bank loan proceeds, will finance the items specified in the cost table below (except for financing costs related to the CAF loan), in which case the corresponding Bank policies and procedures will be applicable, including procurement policies and procedures (see paragraph 3.6).

**Table 2. Project Costs and Financing by Investment Category**

Cat.	Item	IDB*	Local counterpart	Total	
		(US\$)	(US\$)	(US\$)	%
<b>1</b>	<b>Sole component: Civil works</b>	<b>158,000,000</b>	<b>391,450,000</b>	<b>549,450,000</b>	<b>98.12</b>
1.1	Rehabilitation and maintenance works	136,000,000	357,000,000	493,000,000	88.04
1.2	Technical inspection and environmental/social supervision	5,600,000	14,400,000	20,000,000	3.57
1.3	Environmental and social management plan (ESMP)	5,100,000	2,530,000	7,630,000	1.36
1.5	Payment for environmental services	4,930,000	0	4,930,000	0.88
1.4	Escalations and contingencies	6,370,000	17,520,000	23,890,000	4.27

<b>2</b>	<b>Other costs</b>	<b>2,000,000</b>	<b>8,550,000</b>	<b>10,550,000</b>	<b>1.88</b>
2.1	Project management	1,700,000	4,300,000	6,000,000	1.07
2.2	Evaluations, studies, audits	300,000	800,000	1,100,000	0.20
2.3	Financing fee	0	3,400,000	3,400,000	0.61
2.4	Evaluation expenses	0	50,000	50,000	0.01
	<b>Total</b>	<b>160,000,000</b>	<b>400,000,000</b>	<b>560,000,000</b>	<b>100.0</b>

\* These amounts include local taxes.

- 2.2 The project will be structured under the specific works modality with a disbursement period of seven years.<sup>54</sup> The disbursement schedule is presented in Table 3.

**Table 3. Disbursement Flow (US\$ million)**

<b>Financing</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Year 7</b>	<b>Total</b>
IDB	47.0	77.0	25.0	6.0	2.3	1.8	0.9	160
Local counterpart	119.1	196.1	58.0	12.0	6.4	5.3	3.1	400
Total	166.1	273.1	83.0	18.0	8.7	7.1	4.0	560
% of total	29.7%	48.7%	14.9%	3.2%	1.5%	1.3%	0.7%	100%

## **B. Environmental and social safeguard risks**

- 2.3 The Bank has reviewed the environmental and social aspects of this operation, and classified it as Category “B,” since its potential impacts are mainly temporary and reversible, for which feasible mitigation and compensation measures exist. The main socioenvironmental impacts and risks during the construction phase of the project are the involuntary resettlement and economic displacement of 189 social units (homes, commercial premises, and mixed-use housing), including 15 homes and four indigenous businesses, as well as 11 public institutions. This operation also has the potential to affect the local population as a result of interactions between the construction workers and the local population, impacts on occupational and community health and safety, potential road accidents, access restrictions as a result of earth moving, heavy machinery traffic, and nuisances to neighboring populations in the form of noise and dust.
- 2.4 During the operational phase, the main impacts relate to road accidents and animals being run over, as well as indirect impacts associated with possible increases in land costs, potential deforestation, and possible land use changes for farming and ranching activities. No direct impacts are expected on protected areas or critical natural habitats, wetlands or Ramsar sites, or cultural and historical sites, since all rights-of-way have been in place for several decades. Nor are significant impacts anticipated from the opening of new roads, quarries, borrow pits, or other project actions.
- 2.5 Owing to the geographical dispersal of the stakeholders and their sociocultural differences, the project held a round of personalized consultations with the affected populations and stakeholders, including populations located on the right of way

<sup>54</sup> Two years are envisaged for upgrading works and four years for maintenance, to be conducted by the same contractors. An extra year is provided for the bidding periods and administrative closure of the contracts.



subject to involuntary resettlement or economic displacement, indigenous communities living in the project target area, local authorities, and nongovernmental organizations (NGOs) in the area. The main outcomes of the consultation are general support for the project, keeping the population informed, adopting measures to prevent road accidents, and considering the local population for work opportunities without discriminating against indigenous people. The indigenous communities to be resettled were informed about the project and the need to be resettled, and had the opportunity to express their concerns, which relate mainly to the replacement of their dwellings and support for relocation, support for the rehabilitation of their working and commercial activities and living conditions, support in returning to their communities of origin, and an ongoing communication process. They also stated that they do not oppose the project. As a result, these concerns were reflected in the measures of the Resettlement Plan. The details and documentation of the consultation are included in the consultations plan ([optional electronic link 17](#)).

