

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

## **PANAMA**

### **SUPPORT FOR THE DEVELOPMENT OF TERRITORIAL CONNECTIVITY IN PANAMA'S CENTRAL AND WESTERN REGIONS**

**(PN-L1147)**

#### **LOAN PROPOSAL**

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3.	<a href="#">Environmental and social management report</a>
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1.	<a href="#">Ex ante economic analysis</a>
2.	<a href="#">Technical annex to program PN-L1147</a>
3.	<a href="#">Veraguas connectivity and productivity annex</a>
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7.	<a href="#">Annual maintenance plan of the Ministry of Public Works (2016)</a>
8.	<a href="#">Climate change annex to the program</a>

## **ABBREVIATIONS**

AADT	Annual average daily traffic
B/.	Balboas
CGR	Controlaría General de la República [Office of the Comptroller General]
DNC	Dirección Nacional de Contabilidad [National Accounting Office]
ESMP	Environmental and Social Management Plan
ESMR	Environmental and Social Management Report
ICB	International competitive bidding
INEC	National Institute of Statistics and Censuses
IRR	Internal rate of return
MOP	Ministry of Public Works
NCB	National competitive bidding
RED	Roads Economic Decision [model]
TSA	Treasury Single Account
UME	Unidad de Mantenimiento por Estándares de Servicio [Unit for Maintenance through Service Standards]

## PROGRAM SUMMARY

### PANAMA SUPPORT FOR THE DEVELOPMENT OF TERRITORIAL CONNECTIVITY IN PANAMA'S CENTRAL AND WESTERN REGIONS (PN-L1147)

Financial Terms and Conditions				
Borrower: Republic of Panama			Flexible Financing Facility <sup>(a)</sup>	
			Amortization period:	20 years
Executing agency: Ministry of Public Works (MOP)			Disbursement period:	4 years
			Grace period:	4.5 years <sup>(b)</sup>
Source	Amount (US\$)	%	Interest rate:	LIBOR-based
IDB (Capital Ordinary):	87,000,000	100	Credit fee:	<sup>(c)</sup>
Total:	87,000,000	100	Inspection and supervision fee:	<sup>(c)</sup>
			Weighted average life:	12.25 years
			Approval currency:	United States dollar
Program at a Glance				
<b>Program objective/description:</b> The program's objective is to help increase productivity in the central and western regions of Panama by providing infrastructure and contributing to the development of safe, reliable, and affordable transport services, as well as ensuring that these services are available to provide access to markets and for the use of the Ngäbe-Buglé indigenous communities. Its specific objectives are to improve levels of service and make the road segments included in the program more accessible by (i) reducing average vehicle operating costs (US\$ per vehicle-kilometer) and travel times (minutes per vehicle/project); (ii) reducing the time it takes residents of Ngäbe-Buglé communities to reach basic health care services; and (iii) enhancing the managerial capacity of the MOP to establish standards related to: climate change resilient infrastructure; road safety improvement; and the integration of infrastructure into the sociocultural environment of indigenous communities.				
<b>Special contractual conditions precedent to the first disbursement of the loan proceeds:</b> the executing agency will have presented evidence that the operational units of the MOP responsible for technical, legal, financial, social and environmental management, and procurement matters have assigned the personnel needed to support the program coordination office and ensure proper execution of the program (paragraph 3.4).				
<b>Special contractual conditions for execution:</b> (i) prior to completion of the works envisaged under the program, the MOP will have included these works in the corresponding maintenance contracts by level of service once the post-execution maintenance period for the works has concluded (paragraph 3.5); and (ii) during program execution, the executing agency agrees to fulfill, to the Bank's satisfaction, the terms and conditions set out in Annex B of the program's environmental and social management report ( <a href="#">ESMR</a> ) and in its environmental and social management plan (ESMP).				
<b>Exceptions to Bank policies:</b> None.				
Strategic Alignment				
Challenges: <sup>(d)</sup>	SI	<input checked="" type="checkbox"/>	PI	<input checked="" type="checkbox"/>
Crosscutting themes: <sup>(e)</sup>	GD	<input checked="" 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 to 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 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>(d)</sup> SI (Social Inclusion and Equality); PI (Productivity and Innovation); and EI (Economic Integration).

<sup>(e)</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, and rationale

- 1.1 **Macroeconomic context.** For the past 10 years, Panama has been one of the world's fastest growing economies. Between 2010 and 2017, it achieved an average annual growth rate of 6.9%, more than double the regional average.<sup>1</sup> For 2018, its projected growth rate remains at 5.4%, the highest in Latin America,<sup>2</sup> in a context of macroeconomic stability, with moderate inflation and a fiscal deficit under control. As regards the external sector, while the current account deficit remains high (5% of GDP in 2017), it is financed by foreign direct investment. The Panamanian economy is largely dominated by the logistics and transport sector, which in 2017 accounted for 24.9% of total GDP growth,<sup>3</sup> while the agricultural sector contributed only 1%.
- 1.2 **Poverty.** Official poverty statistics in Panama show that the overall rate has fallen by 4.6%<sup>4</sup> between 2012 and 2015, which is more than in the rest of Central America,<sup>5</sup> largely as a result of the strong economic growth of the past decade. The figures for 2015 show 23% of the population—or 905,257 people—living in poverty.<sup>6</sup> Of them, 404,969 were living in extreme poverty,<sup>7</sup> that is to say, 10.3% of the Panamanian population. The situation is most dire in the indigenous regions, where 84.6% of the population lives in poverty, 65% of which in extreme poverty.<sup>8</sup> These areas typically comprise remote communities, where access to such basic services as education and health care is limited and gender inequality<sup>9</sup> blatant.
- 1.3 **Road network.** Road density in Panama (27 km per 100 km<sup>2</sup>) is higher than the average for Latin America (22 km per 100 km<sup>2</sup>),<sup>10</sup> and in terms of kilometers of paved roads per 100,000 inhabitants, Panama, with 171, performs well compared to such neighboring countries as Mexico (118), Nicaragua (54), and Guatemala (48). In Central America, it is surpassed only by Costa Rica (227).<sup>11</sup> Panama's road network<sup>12</sup> comprises 4,117 kilometers of urban roads and 15,902 kilometers of intercity roads.<sup>13</sup> Of the latter, 14,424 km are secondary and tertiary roads, 82% of which are in fair or poor condition, a fact that may have something to do with the

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<sup>1</sup> Central American average is 3.5%.

<sup>2</sup> Source: World Bank, 2018.

<sup>3</sup> Source: National Institute of Statistics and Censuses (INEC), 2017.