- 2.6 The executing agency has agreed to obtain consent for the compensation measures called for in the Project Resettlement Plan<sup>54</sup> from indigenous families and traders who may have to be resettled—not during the operation's preparation stage, but after the corresponding loan agreement has entered into force. The executing agency considers that it can only make a commitment with the occupants of the National Route 9 right-of-way to implement the measures specified in the Resettlement Plan, after the current loan agreement has entered into force. The MOPC explains that this is due to the fact that there is an expropriation law applicable to the project (Law 5389/2015), which only provides for the payment of compensation for expropriation and not the other measures called for in the Resettlement Plan. They therefore conclude that there would be no legal grounds at this time for the government to act otherwise than as provided in that law. Since legal approval of the contract by the Paraguayan Legislature is required, this would supplement the relevant legal framework and make it legally possible to implement the Resettlement Plan.<sup>55</sup> Thus, once the loan contract enters into effect, the executing agency assumes a legal commitment to implement it in relation to all affected parties and to obtain the documented, prior consent of the indigenous families and traders to be resettled. Accordingly, **as a special condition precedent to the first disbursement, evidence will be provided, to the Bank's satisfaction, of informed consent of the indigenous families and traders to be resettled (identified in the first round of consultations), to the resettlement and compensation measures called for in the Resettlement Plan approved by the Bank. If the solicitation of works is moved forward, this obligation will be a special execution condition precedent to the solicitation of works.**<sup>56</sup>

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<sup>54</sup> The measures envisaged in the Plan include resettlement nearby but off the right-of-way; resettlement on land adjacent to new rest areas; the resettlement of indigenous people in their communities of origin and reintegration support for members of communities with their own land; or economic compensation.

<sup>55</sup> The executing agency has indicated that, pursuant to the principle of legality prevailing in the performance of administrative functions, which constrains public institutions to act in accordance with what is expressly contemplated in current laws and regulations, it can only extend the scope of its jurisdiction and authority to the extent that such activities are expressly contemplated in special laws.

<sup>56</sup> VPS/ESG clearance must be obtained before these conditions will be considered fulfilled.

- 2.7 Nonetheless, these conditions require a temporary exemption from the time limit established in Operational Policy OP-710 (document GN-1979-3), Section (V), paragraph (6), and from the consent requirement in paragraph (IV)(4) of said policy, before the Bank approves the project, so that the executing agency may submit the updated Resettlement Plan, including the consent requirement in paragraph (IV)(4) of said policy, prior to the solicitation of works or the first disbursement of the loan proceeds, whichever occurs first. Section (V), paragraph (6) of OP-710 requires the borrower to submit a final resettlement plan, to the Bank's satisfaction, before distributing the loan proposal to the Bank's Board of Executive Directors. In the case of indigenous communities, this requires the consent of those affected pursuant to Section (IV), paragraph (4) of Operational Policy OP-710. The exception from this requirement would make it possible to delay application of the substantive consent requirement under OP-710, subsequent compliance with which would be contractually guaranteed, while also allowing the executing agency to act within the framework of the applicable laws. The ESMR ([required electronic link 3](#), pp. 10-12) provides further information on this situation. The Board of Executive Directors has previously approved a waiver of the provisions of Policy OP-710 under project 3881/OC-PE.
- 2.8 If similar difficulties arise in jurisdictions with a regulatory situation similar to the one described above, a case-by-case analysis would be required. For this particular project: (i) personal consultations have been held with the 15 families and four indigenous businesses potentially affected, who have verbally indicated their consent to the compensation measures that have been included in the Resettlement Plan as a result of these consultations; (ii) no final works design is yet available which would unambiguously identify all indigenous people who would ultimately need to be resettled, although confirmation of their consent will need to be obtained once the design has been finalized; and (iii) the Bank has recently been supporting institutional strengthening of the executing agency in resettlement (operation ATN/OC-14773-PR).
- 2.9 To prevent, reduce, mitigate, and offset the potential environmental and social impacts and risks of the project, the project has an environmental and social analysis (EAS), ([optional electronic link 13](#)), together with an ESMP, a Resettlement Plan ([optional electronic link 15](#)), and a sociocultural analysis ([optional electronic link 16](#)) for indigenous communities in its target area, which allows for compliance with Operational Policy OP-765. It is also planned to acquire environmental certificates in similar ecosystems, equivalent to 1% of the works value, to offset the potential direct and indirect impacts of the project, and to encourage the conservation of natural ecosystems on private and indigenous lands. Further information can be found in the ESMR ([required electronic link 3](#)).

### **C. Fiduciary risks**

- 2.10 The Office of the Deputy Minister of Public Works, acting through the MOPC Project Execution Unit (PEU-MOPC), has experience in the application of Bank policies and procedures. However, areas for improvement have been identified, such as planning, organization, internal control, and personnel and property management, which, according to the latest Institutional Capacity Assessment System (ICAS) study, display medium levels of development and risk. These needs arise from successive institutional restructurings and the large number of projects with multiple

external funding agencies that exceed the capacity of trained human resources assigned to the planning, procurement, financial management, and control of ongoing projects. To improve these areas, the PEU-MOPC was created via Ministerial Resolution 1354 of 16 August 2016. This unit is responsible for executing 13 externally-funded MOPC projects, including all Bank operations. The PEU-MOPC is executing operations 2934/OC-PR, 2935/BL-PR, 3372/OC-PR, and 3837/OC-PR through the Project Management Division of the Highways Directorate. A risk was identified in terms of this unit's responsiveness. To mitigate this risk, a consulting firm will be engaged for technical and fiduciary support, funded partially from each operation, to support the PEU-MOPC, in particular the aforementioned Project Management Division, in the overall management and coordination of the execution of the projects under its responsibility (see paragraph 3.3). In the context of the other currently executing operations, the PEU-MOPC is being strengthened through other activities, which can be supplemented under this operation. These activities will help mitigate the medium risk identified in the MOPC Internal Audit Unit's monitoring of the investment.

#### **D. Other project risks**

- 2.11 **Additional costs.** A medium risk of an increase in the cost of the project was identified,<sup>57</sup> and has been mitigated in the project design by using conservative assumptions, including contingencies and/or projected cost escalations (reference costs obtained from similar, currently executing, works were used); and support from the Bank and the MOPC in preparing studies and engineering designs. During preparation of the project, the final engineering designs dating back to 2015 were updated and supplemented at the feasibility level. The executing agency will issue solicitations to update these designs using its own resources, so that they are valid at the time of solicitation the works.
- 2.12 **Delays in the preparation and approval of final technical designs,** identified as a medium risk. As a condition precedent to the solicitation of works, the executing agency will approve an update of the final detailed designs and then submit them for the Bank's no objection.<sup>58</sup> The Bank will monitor the updating of the studies during execution, even if they are developed before the operation's eligibility.
- 2.13 **Sustainability of investments.** In the short to medium term, the implementation of rehabilitation and maintenance contracts (CREMAs) is planned for this operation. Under CREMA contracts, the firm awarded the rehabilitation works is also subsequently responsible for their maintenance during the period specified in the contract (estimated at four years).<sup>59</sup> Likewise, and with a view to medium- to long-term sustainability, the executing agency undertakes to maintain the targeted

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<sup>57</sup> The dynamic conditions of road deterioration create uncertainty as to the works that will be needed when project execution begins.

<sup>58</sup> This reduces the likelihood of substantial changes in the works design and/or quantities during construction and the extension of construction periods, so it is anticipated that only minor adjustments will be required, without a substantial impact on costs. Moreover, although funds are provided for contingencies, they will only be used if contingencies arise that are not allotted to a contract in advance.

<sup>59</sup> This creates the right incentives for the contractor to properly execute the rehabilitation and improvement works, since doing the work effectively from the start will reduce subsequent maintenance costs, and the contractor is responsible for maintaining the work it executes. It also helps to avoid the frequently observed delays between the end of rehabilitation and the start of maintenance.

segments, in accordance with acceptable technical standards, which will be incorporated into the road maintenance management system.<sup>60</sup>

- 2.14 **Delay in legislative approval.** A medium risk is foreseen for delays in obtaining legislative approval for the loan, arising from legislative cycles and changes in authorities. For this reason, the executing agency will be given technical support to implement a program dissemination strategy, involving local authorities and members of parliament from the service areas where the road segments will be upgraded. This will allow adequate information to be provided to the Congress of the Republic on the scope of the project and its expected benefits.
- 2.15 **Lender coordination.** To avoid the medium risk identified of a lack of coordination among lenders, the Bank worked with the CAF in the preparation stage of the operation, agreeing on its objectives, components, and financing structure. To continue this approach in the execution phase, a collaboration agreement will be signed by representatives of the Bank<sup>61</sup> and the CAF, specifying each of the areas necessary for the implementation of policies and for communication and information exchange between the two entities. The program Operating Regulations will also describe the main operational aspects of this coordination (see paragraph 3.5).

### III. IMPLEMENTATION AND MANAGEMENT PLAN

#### A. Summary of implementation arrangements

- 3.1 **Borrower and executing agency.** The borrower of this operation will be the Republic of Paraguay. The borrower, acting through the Ministry of Public Works and Communications (MOPC), will also serve as executing agency. The project will be implemented by the MOPC Project Execution Unit (PEU-MOPC), within the Office of the Deputy Minister of Public Works and Communications, and implementation actions will be coordinated among the MOPC line units.
- 3.2 The PEU-MOPC will be responsible for the project's technical, administrative, and operational management, including the following tasks: (i) timely presentation of evidence of fulfillment of the conditions precedent to the first disbursement and the special execution conditions; (ii) contracting and procurement of works, goods, and services; (iii) processing of loan disbursements with the Bank; (iv) management of the external audit; (v) delivery of operational plans to the Bank (including the financial plan, procurement plan, annual work plan (AWP), and others); (vi) delivery of reports to the Bank (including, audit, status, evaluations) and other documents; (vii) monitoring of the supervision and oversight of works and service contracts; and (viii) liaison with the Bank.
- 3.3 To provide support to the PEU-MOPC, and especially the Project Management Division of the Highways Directorate, a consulting firm with experience in executing similar projects will be engaged for technical and fiduciary support. This consulting firm will support the preparation of technical specifications for the contracting of services and works, planning and programming of project activities, review of designs, works technical and environmental supervision, procurements and financial

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<sup>60</sup> The MOPC's current maintenance strategy for the entire paved road network is based on a gradual migration to outsourced CREMA or GMANS contracts. See Chapters 6 and 7 of [optional electronic link 7](#).

<sup>61</sup> Duly authorized under Administrative Manual, Section AM-120. [Collaboration agreement](#).

control, socioenvironmental considerations, institutional relations, monitoring and evaluation, and other tasks.