<sup>4</sup> Source: [Actualización de las Líneas de Pobreza](#). Ministry of Economy and Finance, 2015.

<sup>5</sup> Source: Programa de Estado de la Nación de Costa Rica, 2015.

<sup>6</sup> Poverty: monthly income per person below B/.140.52 in urban areas and below B/.105.26 in rural areas. Source: Ministry of Economy and Finance, 2015.

<sup>7</sup> Extreme poverty: monthly income per person below B/.69.33 in urban areas and below B/.59.25 in rural areas. Source: Ministry of Economy and Finance, 2015.

<sup>8</sup> The poorest part of Panama is the Ngäbe-Buglé indigenous region, with overall poverty of 93.4% and extreme poverty of 91.5%. Source: Ministry of Economy and Finance, 2015.

<sup>9</sup> Gender Inequality Index 2015: Indigenous regions, 0.8; Panama overall, 0.58; and Costa Rica, 0.34. Range: 0 – 1. Source: United Nations Development Programme.

<sup>10</sup> Economic Commission for Latin America and the Caribbean, 2014.

<sup>11</sup> Source: International Road Federation statistical data, 2014.

<sup>12</sup> Source: [National Road Maintenance Office, Ministry of Public Works](#) (2015).

<sup>13</sup> Intercity road network: 15,902 kilometers; primary roads (9%, 1,478 km); secondary roads (18%, 2,863 km); and tertiary roads (73%, 11,561 km).

country's road accident indices.<sup>14</sup> This situation is exacerbated by insufficient allocation of funds for network maintenance,<sup>15</sup> more frequent natural disasters, and failure to adapt infrastructure to the effects of climate change ([optional link 8](#)).

- 1.4 **Institutional structure of the road sector.** The MOP is the agency responsible for building and maintaining Panama's road network and managing works and services for the country's public roads infrastructure. Its functions include administering, coordinating, and supervising the formulation of policies, plans, and programs, as well as allocating budgets for the construction, inspection, and maintenance of public works throughout the country. The MOP has limited management capacity,<sup>16</sup> which is reflected, *inter alia*, in: a lack of medium- and long-term strategic plans to establish objectives and measurable results for road network construction, rehabilitation, and maintenance activities; shortcomings with respect to the planning, management, and evaluation of projects through teams or inclusive technological platforms<sup>17</sup> to generate crosscutting efficiencies in the Ministry's technical operations and budget and contract management; the lack of a road management system<sup>18</sup> (covering inventory, construction, maintenance, and conservation) and of specialized technical software; a lack of statistical information on passenger and freight transport demand;<sup>19</sup> and the failure to incorporate road safety and climate change-related disaster management in sector planning<sup>20</sup> and investment prioritization.
- 1.5 **Transport, productivity, and poverty.** The poor state of the road network (paragraph 1.3) creates a serious connectivity and accessibility problem, leaving some areas relatively isolated from the rest of the country. Despite robust investment in road infrastructure<sup>21</sup> by the Panamanian government, it is uneven due to a marked disparity in investment<sup>22</sup> (paragraph 1.8) between the area of influence of the Panama Canal, where the bulk of economic activity and the population is concentrated, and provinces in the interior of the country. This means that potentially

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<sup>14</sup> A total of 46,972 traffic accidents and 440 deaths were reported. The provinces of Panama, Chiriquí, and Veraguas have the highest rates. Source: Ground Transit and Transport Authority (ATTT), 2016.

<sup>15</sup> [IDB Policy Note on Transport and Logistics](#), 2014.

<sup>16</sup> [Panamanian Government Strategic Plan 2015-2019](#) and [MOP, 2017](#).

<sup>17</sup> According to [optional link 5](#) and [optional link 6](#), inefficiencies and reprocessing have been detected in planning, procurement management, and financial management tasks due to unintegrated independent systems for each area.

<sup>18</sup> According to [optional link 5](#) and [optional link 6](#), opportunities for improvement have been identified in the technical monitoring conducted by the maintenance and inspection offices, through an integrated management system, engineering licenses, and technical teams for in-office and onsite monitoring.

<sup>19</sup> Information needed for the design of the road paving structures required for projects and for the development of maintenance policies.

<sup>20</sup> [Evaluación del Estado de la Reducción del Riesgo de Desastres en Panamá](#). United Nations, 2014.

<sup>21</sup> Panama increased its investment in the road sector between 2008 and 2015, more than doubling it as a percentage of GDP (from 0.85% of GDP in 2008 to 1.91% in 2015). In so doing, it has become one of the region's leading investors in roads (Infralatam, 2018).

<sup>22</sup> MOP budget appropriations in 2014 show that the provinces of Panamá, Colón, and Panama Oeste received almost 88% of the funds, while the provinces of Chiriquí, Veraguas, and the Ngäbe-Buglé region received just 4.4%, 0.4%, and 0.3%, respectively. As of September 2017, the figures reflect allocations of 9.3%, 7.7%, and 1.2%, respectively. Between 2016 and 2017 in those provinces, the MOP's provincial and regional offices executed only 19.1% (B/.18.14 million) of the national budget available (B/.91.89 million) for road maintenance and rehabilitation. Source: [MOP Annual Report 2017-2018](#).

- highly productive areas are hard-hit because the growth of such sectors as agriculture and livestock is hampered by the lack of connectivity and poor state of the roads connecting to the main highways and distribution and consumption hubs.<sup>23</sup> (paragraph 1.11).
- 1.6 The lack of road connectivity also limits the rural population's access to basic services, such as health care and education. In Panama, this constraint is exacerbated in the poorest areas (indigenous regions)<sup>24</sup> (paragraphs 1.2 and 1.14), where the road network amounts to less than 4.1%<sup>25</sup> of the national total and 61% of it is unpaved and therefore impassable during the rainy season.
- 1.7 **The problem and its consequences.** The problem this program addresses is the limited access<sup>26</sup> and low connectivity of the road network in rural areas of Panama's central and western regions (paragraph 1.11) due to the poor state of the network, which reduces both the supply and quality of transport services;<sup>27</sup> increases travel times and operating costs; hampers the development of productive activities<sup>28</sup> in the agriculture, commercial, and services sectors; and restricts access by the rural population, particularly the indigenous population, to basic goods and services in education<sup>29</sup> and health,<sup>30</sup> exacerbating poverty rates<sup>31</sup> in the most isolated communities.
- 1.8 **Causes of the problem.** One of the main causes of the poor quality of road infrastructure (paragraph 1.3), has been scant investment in rehabilitation and maintenance, especially in the central and western regions of Panama (paragraphs 1.5, 1.13, and 1.14). Adding to the problem are the impacts of climate change on infrastructure that is vulnerable to natural disasters (paragraph 1.10) and not built to be resilient. This has grave consequences in terms of availability,<sup>32</sup>

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<sup>23</sup> [Sustainable Development Plan, Veraguas](#), IDB (2007), pages 35 and 111; and [Master Plan for Agriculture in the Western Region 2017-2024](#).