- 3.4 The works will be executed by construction firms. For the sake of efficiency,<sup>62</sup> the physical length of the project was divided into four work sections, which will be tendered as one, but awarded in lots. Consulting firms or independent consultants will be hired to conduct the project's studies and provide specialized technical assistance services and works oversight.<sup>63</sup> The contractor and works inspection firm must each have at least one permanent environmental and social specialist per works segment on their team to verify compliance with the General Environmental Technical Specifications (ETAGs) provided for in the applicable specifications, conditions, and manuals.
- 3.5 The Operating Regulations will be consistent with MOPC and Bank policies and procedures, as well as with the laws and financial practices in force in Paraguay. The document will cover at least the following items: the project's execution and coordination mechanisms; the institutional, organizational, and functional framework; the programming, monitoring, control, and evaluation mechanisms; the financial management, budget, accounting, and payment mechanisms; and procurement management and exchange control procedures. In terms of environmental and social management, the documents referred to in the ESMR ([required electronic link 3](#)) will be included in the Operating Regulations.
- 3.6 **Procurement.** Procurements will be executed in accordance with the Policies for the Procurement of Works and Goods Financed by the Inter-American Development Bank (document GN-2349-9) and the Policies for the Selection and Contracting of Consultants Financed by the Inter-American Development Bank (document GN-2350-9), both of March 2011. The loan contract and procurement plan ([required electronic link 4](#)) establish the review modality, processes, and monitoring of procurements under the project. All procurement and/or contracting processes will be subject to ex ante review by the Bank.
- 3.7 **As special conditions precedent to the first disbursement of the loan proceeds, evidence of the following will be provided, to the Bank's satisfaction: (i) the signature and entry into force of a financing agreement between the Andean Development Corporation (CAF) and the Republic of Paraguay in the amount of US\$400 million for joint parallel cofinancing of the project (see paragraph 2.1); (ii) the entry into force of the project Operating Regulations, via adoption of the corresponding ministerial resolution, on terms previously approved by the Bank (see paragraph 3.5); (iii) assignment of the project to the MOPC Project Execution Unit (PEU-MOPC), via ministerial resolution (see paragraph 3.1); and (iv) informed consent of the indigenous families and traders to be resettled (identified in the first round of consultations), to the resettlement and compensation measures called for in the Resettlement Plan approved by the Bank (see paragraph 2.6). These conditions are considered essential for the borrower to ensure that counterpart funds**

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<sup>62</sup> And also considering the lessons learned from the GMANS ([optional electronic link 8](#)), where it was concluded that the segments to be included under this modality should be around 150 km per contract, given the region's previous experiences.

<sup>63</sup> Each inspection firm is expected to take charge of two work segments.

are available to execute the project and to demonstrate that it has suitable technical and administrative staff in place to begin execution of the operation.

- 3.8 **Disbursements.** The loan will be disbursed under the advance of funds modality, with frequency determined on the basis of the project's financial programming, to be updated regularly by the PEU-MOPC. The Bank may make a new advance of funds when supporting documentation has been provided for at least 80% of the total funds previously advanced. Financial review of disbursement requests will be according to the ex post modality, as envisaged in the external audit.

**B. Summary of arrangements for monitoring results**

- 3.9 The monitoring and evaluation plan will track execution of the operation against the targets and progress indicators specified in the Results Matrix, using the following instruments: (i) the project execution plan, the procurement plan and annual external audits; (ii) six-monthly status reports, including monitoring indicators for impact, outcomes, component implementation, and compliance with environmental, social and occupational health and safety requirements, in particular the indigenous community support plan, resettlement plans, a plan to support rural communities, and the ESMP; (iii) final evaluation of the project (see paragraph 3.10); and (iv) audited financial statements.
- 3.10 The executing agency will submit a final evaluation to the Bank when 90% of the project disbursements have been released. This evaluation will cover at least the following: (i) an ex post cost-benefit analysis, using the methodology applied in the ex ante analysis, and including a comparison of the results to verify the assumptions and parameters considered, all according to the details specified in the monitoring and evaluation plan ([required electronic link 2](#)); (ii) the results of financial execution; (iii) targets met, according to the agreed results indicators; and (iv) compliance with contractual obligations.

Development Effectiveness Matrix		
Summary		
I. Corporate and Country Priorities		
1. IDB Development Objectives	Yes	
Development Challenges & Cross-cutting Themes	-Productivity and Innovation -Economic Integration -Climate Change and Environmental Sustainability	
Country Development Results Indicators	-Roads built or upgraded (km)*	
2. Country Development Objectives	Yes	
Country Strategy Results Matrix	GN-2769	Improve transportation infrastructure.
Country Program Results Matrix		The intervention is not included in the 2017 Operational Program.
Relevance of this project to country development challenges (If not aligned to country strategy or country program)		
II. Development Outcomes - Evaluability	Evaluable	
3. Evidence-based Assessment & Solution	8.4	
3.1 Program Diagnosis	3.0	
3.2 Proposed Interventions or Solutions	2.4	
3.3 Results Matrix Quality	3.0	
4. Ex ante Economic Analysis	10.0	
4.1 The program has an ERR/NPV, a Cost-Effectiveness Analysis or a General Economic Analysis	4.0	
4.2 Identified and Quantified Benefits	1.5	
4.3 Identified and Quantified Costs	1.5	
4.4 Reasonable Assumptions	1.5	
4.5 Sensitivity Analysis	1.5	
5. Monitoring and Evaluation	7.1	
5.1 Monitoring Mechanisms	2.5	
5.2 Evaluation Plan	4.6	
III. Risks & Mitigation Monitoring Matrix		
Overall risks rate = magnitude of risks*likelihood	Medium	
Identified risks have been rated for magnitude and likelihood	Yes	
Mitigation measures have been identified for major risks	Yes	
Mitigation measures have indicators for tracking their implementation	Yes	
Environmental & social risk classification	B	
IV. IDB's Role - Additionality		
The project relies on the use of country systems		
Fiduciary (VPC/FMP Criteria)	Yes	Financial Management: Budget, Treasury, Accounting and Reporting.  Procurement: Information System, National Public Bidding.
Non-Fiduciary	Yes	Strategic Planning National System.
The IDB's involvement promotes additional improvements of the intended beneficiaries and/or public sector entity in the following dimensions:		
Gender Equality		
Labor		
Environment	Yes	Socio environmental studies and public consultations were undertaken to design the Environmental and Social Management Plan.
Additional (to project preparation) technical assistance was provided to the public sector entity prior to approval to increase the likelihood of success of the project		
The ex-post impact evaluation of the project will produce evidence to close knowledge gaps in the sector that were identified in the project document and/or in the evaluation plan		