<sup>24</sup> [Diagnóstico Situacional y Plan de Salud para los Pueblos Indígenas de Panamá 2008-2010](#) and [Plan de Desarrollo Integral de Pueblos Indígenas de la República de Panamá](#) (DIPORP, 2015).

<sup>25</sup> Source: [National Road Maintenance Directorate, MOP](#).

<sup>26</sup> Limited access is understood to mean the interruption or lack of adequate conditions for the movement of people and freight for economic purposes and of access to public and social services.

<sup>27</sup> In the Ngäbe-Buglé region's Besikó district, between San Juan and Alto Potrero/Camarón Arriba, the supply of pickup trucks for transporting passengers (15-20 passengers per truck) and merchandise, is limited to 10 vehicles making four trips per day, at a cost of between US\$2.50 and US\$3.00 per trip ([optional link 1](#)).

<sup>28</sup> Surveys of farmers in the Mariato district show that nine (23%) have suffered losses averaging 11%, due to the deterioration of perishable produce during transport, owing to the poor condition of the road (paragraph 1.19).

<sup>29</sup> Forty-eight percent of males and 62% of females in the student population surveyed in the area of influence of rural roads in the Ngäbe-Buglé region's Besikó district (paragraph 1.20) get to education centers either on foot or on horseback, taking on average 81 minutes.

<sup>30</sup> Twenty-five percent of the men and 47% of the women surveyed in the area of influence of roads in the Ngäbe-Buglé region's Besikó district (paragraph 1.20) get to health care posts (Camarón Arriba, Lajero, and San Juan) on foot or on horseback, taking on average 128 minutes.

<sup>31</sup> Thaddeus S., Maine D. [Too Far to Walk: Maternal Mortality in Context](#). New York: Center for Population and Family Health, Columbia University School of Public Health, 1990.

<sup>32</sup> A report by the Risk Management Department of the Municipality of Mariato states that in 2017 there were floods and landslides at 50 points on the Atalaya-Mariato-Quebró-Flores-Varadero corridor, resulting in losses of rice and livestock production and 8 to 15 days of road closures ([optional link 8](#)).



accessibility of production and consumption hubs to the country's main logistics assets, and access to basic services (paragraphs 1.7 and 1.11).

- 1.9 **Empirical evidence of the benefits of road improvement.** International evidence shows that investment in improving the quality and connectivity of transport infrastructure triggers positive economic and social impacts, by reducing travel costs and times, as well as operating costs, and by facilitating producers' access to new markets. Some of the Bank's own studies and programs have yielded [lessons learned](#) and empirical evidence of such impacts. In Nicaragua,<sup>33</sup> thanks to investments in rural roads in the departments of Chontales and Río San Juan, between 2006 and 2011, agricultural output increased from 34,600 tons per year to 90,330 tons per year, while fisheries production increased from 750 tons per year to 997 tons per year. Other studies in Nicaragua show how, as a result of road improvements in some rural areas,<sup>34</sup> the use made of health and educational facilities increased, as did the overall well-being of beneficiaries, with shorter travel times, improved transportation services, and better education and health indicators.<sup>35</sup> In terms of social impacts, improving rural roads in Peru increased school attendance among adolescent boys (12 to 18 years of age) and girls (6 to 11 years of age) by approximately 7%.<sup>36</sup> Likewise, the [impact assessment](#) of the Decentralized Rural Transport Program in Peru (loan [1810/OC-PE](#)) shows how the rehabilitation of local roads helped reduce extreme poverty by 10 percentage points and poverty due to unmet basic needs by seven percentage points. As regards the effectiveness of such interventions in Panama, so far there have been no impact assessments. Accordingly, the program envisages conducting an innovative impact assessment using big data, which will make it possible to measure changes that can be attributed to the prioritized interventions (paragraphs 3.12, 3.13, and [required link 2](#)).
- 1.10 **Vulnerability of transport infrastructure to the effects of climate change.** Panama is 14th on the global list of countries most exposed to natural hazards, including the hydrological hazards subject to the effects of climate change.<sup>37</sup> Twelve percent of the population is considered vulnerable to two or more hazards and 15% of the country is exposed to natural disasters capable of inflicting severe socioeconomic damage.<sup>38</sup> Chiriquí, Veraguas, and the Ngäbe-Buglé region are among the provinces most vulnerable to floods and landslides in which increased rainfall due to climate change is projected (+2.5 millimeters per day by 2020<sup>39</sup>) ([optional link 8](#)). Institutionally (paragraph 1.4), there are [governance](#) constraints to

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<sup>33</sup> Project completion report (loan 1796/SF-NI).

<sup>34</sup> [Nicaragua Poverty Assessment: Challenges and Opportunities for Poverty Reduction](#). World Bank (2000).

<sup>35</sup> Source: [General Study of the Impact of Rural Roads in Nicaragua](#). OECD, COWI Consulting, June 2008.

<sup>36</sup> Valdivia, Martín. *Contracting the Road to Development: Early Impacts of a Rural Roads Program*. February, 2009.

<sup>37</sup> World Bank. [Natural Disaster Hotspots: A Global Risk Analysis](#).

<sup>38</sup> It is estimated that the annual cost of recurrent events ranges between B/.125 million and B/.150 million (0.36% to 0.42% of GDP). Panamanian Government Strategic Plan 2015-2019.

<sup>39</sup> +5mm/day by 2050 and +10mm/day by 2080.

strengthening disaster risk reduction by incorporating it into sectoral planning as an investment prioritization tool in the agriculture or transport and logistics sectors.<sup>40</sup>

- 1.11 **Regional connectivity.** The National Freight Logistics Plan 2014-2024 and the [National Logistics Strategy 2030](#) establish that the regions with the greatest agricultural and interconnectivity potential in Panama are: (i) the western region, which includes the productive area of Chiriquí province; and (ii) the central region, containing the productive area of Veraguas province, shown in Figure 1 ([optional link 3](#)). Among the main weaknesses with respect to developing the agriculture and tourism sectors, these documents underscore the limited overland access to some areas of the country (Veraguas and Ngäbe-Buglé) due to the poor state of secondary and tertiary roads (paragraphs 1.13 and 1.14), and the resulting inefficiencies in the transport of production in the area between Santiago and further south on the Azuero Peninsula ([optional link 2](#)).

Figure 1. [Regional connectivity](#)



Source: National Freight Logistics Plan 2014-2024.

- 1.12 **Pan-American Highway.** The Pan-American Highway crosses the country from east to west, connecting Darién province with Central America through the border crossing with Costa Rica, at Paso Canoas. The highway's Panama segment measures a total of 708 kilometers,<sup>41</sup> accounting for 85% of traffic flows with the region and 99% of Colón Free Trade Zone freight bound for Central America.<sup>42</sup> Improving the Pan-American corridor is undoubtedly a priority for the MOP, which in recent years has been implementing a major updating and maintenance program ([optional link 7](#)) all along the highway, since specific segments do not meet the

<sup>40</sup> [Evaluación del Estado de la Reducción del Riesgo de Desastres en la República de Panamá](#). United Nations (2014).

<sup>41</sup> Source: MOP. Description of the road network in Panama, 2015.

<sup>42</sup> [National Freight Logistics Plan of Panama, 2014-2024](#).

design standards required for freight transport, road safety, and resilience to natural disasters and the effects of climate change, primarily certain bridges<sup>43</sup> in Chiriquí province.

- 1.13 **Road network in the province of Veraguas.** Veraguas encompasses an area of 11,239 square kilometers (15% of Panamanian territory) and, as of 2016, had some 245,000 inhabitants, approximately 7% of country's total population. In terms of its economic structure, the province has traditionally focused on agriculture, growing mainly sugarcane and rice and raising livestock in the central part of the province, particularly in the Atalaya and Mariato districts. The province accounts for 21% of Panama's rice production<sup>44</sup> and 17% of the country's cattle.<sup>45</sup> The area is also apt for developing tourism ([optional link 3](#)) with features that could allow it to sustain ecotourism, seaside tourism, and fishing. As for road infrastructure, Veraguas<sup>46</sup> province has 3,462 kilometers of roads,<sup>47</sup> or 21.8% of the national road network. Of those, 13% (450 km) are made of asphalt or concrete and the remainder (3,012 km), are dirt roads with some type of coating or surface treatment, almost all (94%) of the latter being in fair or poor condition.
- 1.14 **Rural roads in the Ngäbe-Buglé region.** The Ngäbe-Buglé is Panama's most impoverished region. It has a population of approximately 155,000,<sup>48</sup> most of whom are members of indigenous communities with little coverage of basic services and poor quality transport infrastructure, both of which negatively impact living conditions, especially for women.<sup>49</sup> For the most part (64.2%), the lack of access to health services is due to distance; lack of transportation services is another factor (44.7%). This situation means that travel times and the shortage and high cost of transport services<sup>50</sup> are among the main reasons for lack of access to educational<sup>51</sup> and health<sup>52</sup> services: decisive factors for maternal and child mortality indices and poverty rates (paragraph 1.2 and [optional link 4](#)). There is an enormous gap between maternal and child mortality indicators among the indigenous population and those for the rest of the population. In 2008, maternal mortality in the region was

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<sup>43</sup> In 2011, a [strong storm](#) with records levels of rainfall exceeding the recurrence interval (200 years) caused the collapse of the bridge over the Chico River on the Pan-American Highway that carried traffic from David to Canoas, leaving the other bridge passable but exposed to a risk zone due to new avenues. Source: Report of the National Civil Defense System, October 2017.

<sup>44</sup> Rice production totals 22,280 tons ([optional link 3](#)). Economically, one of the dominant factors in the costs basket is transport (US\$1.08 /vehicle-kilometer) with an average travel time of 153 minutes ([optional link 1](#)).

<sup>45</sup> [INEC](#), 2016.

<sup>46</sup> [Caracterización de la Red Vial de Panamá](#), op. cit., MOP 2016.

<sup>47</sup> Tertiary (84.2%) and secondary (10.1%) networks.

<sup>48</sup> Fifty-one percent women and 49% men. *Censos2010.gop.pa* (ed.). "*Censos nacionales 2010*". Archived since the original on 11 June 2010.

<sup>49</sup> According to the Strategic Plan for the Ngäbe-Buglé region (2008), women are among the most vulnerable groups in terms of inequality and inequity, with respect to differences in the opportunities open to them in society and the distribution of such key factors as education and control over income, physical assets, and productive resources.

<sup>50</sup> Average vehicle operation cost: US\$1.52/vehicle-kilometer and average transit time for the San Juan-Alto Potrero sub-segment: 114 minutes ([optional link 1](#)).

<sup>51</sup> Illiteracy rate: 30.2% (35.1% men and 64.9% women).

<sup>52</sup> Average travel times to: (i) health posts (Camarón Arriba, Lajero, and San Juan): 109 minutes; and (ii) the San Félix Regional Hospital: 150 minutes ([optional link 1](#)).

34.5 deaths per 1,000 live births, compared to the national figure of one death per 1,000 live births. Child mortality in the region is 43.4%, compared to the national figure of 16.4%. In 2016, the region's road network, consisting entirely of tertiary roads, comprised 574.6 kilometers, or 3.6%<sup>53</sup> of the national total, and only 5% of that network is considered to be in good condition. Of this network, 61% (350.9 km) are dirt roads that are impassable during the rainy season, 34.4% (197.6 km) have had surface treatments, and only 4.5% (26 km) have been surfaced.

- 1.15 **Rationale.** By building infrastructure along the Pan-American corridor in the province of Chiriquí, rehabilitating secondary roads in the province of Veraguas, and improving rural roads in the Ngäbe-Buglé region, the program will help raise productivity<sup>54</sup> in intervention areas, in addition to enhancing the well-being of the population by reducing travel times, developing transport services, and increasing rural communities' access to basic public services. The proposed interventions will also serve to build MOP capacity (paragraph 1.4) through the incorporation of management systems and better standards related to: (i) climate change-resistant infrastructure,<sup>55</sup> including the development of vulnerability analysis methodologies<sup>56</sup> and prioritization of investments in road management; (ii) the improvement of road safety standards for the infrastructure built; (iii) integration of infrastructure with the sociocultural environment of indigenous rural communities; and (iv) the generation of guidelines and best practices for planning and road management.
- 1.16 This program is consistent with the Panamanian Government Strategic Plan 2015-2019, with respect to: (i) facilitating access to production and tourism areas in the country's western and central regions, through investments in the secondary and tertiary road networks; (ii) improving access to basic services for the indigenous regions; (iii) strengthening MOP planning and road management processes; and (iv) enhancing the availability of roads by increasing their resilience to the effects of natural disasters and climate change. Financed by the IDB, the [National Logistics Strategy 2030](#) established as one of its strategic objectives to improve the road network with a view to reducing operating costs and times, especially roads providing support to agriculture, and to provide basic road accessibility to the logistically less integrated parts of the national territory and guarantee good accessibility and overland connectivity between the country's logistical assets. The strategy is aligned with and complements the interventions envisaged in the [Strategic Plan for the Integral Development of the Ngäbe-Buglé Region, 2014-2029](#), in which one of the priority objectives it to develop and improve its road network<sup>57</sup> and interconnect it with the national network.