Note: (\*) Indicates contribution to the corresponding CRF's Country Development Results Indicator.

This is a US \$160 million loan operation, co-financing works with a total cost of US \$560 million. Its objective is to contribute to the preservation of the transitability, improvement and service levels of Route Number 9 (RN9) of Paraguay, from kilometer 50 (Cerrito) to kilometer 525 (Mariscal Estigarribia), as well as of access roads to the localities of Loma Plata, Neuland and Filadelfia through its improvement and subsequent conservation. The RN9 is the main road connecting the Chaco area with the economic and administrative center of the country, while serving as a route to the Pacific coast via Argentina, Bolivia and Chile. Approximately half of the average daily traffic is trucks, thus being of great importance for freight transport.

The RN9 is poorly maintained, and it has reached its design life. Its deterioration conditions are estimated to increase vehicular operating costs by up to 19% (depending on the type of vehicle) and travel times by up to 76%, relative to optimum conditions of circulation. The expected result of this intervention is a reduction in both vehicle operating costs and travel times.

The ex-ante economic analysis of the intervention is appropriate, with reasonable and standard assumptions for this type of project, and with reasonable sensitivity analyses. The net present value of the project is US \$67 million, with an internal rate of return of 16.77%.

The project proposes an evaluation plan based on an ex-post cost-benefit analysis that is well presented and developed. This type of analysis does not allow to measure ex-post effectiveness, but the project efficiency at completion.

The overall risk of the operation is medium, and this classification appears as appropriate, as well as the proposed risk mitigation actions.



## RESULTS MATRIX

Expected impact of the project	To contribute to improved productivity and competitiveness of the agriculture sector and to the economic and social integration of Paraguay, particularly the Chaco region.
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Impact indicator <sup>1</sup>	Baseline (2017)	Target (2025)
Increase in road quality - Global Competitiveness Index <sup>2</sup>	2.2 Global Competitiveness Report 2016-2017 <sup>3</sup>	2.31 Global Competitiveness Report 2024-2025 <sup>4</sup>

**Outcome:** To contribute to the improvement and maintenance of serviceability and level of service on the targeted road segments by upgrading and maintaining them, which will result in lower transportation operating costs and shorter average travel times, and a greater quantity of trucks in the annual average daily traffic (AADT).

Outcome indicators	Baseline	Target	Means of verification/Comments																																		
Average operating cost per vehicle-km on roads subject to rehabilitation and conservation works under the project (constant US\$)	<div>i. Rehabilitation works</div> <table><tr><th>Vehicle type</th><th>NR9 (2018)</th></tr><tr><td>Light</td><td>0.3152</td></tr><tr><td>Pickup</td><td>0.2925</td></tr><tr><td>Bus</td><td>1.0569</td></tr><tr><td rowspan="4">Trucks</td><td>Light</td><td>0.5215</td></tr><tr><td>Medium</td><td>0.9059</td></tr><tr><td>Heavy</td><td>1.4779</td></tr><tr><td>Articulated</td><td>1.7145</td></tr></table>	Vehicle type	NR9 (2018)	Light	0.3152	Pickup	0.2925	Bus	1.0569	Trucks	Light	0.5215	Medium	0.9059	Heavy	1.4779	Articulated	1.7145	<div>i. Rehabilitation works</div> <table><tr><th>Vehicle type</th><th>NR9 (2021)</th></tr><tr><td>Light</td><td>0.2991</td></tr><tr><td>Pickup</td><td>0.2468</td></tr><tr><td>Bus</td><td>0.9190</td></tr><tr><td rowspan="4">Trucks</td><td>Light</td><td>0.4740</td></tr><tr><td>Medium</td><td>0.8048</td></tr><tr><td>Heavy</td><td>1.4169</td></tr><tr><td>Articulated</td><td>1.6169</td></tr></table>	Vehicle type	NR9 (2021)	Light	0.2991	Pickup	0.2468	Bus	0.9190	Trucks	Light	0.4740	Medium	0.8048	Heavy	1.4169	Articulated	1.6169	HDM-4 traffic study. <sup>5</sup> Responsible entity: Project Execution Unit of the Ministry of Public Works and Communications (PEU-MOPC).
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<sup>1</sup> This indicator is included as a way of measuring the impact the investments will have on the upgrading and conservation of the road segments targeted by the project. Although the indicator is not directly related to the project objectives, it is a proxy for the contribution made by these investments to the higher-order objectives set in Paraguay's current development strategy.