<sup>53</sup> Of the remainder, 19.6% (113 km) is in fair condition and 75.4% (433 km) in poor condition. MOP, 2016. Annual Maintenance Plan 2015.

<sup>54</sup> Productivity index: Chiriquí province (58); Veraguas province (32); national average (100); Panama province (123); no comparative data available for the indigenous region.

<sup>55</sup> Resilient infrastructure means infrastructure designed, built, and operated in such a way as to withstand natural disasters and the adverse effects of climate change (e.g. increased precipitation and rising temperatures).

<sup>56</sup> Blue Spot analysis of vulnerability to extreme climate in a context of Decision Making Under Deep Uncertainty [DMDU] or Robust Decision Making [RDM]), geared to identifying and prioritizing critical interventions within a road network or system in order to make the transport sector more resilient.

<sup>57</sup> The Panamanian government has invested US\$172.9 million in the construction or rehabilitation of 36 kilometers of highways, 207 kilometers of rural roads, and 22 bridges in this region.

- 1.17 **Proposed solutions.** The [three interventions](#) envisaged are located in the western and central regions of Panama ([optional link 2](#)). The MOP regards them as vital for meeting the goals established in the Panamanian Government Strategic Plan 2015-2019 (paragraph 1.16), since they are located in three areas of key national importance: (i) on the country's main connectivity corridor (paragraph 1.12); (ii) in one of the areas with greatest productive potential (paragraph 1.13); and (iii) in the region with the highest poverty rates (paragraphs 1.14 and 1.2).

Figure 2. [Project sites](#) of operation PN-L1147



Source: Panamanian Government Strategic Plan 2014-2024.

- 1.18 The first project concerns the construction of a 122-meter [second bridge over the Chico River](#), on the Pan-American Highway. With support from Bank program 1785/OC-PN-1, construction of the first bridge (which carries traffic in the direction from David to Paso Canoas) was completed in 2015. The second bridge, carrying traffic in the direction from Paso Canoas to David, is operational but its foundations in the river bed are in a [risk zone](#) vulnerable to new exceptional climate events and consequent surges in river water levels. Its elevation is below that of the new bridge, leaving a smaller section free and limiting its hydraulic capacity. Social and environmental considerations with regard to this work include facilitating access to the Pan-American Highway for properties located on the right side of the bridge (via an alternative road) and relocating existing bus stops and pedestrian pathways to guarantee the safety of pedestrians crossing the road in this area. In addition, the designs for the bridge will include parameters for increasing its resilience to disaster risks and climate change (paragraph 1.25).



- 1.19 The second intervention is the rehabilitation of the [Atalaya-Mariato-Quebró-Flores corridor and Varadero feeder road](#), in the province of Veraguas, on the Azuero Peninsula. The Atalaya-Flores segment is a 102.2-kilometer paved secondary road, whereas the feeder road to Varadero is an 11.06-kilometer tertiary road. The total length of the roads involved in this intervention is therefore 113.26 kilometers. For the most part, this segment is an undivided highway with surface deterioration in some sections and numerous potholes and depressions in some areas. Parts of this segment are vulnerable to flood risk, meaning that they may not always be available for use ([optional link 8](#)). There are no covered road drains, road signs and pavement markings are deficient, and there are no widening tracks at reduced speed curves. The intervention will include, *inter alia*: (i) elements for the design and inspection/auditing<sup>58</sup> of road safety, so as to improve conditions for motorists and pedestrians/cyclists, especially on urban access roads; and (ii) parameters for increasing infrastructure resilience to disaster risks and climate change (paragraph 1.25).
- 1.20 The third project concerns the rehabilitation and improvement of [rural roads](#) in the Besikó district<sup>59</sup> in the Ngäbe-Buglé region. [The road forms a “Y”](#), measuring approximately 5 meters wide and a total length of 22.90 kilometers. The first 5.4-kilometer segment, which runs to the apex of the “Y” at Quebrada Hacha, consists of a worn asphalt road. The remainder consists of two badly worn dirt branch roads with longitudinal draining that is either insufficient or in poor condition, which renders the road impassable during the rainy season, hindering the population’s access to education and health services. The intervention envisages road improvements that include resilience parameters, hydraulic works, two bridges, and the incorporation of ethno-engineering features in keeping with the sociocultural characteristics of the community (paragraph 1.25). With respect to the later, these include urban designs using stones from local rivers, colors and symbols pertaining to the Ngäbe-Buglé world view and spirituality, and paths for pedestrians and animals alongside the road to accommodate the local custom of getting around on horseback.
- 1.21 **Bank sector knowledge and lessons learned.** In recent years, the Bank has played an active part in supporting the Panamanian government in the transport and logistics sector, as a result of which it has acquired sector experience and knowledge. The Puebla Panama Plan Multiphase Road Infrastructure Program to Enhance Competitiveness (operation 1785/OC-PN) has not only addressed investment needs for rehabilitating the country’s priority highways, it has also served, along with other actions, to make changes to the procedures for ensuring sustainable maintenance of infrastructure, by establishing and strengthening the Unit for Maintenance through Service Standards (UME) in the Maintenance Division

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<sup>58</sup> During the final design and infrastructure construction phase.

<sup>59</sup> A project prioritized in the [Strategic Plan for the Integral Development of the Ngäbe-Buglé Region, 2014-2029](#). As one of the Bank’s main infrastructure projects in this region, it complements its support with support for other social development projects: (i) school construction, through the Innovation in School Infrastructure Program (loan 2734/OC-PN); and (ii) intervention in health centers through the Integrated Health Service Networks Strengthening Program (loan 3615/OC-PN). The task of harmonizing the economic and social development of this region—which is characterized by difficult access and a severe lack of basic services—while duly preserving its sociocultural values, is one of this project’s main challenges.

of the MOP. This program has taken stock of the lessons learned as well as the fiduciary and technical recommendations of the Institutional Capacity Assessment System (ICAS) evaluation ([optional link 5](#) and [optional link 6](#)).