<sup>2</sup> The World Economic Forum's quality of roads indicator, which is included in the calculation of the Global Competitiveness Index as a second-pillar parameter, will be used to demonstrate the overall improvement in the quality of Paraguay's road infrastructure, or the perception thereof, as generated by the project. The indicator, which is published in the World Competitiveness Report, is calculated every two years by surveying business executives working in the country in question, on their impression of the quality of the country's road infrastructure. A score of 1 represents the lowest quality, and 7 the highest.

<sup>3</sup> Source: [The Global Competitiveness Report 2016-2017](#), World Economic Forum, 2016.

<sup>4</sup> Source: Global Competitiveness Report 2025-2026, World Economic Forum, 2025: <https://www.weforum.org/>.

<sup>5</sup> For details, see [required electronic link 2](#).



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Average annual daily traffic – No. of trucks <sup>6</sup> on National Route 9	359 (2018)	469 (2025)	Responsible entity: PEU-MOPC																																																																																				

<sup>6</sup> This indicator is included as a proxy for the impact of the program's proposed actions on the volume of freight-vehicle traffic (light, medium, heavy, and articulated trucks) on National Route 9.

Expected outputs											
Sole component: Civil works											
Output indicators	Unit of measure	Base-line	Year							Cumulative target	Means of verification/Comments
			1	2	3	4	5	6	7		
Length of segments in the national primary road network subject to rehabilitation works under the project.	km	0	0	0	531	0	0	0	0	531	Inspection reports. Responsible entity: PEU-MOPC
Length of segments of the national primary road network subject to conservation works under the project.	km	0	22	22	22	553	553	553	553	553	Inspection reports. Responsible entity: PEU-MOPC

## **FIDUCIARY AGREEMENTS AND REQUIREMENTS**

<b>Country:</b>	Paraguay
<b>Project name:</b>	Upgrade and Maintenance Project for National Route 9 and Access Roads
<b>Project number:</b>	PR-L1145
<b>Executing agency:</b>	Ministry of Public Works and Communications (MOPC)
<b>Prepared by:</b>	Fernando Glasman, Bruno Candia, and Jorge Luis González (Fiduciary Specialists)

### **I. EXECUTIVE SUMMARY**

- 1.1 The institutional assessment for the project's fiduciary management was based on: (i) the country's fiduciary context; (ii) the results of the fiduciary risk assessment and Project Risk Management Workshop; and (iii) consulting services, funded from operation ATN/OC-16037-PR, to provide specialized support for setting up the Project Execution Unit of the Ministry of Public Works and Communications (PEU-MOPC). The Fiduciary Agreements applicable to the execution of this project are based on this assessment.

### **II. FIDUCIARY CONTEXT OF THE COUNTRY**

- 2.1 In general, Paraguay's national financial management systems display a medium development level; but they need to be complemented for the purposes of executing Bank-financed projects. In the case of specific financial reports, these are currently produced through auxiliary accounting systems. Financial control tools, such as the Integrated Financial Management System (SIAF), the SICO accounting system and other subsystems, enable executing agencies to transfer payments to suppliers through the Central Bank of Paraguay (BCP) under acceptable conditions. In future, the integration of these systems will make it possible to produce audited financial statements for a program or project in the SIAF; but parallel systems are being used in the meantime. External control is currently being performed through private auditing firms.
- 2.2 Paraguay's national public procurement system, the SICP Public Procurement Information System, has been fully used in the Bank's operations, in conjunction with the national online reverse auction (SBE) and competitive tendering (LCO) subsystems, for the amounts and categories specified in the agreement on the use of those subsystems signed between Paraguay and the Bank on 17 June 2014.

### **III. FIDUCIARY CONTEXT OF THE EXECUTING AGENCY**

- 3.1 The MOPC will serve as executing agency through the PEU-MOPC, which is attached to the Vice-Ministry of Public Works. The PEU-MOPC will represent the executing agency in the administrative aspects of the program, supported by the

Project Management Division of the Highways Directorate, which is also assigned to the execution of loans 2934/OC-PR, 2935/BL-PR, 3372/OC-PR, and 3837/OC-PR.

- 3.2 The PEU-MOPC will be used as an execution mechanism, acting through the Project Management Division of the Highways Directorate. Nonetheless, this unit needs its core staff to be reinforced in the technical and fiduciary areas, to be able to absorb the greater operational demands that this operation will entail. This situation is considered a crosscutting factor that is very likely to generate risks for attaining the program's objectives within the scope, timeframe, and costs and (quality) initially estimated. As this is seen as a problem, it will be mitigated as indicated in paragraph 4.2.

#### IV. FIDUCIARY RISK EVALUATION AND MITIGATION ACTIONS

- 4.1 Based on the evaluations made of the PEU-MOPC and our experience to date, since other Bank-financed programs are currently executing, we can state that opportunities for improvement should focus on strengthening the accounting and internal audit areas.
- 4.2 **Procurement management.** For the Goods and Services Management System (SAB) the Institutional Capacity Assessment System (ICAS) update has reported medium development and medium risk. Nonetheless, a medium risk is identified in possible delays in procurements as experienced by the Highway Directorate in the execution of loans 2934/OC-PR, 2935/BL-PR and 3327/OC-PR, during which some of the probability factors indicated in the matrix materialized. Accordingly, the situation mentioned in paragraph 3.2 is a problem requiring mitigation measures. It is therefore proposed to provide the PEU MOPC, in a timely manner, with staff suitable for implementing the program and fulfilling the proposed objectives. The PEU-MOPC will be assisted by a consulting firm contracted to support project management (ECATEF), which will provide technical, fiduciary and logistics management personnel who satisfy the profiles defined by the PEU as required for program execution. If the situation of the PEU-MOPC so requires, this consulting firm may also provide information technology hardware and supplies, along with the necessary software and furniture, rental of physical space, etc., and thus give technical support to the PEU-MOPC project team, acting autonomously with its own management and finance subunit (SUBUAF) and operational procurement unit (UOC).
- 4.3 **Financial management.** The internal control unit lacks management plans that include project supervision. If necessary, a technical expert will be drafted in to support the monitoring and supervision of the program's investment processes.