**Table 1. Bank sector knowledge and lessons learned**

Lesson learned	Actions considered in the operation
Delays in formulating and drawing up designs cause delays in execution	Identification of technical and socioenvironmental considerations in the project design phase, <sup>60</sup> prior to calling for bids
The MOP needs to guarantee the availability of resources for adequate maintenance of works after they have been completed	Inputting works in the MOP's maintenance management system, in accordance with the particular characteristics of the road (paragraph 2.8)
Shortcomings in the institution's integrated processes for strategic planning make it difficult to schedule activities and hinder timely decision-making within the program	Inclusion of a project management system and module-based platform covering strategic, budgetary, operational, and investment planning

- 1.22 The Bank has also contributed to improvements in Panama's logistical performance through the policy-based loan "Support for Panama's Transport and Logistics Sector Reform Program" (loans 3486/OC-PN, 3675/OC-PN, and operation PN-L1151), which has served to consolidate the logistics strategy and implementation of concrete measures in regulatory and institutional aspects and in investments in transport infrastructure. The recent approval of the "Customs Logistics Integration Program" ([4517/OC-PN](#)) will help improve Panama's logistics sector by modernizing fiscal oversight processes, technology, infrastructure, and equipment at border crossings. The Bank also has experience with road improvement projects in indigenous communities,<sup>61</sup> and specifically with productive and social infrastructure projects in indigenous regions of Panama.<sup>62</sup>
- 1.23 **Strategic alignment.** The operation is consistent with the IDB Country Strategy with Panama 2015-2019 (document GN-2838), given the priority the government attaches to enhancing competitiveness and fostering social inclusion within the framework of a sustainable and inclusive development model, with the strategic objective of deepening logistics services, efficiency, and the connectivity of productive infrastructure. Specifically, it will contribute to the improvement, rehabilitation, and maintenance of the rural road network by increasing the percentage indicator in kilometers of the rural road network in optimal working condition. The program is also consistent with the Update to the Institutional Strategy 2010-2020 (document AB-3008) and strategically aligned with the development challenges of: (i) productivity and innovation, based on the criterion that infrastructure and appropriate, reliable, and affordable public services must be

<sup>60</sup> The Bank provides support to the MOP with the preparation of pre-feasibility studies and bidding documents for the three projects.

<sup>61</sup> Improvement of the Huánuco-Conococha Highway (3881/OC-PE). Peru's [FONCODES III](#) program (1421/OC-PE): financed the construction of 900 paths in indigenous communities; Perafán et al. "[Guías de etnoingeniería](#)." IDB (2005).

<sup>62</sup> Unified Program for Drinking Water and Sanitation in Provinces (2025/OC-PN), Innovation in School Infrastructure Program (2734/OC-PN), and Educational Facilities Program (2462/OC-PN).

- provided; and (ii) social inclusion and inequality, through improvements to road infrastructure that facilitate access by a primarily poor population to essential public and social services (paragraph 1.14). The program is strategically aligned with the crosscutting themes of: (i) gender equality and diversity in that it seeks to improve the quality of infrastructure and other public services provided to indigenous communities; and (ii) climate change and environmental sustainability, in that it seeks to enhance the resilience of road infrastructure to natural disasters and the effects of climate change. Approximately 1.28% of the operation's resources are invested in adaptation to climate change activities, according to the [joint methodology of the multilateral development banks for tracking climate change adaptation finance](#). These resources contribute to the IDB Group target of increasing financing for climate-related projects to 30% of approvals by the end of 2020. In addition, the program will contribute to the Corporate Results Framework 2016-2019 (document GN-2727-6) through the following output indicators: kilometers improved and/or rehabilitated, and climate change adaptation financing.
- 1.24 The program is consistent with the Transportation Sector Framework (document GN-2740-7), by contributing to the first dimension of success, which consists primarily of supporting the region's efforts to improve infrastructure coverage, capacity, quality, and connectivity. The program contributes to the first dimension of success of the Climate Change Sector Framework (document GN-2835-3), regarding increased resilience of infrastructure to disaster risks and climate change. Likewise, the program is aligned with the Sustainable Infrastructure for Competitiveness and Inclusive Growth Strategy (document GN-2710-5) and its strategic principle of planning, building, and maintaining infrastructure in order to provide quality services that promote sustainable and inclusive growth.
- 1.25 **Program's value added.** Apart from addressing the problems described above (paragraphs 1.7, and 1.10 through 1.14) and contributing to the institutional strengthening of the MOP, this operation includes elements of additionality that enhance the approach to sustainable development that both the Bank and the MOP view as essential: (i) the building of infrastructure that is resilient to climate change, by including<sup>63</sup> in the designs of the works specific hydrological and hydraulic models that set the parameters for designing drainage works, structures, and bridges (paragraphs 1.18 and 1.19); (ii) improvement of road safety parameters and standards in the design of the highways included in the program, by incorporating inspections and audits during the construction phase; and (iii) integration of infrastructure with the sociocultural environment of indigenous rural communities, by incorporating ethno-engineering features<sup>64</sup> (paragraph 1.20).
- 1.26 **Technical cooperation in support of the program.** The Bank approved nonreimbursable technical cooperation operation ATN/OC-16651-PN to strengthen the technical and operational capacity of the program coordination office during the works structuring, contract management, and financial management phases as well

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<sup>63</sup> Application of the disaster risk methodology, based on Operational Policy OP-704. See step 3.2.3 of [optional link 8](#).

<sup>64</sup> IDB. [Guías de etnoingeniería](#). Washington D.C., 2005. These guidelines establish participatory methodologies for ensuring the cultural appropriateness of infrastructure works in local communities, at both the design and maintenance phases.



as that of the inspection teams. It includes: (i) the formulation of guidelines regarding execution arrangements, agreements and requirements for procurement execution, financial management, tracking, monitoring, and oversight activities, as well as the terms and conditions established in the [ESMR](#) and ESMP; (ii) supplementary technical and fiduciary personnel to assist with capacity-building of staff assigned by the MOP in the respective technical and operational units (paragraph 3.2); and (iii) the carrying out of the program impact assessment (paragraphs 3.12 and 3.13) and the associated methodological training in the MOP.

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

- 1.27 **Program objective.** The program's objective is to help increase productivity in the central and western regions of Panama by providing infrastructure and contributing to the development of safe, reliable, and affordable transport services, as well as ensuring that these services are available to provide access to markets and for the use of the Ngäbe-Buglé indigenous communities. Its specific objectives are to improve levels of service and make the road segments included in the program more accessible by (i) reducing average vehicle operating costs (US\$ per vehicle-kilometer) and travel times (minutes per vehicle per project); (ii) reducing the time it takes residents of Ngäbe-Buglé communities to reach basic health care services; and (iii) enhancing the managerial capacity of the MOP to establish standards related to: climate change resilient infrastructure; road safety improvement; and the integration of infrastructure into the sociocultural environment of indigenous communities.
- 1.28 **Program beneficiaries.** The [environmental and social impact assessment](#) and the sociocultural impact study ([optional link 4](#)) found that some 17,500 individuals would benefit from the program in the Atalaya-Mariato-Quebró-Flores project area, a figure which would increase at an annual rate of 1.96%. They also identified some 21,000 indirect beneficiaries, specifically, the nearly 917 rice-growing families and the 52 producers that process and distribute the rice (paragraph 1.40 and [optional link 3](#)). These figures will vary depending on the volume of the floating population, stemming principally from an increased influx of tourists as a result of improved access. In the case of the rural roads in the Besikó district, the direct beneficiary<sup>65</sup> population consists of some 8,000 people, while the indirect beneficiaries, who reside in settlements within the roads' area of influence, number about 12,000. As the program's executing agency, the MOP will be the government agency benefiting from the program's institutional strengthening activities thanks to the introduction of technological instruments that will build its management capacity in the provision of infrastructure and transport services (paragraph 1.4).
- 1.29 **Component 1. Rehabilitation and/or improvement of road infrastructure (US\$84.63 million).** This component will finance the following projects:
- 1.30 **Subcomponent 1.1. Construction of a second bridge over the Chico River (US\$7.79 million).** This subcomponent will finance the construction of a second bridge (122 meters) over the Chico River on the Pan-American Highway in Chiriquí province, to carry traffic from Paso Canoas to David (paragraph 1.18).

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<sup>65</sup> Municipalities of Camarón Arriba, Námnoní, and Cerro Patena.

- 1.31 **Subcomponent 1.2. Rehabilitation of the Atalaya-Mariato-Quebró-Flores corridor and Varadero feeder road (US\$60.74 million).** This subcomponent will finance the rehabilitation of the Atalaya-Mariato-Quebró-Flores corridor and Varadero feeder road (113.26 km) in Veraguas province (paragraph 1.19).
- 1.32 **Subcomponent 1.3. Rehabilitation and upgrading of rural roads in the Besikó district (US\$16.10 million).** This subcomponent will finance rehabilitation and upgrading of 22.90 kilometers of rural roads in the Besikó district of the Ngäbe-Buglé indigenous region, to include the construction of bridges (paragraph 1.20).
- 1.33 The projects envisaged include road security, disaster risk-reduction, and climate change-adaptation measures (paragraph 1.10), as well as ethno-engineering features (in the Ngäbe-Buglé indigenous region), and implementation of the ESMP (paragraph 2.3) ([optional link 2](#)).
- 1.34 **Component 2. MOP capacity building (US\$2.17 million).** This component will finance studies and technical tools to support institutional management in the MOP. It includes:
  - 1.35 **Subcomponent 2.1. Digital transformation of the MOP (US\$1.41 million).** This subcomponent will support the MOP with the implementation of technological tools for: conducting inventories and managing and maintaining its road assets; purchasing software, licenses, and developing investment planning and prioritization methodologies;<sup>66</sup> and instituting project management and document management systems.
  - 1.36 **Subcomponent 2.2. Goods and equipment (US\$175,000).** This subcomponent will provide physical support to the MOP by financing the purchase of information technology items, such as laptops, Global Positioning System devices, and audiovisual and transportation equipment.
  - 1.37 **Subcomponent 2.3. Preinvestment and technical assistance (US\$585,000).** This subcomponent will provide support in the form of financing for preinvestment studies of projects to be prioritized by the MOP as part of its sector strategy; the review and updating of environmental and social procedures manuals, to include cultural diversity and gender considerations; and technical and socioenvironmental assistance and training activities ([required link 4](#)).
- 1.38 **Administration and management (US\$200,000).** This will finance the program's financial audit (paragraph 3.10) and monitoring and evaluation activities ([required link 1](#)).
- 1.39 **Costs.** The total cost of the program is US\$87 million, to be fully financed from the Bank's Ordinary Capital resources. The following table provides a breakdown of costs by investment category.

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<sup>66</sup> Including decision-making in uncertain scenarios. See point 4 of [optional link 8](#).

**Table 1. Program financing (US\$)**

Program	IDB Total (Ordinary Capital)
<b>Component 1. Rehabilitation and/or improvement of road infrastructure</b>	<b>84,630,000</b>
1.1 Construction of a second bridge over the Chico River	7,790,000
1.2 Rehabilitation of the Atalaya-Mariato-Quebró-Flores corridor and Varadero feeder road	60,740,000
1.3 Rehabilitation and upgrading of rural roads in the Besikó district	16,100,000
<b>Component 2. MOP capacity building</b>	<b>2,170,000</b>
2.1 Digital transformation of the MOP	1,410,000
2.2 Goods and equipment	175,000
2.3 Preinvestment and technical assistance	585,000
<b>Administration and management</b>	<b>200,000</b>
Program audit	150,000
Monitoring and evaluation	50,000
<b>Total</b>	<b>87,000,000</b>

### C. Key results indicators

- 1.40 The main results anticipated for the road segments included under the program are: reduced travel times and costs for both passenger and freight transport; lower operating costs for the vehicles using these roads; and increased freight and passenger traffic. For the province of Veraguas, the impacts in terms of the region's connectivity to national productive markets are associated with increased rice production in the program area of influence.<sup>67</sup> With respect to MOP capacity building, the number of projects that include additionality is expected to increase (paragraph 1.25). These outcomes and impacts are listed in the results matrix ([Annex II](#)), where the baseline is the benchmark for program evaluation, whereas the outcome and output indicators will be corroborated through valid means of verification.
- 1.41 **Program technical and economic viability.** An ex ante economic analysis was conducted ([optional link 1](#)) to calculate the cost/benefit and internal rate of return (IRR), using the Highway Development and Management Model Version 4 (HDM-4) and Roads Economic Decision Model (RED), to compare the economic flows identified without the program (counterfactual exercise) and with the program. The analysis of program projects using a discount rate of 12% under base scenario conditions and assumptions yielded an IRR of 18%. The robustness of the program vis-à-vis less favorable scenarios was ascertained by conducting a sensitivity analysis that combined a 10% increase in the investment cost with a simultaneous reduction of 34.9% in the rate of traffic growth, which found that the economic net present value is above zero with an IRR of 13.2%.