#### V. CONSIDERATIONS FOR THE SPECIAL PROVISIONS OF THE CONTRACT

- 5.1 The following agreements and requirements should be considered in the special clauses:
- (i) The opening of a special bank account for the program's exclusive use.
  - (ii) The executing agency will submit annual and final audited financial statements for the project, under specific terms of reference acceptable to the Bank, within 120 days following its fiscal year-end, throughout

the original disbursement period or any extension thereof. The final audit report will be submitted within 120 days following expiry of the original disbursement period or any extension thereof.

## VI. FIDUCIARY AGREEMENTS AND REQUIREMENTS FOR PROCUREMENT EXECUTION

- 6.1 The procurement policies applicable to this loan are contained in documents GN-2349-9 and GN-2350-9. The Bank's Board of Executive Directors also approved (GN 2538-11) use of the online reverse auction (SBE) and competitive tendering (LCO) subsystems of Paraguay's Public Procurement System (Law 2051/03). The use of other country systems that may be approved after project approval will be automatically applicable and will be indicated in the procurement plan.

### A. Procurement execution

- 6.2 **Procurement of works, goods, and nonconsulting services.** Contracts for works, goods and nonconsulting services<sup>1</sup> subject to international competitive bidding (ICB) will be executed using the Standard Bidding Documents (SBDs) issued by the Bank. Bids subject to National Competitive Bidding (NCB) will be executed using National Bidding Documents agreed upon with the Bank. The technical specifications of procurements will be reviewed by the project's sector specialist during the preparation of selection processes. Initially, no direct contracting<sup>2</sup> is envisaged.
- 6.3 **Selection and contracting of consultants.** Consulting services contracts generated under the project will be executed using the Standard Request for Proposals (SRPs) issued by or agreed upon with the Bank. The terms of reference for the contracting of consulting services will be made available by the project's sector specialist. Single-source selection will be used to maintain continuity of the ECATEF with other MOPC Road Projects (2934/OC-PR, 2935/BL-PR and 3372/OC-PR), which are currently in the selection process, to also support execution of the 3837/OC-PR program for an estimated US\$6 million,<sup>3</sup> provided that the conditions specified in paragraphs 3.9 to 3.13 of the Policies (document [GN-2350-9](#)) are met.
- (i) **Selection of individual consultants.** Pursuant to the respective procurement policies (document GN-2350-9).
  - (ii) **Training.** Not envisaged for this operation.
  - (iii) **Use of country systems.** Pursuant to document GN-2538 of October 2013, use of the online reverse auction (SBE) and competitive tendering (LCO) subsystems of Paraguay's Public Procurement System (SCSP), will be applicable in operations financed by the Bank, as follows:
    - a. In all goods and nonconsulting service contracts subject to online reverse auction as under the SCSP, provided the amount is below the threshold set by the Bank for application of the shopping method for off-the-shelf goods (threshold: US\$250,000).

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<sup>1</sup> Document GN-2349-9, paragraph 1.1: Nonconsulting serves are treated as goods.

<sup>2</sup> Document [GN-2349-9](#), paragraph 3.6: Direct contracting must be duly justified.

<sup>3</sup> Document [GN-2350-9](#), paragraph 3.9: Single-source selection must be duly justified.

- b. In all works contracts for amounts below the threshold set by the Bank for application of shopping method for custom goods (threshold: US\$250,000), and contracts for goods and nonconsulting services up to the amount set by the Bank for application of the shopping method for custom goods and services (threshold: US\$50,000).
  - c. Contracts for amounts equal to or above the aforementioned thresholds will be governed by the Bank's Policies (document GN-2349-9).
- 6.4 Section 1 of the Bank's Policies (document GN-2349-9) will be applicable in all contracts executed regardless of their amount or procurement modality. Any system or subsystem that may be approved subsequently will be applicable to the operation. The operation's procurement plan and its updates will identify contracts to be executed through the approved national systems.<sup>4</sup>
- 6.5 **Recurring expenditures.** The environmental services generated by the impact of the road program will be paid for pursuant to the procedures currently in force in Paraguay.
- 6.6 **Advance procurement/retroactive financing.** Not envisaged for this operation.
- 6.7 **Domestic preference.** Not envisaged for this operation.

**Table 1. Thresholds for international competitive bidding and international shortlist for consulting services (US\$)**

Method	ICB for works	ICB for goods and nonconsulting services	International shortlist for consulting services
Threshold	3,000,000	250,000	200,000

**Table 2. Main Procurements**

Activity	Type of bidding	Estimated date	Estimated amount (US\$000)
<b>Works</b>			
Construction firm for the rehabilitation and maintenance of segment 1: km 50 - km 173	ICB	Year 1	104,000
Construction firm for the rehabilitation and maintenance of segment 2: km 173 - km 326	ICB	Year 1	142,000
Construction firm for the rehabilitation and maintenance of segment 3: km 326 - km 450	ICB	Year 1	131,000
Construction firm for the rehabilitation and maintenance of segment 4: km 450 - km 525, accesses and line 1	ICB	Year 1	116,000

<sup>4</sup> Should the Bank validate another system or subsystem, this will be applicable to the operation pursuant to the provisions of the Loan Agreement.

Consulting services			
Consultant firm for the inspection of segments 1 and 2	Quality- and cost-based selection (QCBS)	Year 1	9,500
Consulting firm for the inspection segments 3 and 4	QCBS	Year 1	10,500
ECATEF to support program implementation	Single-source selection	Year 1	6,000

- 6.8 **Procurement supervision.** All procurement and/or contracting processes governed by Procurement Policies GN-2349-9 and GN 2350-9 will be reviewed by the Bank ex ante, after consulting the Ministry of Finance in this regard. The supervision of all procurement and/or contracting processes governed by the online reverse auction (SBE) and competitive tendering (LCO) subsystems of Paraguay's Public Procurement System (GN-2538-11) will be processed through the country system.<sup>5</sup>
- 6.9 **Special provisions.** No special provisions are envisaged, other than those specified in paragraph 5.1.
- 6.10 **Records and files.** Project reports and files should be prepared using the forms or procedures that have been agreed upon and described in the project's Fiduciary Functions and Procedures Manual.

## VII. FIDUCIARY AGREEMENTS AND REQUIREMENTS FOR FINANCIAL IMPLEMENTATION

### A. Financial management

#### 7.1 Programming and budgeting

- (i) The PEU-MOPC will centralize the coordination of project implementation, supported by the other MOPC units and departments, as necessary.
- (ii) The budget will be programmed, managed and executed by the PEU-MOPC, under the zero-based budgeting system.

#### 7.2 Accounting and information systems.

Paraguay uses modified cash accounting; but, for record keeping in projects financed by the Bank, it is working on a cash basis.

- (i) **Information systems.** The executing agency has direct access to the SIAF, since it has the rank of financial management subunit (Sub-UAF). As the national systems are unable to issue the reports by the Bank, these are prepared through different systems, resulting in additional work for the PEU-MOPC.
- (ii) **Disbursements and cash flow.** Program disbursements will be made through advances of funds, which must be supported by a detailed monthly financial plan covering a period of up to six months, and another long-term plan, making it possible to determine the program's actual needs arising from the execution plan, annual work plan, and

<sup>5</sup> Depending on the scope of the system, supervision can be complemented by project audits, in which case this should be mentioned in this Annex.

procurement plan. The second and subsequent disbursements will require justification of 80% of funds already advanced.

- (iii) **Exchange rate.** The exchange rate will be as provided in Article 4.10, subsection b(ii), of the General Conditions of the Loan Contract. For such purposes, the agreed exchange rate will be the exchange rate on the effective date on which the borrower, the executing agency or any other person or corporation to whom the power to make expenditures has been delegated, makes the respective payments in favor of the contractor, supplier, or beneficiary.
- (iv) **Internal control and internal audit.** The 2016 second semester report of the Standard Internal Control Model of Paraguay (MECIP) produced a score of 4.3, corresponding to an adequate performance level. This has been published on the website of the Public Audit Office, which monitors internal control of the MOPC. Nonetheless, the MOPC's Internal Audit does not comprehensively include Bank-financed projects.
- (v) **External control and reporting.** The executing agency will submit annual financial statements for the program, audited by a firm of independent auditors accepted by the Bank, and under terms of reference previously approved by it. Project financial statements include the following: statement of cash flows, statement of cumulative investments, notes to the financial statements, and a statement by Project Management (i.e. the executing agency). The audit report will include an evaluation of the internal control system.
- (vi) The project will require selection of an independent audit firm rated at the "Plus" level.
- (vii) The cost of the external audits, estimated at US\$500,000 for the seven years envisaged for loan execution, will be financed from with loan proceeds.
- (viii) **Financial supervision plan.** Financial supervision may be adjusted in response to project execution and the internal audit reports.

**Table 3. Financial Supervision Plan**

Nature/Scope	Frequency
Ex post review of disbursements	Twice a year
Financial audit and presentation of financial statements	Annual
Review of disbursement requests and attached reports	Twice or three times a year
Inspection visit /Analysis of internal controls and the executing agency's control environment	Annual

**7.3 Execution mechanism:** As defined in the loan proposal (Section III.A).



DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-\_\_\_/17

Paraguay. Loan \_\_\_\_/OC-PR to the Republic of Paraguay. Rehabilitation and Maintenance Project for National Route 9 and Points of Access

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the Republic of Paraguay, as Borrower, for the purpose of granting it a financing to cooperate in the execution of the Rehabilitation and Maintenance Project for National Route 9 and Points of Access. Such financing will be for an amount of up to US\$160,000,000 from the Ordinary Capital resources of the Bank, and will be subject to the Financial Terms and Conditions and the Special Contractual Conditions of the Project Summary of the Loan Proposal.

(Adopted on \_\_\_\_ 2017)

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