<sup>67</sup> Atalaya and Mariato districts.

## II. FINANCING STRUCTURE AND MAIN RISKS

### A. Financing instruments

- 2.1 The program is an investment loan totaling US\$87 million. Basic preinvestment studies exist for each of the projects<sup>68</sup> and the average duration of the works is two years. The MOP has sufficient capacity and [experience](#) with similar projects and there is an ample construction company market in Panama in a position to execute these kinds of projects. Consequently, an execution period of four years is deemed adequate.
- 2.2 The disbursement period is four years from the date the respective contract enters into effect, pursuant to the following schedule and in accordance with the established financial plan ([required link 2](#)).

Table 2. Tentative disbursement schedule (US\$ thousand)

Source	2018	2019	2020	2021	2022	Total
IDB	2,300	31,190	42,933	10,402	175	87,000
Total	2,300	31,190	42,933	10,402	175	87,000

### B. Environmental and social risks

- 2.3 In accordance with the IDB's Environment and Safeguards Compliance Policy (Operational Policy OP-703), this operation was classified under category "A" due to the potential adverse impacts and risks for the indigenous population in the area of influence in the Ngäbe-Buglé region ([optional link 4](#)), and due to minor impacts on plots of land currently used for agricultural activities that encroach on narrow stretches of the rights-of-way.<sup>69</sup> Also identified were the risks and potential socioenvironmental impacts that could arise during the construction and operational phase of program works ([environmental and social impact assessment](#)<sup>70</sup>). The measures identified to prevent and mitigate the various risks and adverse impacts included: (i) the elaboration of a sociocultural study ([optional link 4](#)), pursuant to Operational Policy OP-765, which confirmed the vulnerability of the indigenous population in the Ngäbe-Buglé region, whose members, with the exception of coffee and rice growing, are almost exclusively engaged in subsistence agriculture on collectively owned land or individual use/usufruct plots and for the most part (96%) live in poverty (paragraph 1.2). No direct impact entails involuntary resettlement due to physical displacement. The impacts identified relate to changes in land use, to be mitigated by means of a livelihood restitution plan in compliance with Operational Policy OP-703; and (ii) for all program works, an [ESMP](#) was prepared that includes the measures and best practices recommended for these kinds of infrastructure works, including identification of those responsible and the budget for implementing them. At the same time, to comply with Operational Policies OP-765 and OP-703,

<sup>68</sup> Calls for tenders are scheduled to begin in the second half 2018.

<sup>69</sup> According to the basic technical design, they are minor and located in seven sports, evaluated on a case-by-case basis, without direct adverse impacts due to changes in cultural land uses.

<sup>70</sup> Published on March 8, 2018.

the culturally appropriate and meaningful consultations conducted (see [environmental and social impact assessment](#) for further details) confirmed that there is: (i) evidence of the need for and a request for improvement of the roads by the community, as well as opportunities to find technical solutions that incorporate ethno-engineering components in the region (paragraph 1.20); (ii) shared consent to the intervention and confirmation that the participation of men and women from the communities should continue during the project cycle; and (iii) solutions to indirect impacts identified by the population (mainly in road safety and road signs). Moreover, the disaster risk of the operation was identified as moderate, since the works may be exposed to landslides and flooding due to the type of soil and prolonged rainy seasons.

### **C. Fiduciary risks**

- 2.4 A risks workshop for the program was conducted during the design phase, with the participation of the project team and the entities involved. It concluded that, in fiduciary matters with respect to both procurement and financial management, the risk of delays in program execution was considered “medium,” due to shortcomings in the administrative and financial management capacity of the program coordination office.
- 2.5 Based on the findings of the institutional capacity analysis ([optional link 5](#)), it was ascertained that the personnel assigned to the program needs to be more familiar with implementation of the Bank’s financial and procurement policies and instruments, as a measure to mitigate the above-mentioned risk. An execution arrangement was proposed that envisages lending support to the program coordination office and the MOP divisions involved in tasks related to the handling of fiduciary issues (paragraphs 3.1 and 3.2). It would be geared to simplifying payment management processes and times; assigning specific personnel (focal points) for planning and financial management (mainstreaming internal administrative processes); and formulating operational guidelines and instructions (paragraphs 3.2 and 3.3).

### **D. Other risks and key issues**

- 2.6 **Investment monitoring and tracking risk.** This risk was assessed as medium. Shortcomings and delays were identified with respect to information gathering and investment planning management. Mitigation measures provide for the incorporation and implementation of a comprehensive budget management, planning, and projects management system to make it easier to keep track of individual investment programs in accordance with the nature of their financing sources and programmatic structure.
- 2.7 **Analysis of cost overruns.** To assess the potential for cost overruns, due to uncertainty regarding, *inter alia*, the limitations of the studies conducted during the design phase, cost escalation, and unforeseen developments during works an analysis was conducted of the performance of 42 similar projects executed by the MOP in the past four years, some of which correspond to the Puebla Panama Plan Multiphase Road Infrastructure Program to Enhance Competitiveness, financed by loan 1785/OC-PN. For that sample, average costs overruns amounted to 2.3% of the value of the works and there is an 88% probability that they would not exceed 10%. The program amount was estimated using works budgets based on

benchmark prices taken from recent MOP tenders, adding the aforementioned contingency percentage due to possible cost overruns. In Panama, historically, construction industry price levels and the local currency exchange rate vis-à-vis the U.S. dollar, have tended to be stable ([optional link 2](#)).

- 2.8 **Investment sustainability.** With a view to ensuring the useful life foreseen in the engineering design, the roads included under the program will be tendered using the construction and/or rehabilitation modality, with subsequent maintenance for two years thereafter. After that, they will enter the MOP's maintenance management system. Under that system, 6,013.47 kilometers (36.6% of the intercity road network) are periodically and routinely maintained under MOP administration, and a further 1,869.48 kilometers (26.8% of the paved road network) are covered by maintenance contracts, most of them under arrangements involving service level standards supervised by the UME. The Ministry's maintenance division will include the necessary resources in its annual operating budget and each year provide the Bank with its annual maintenance plan and a report on the state of repair of program works.

### III. IMPLEMENTATION AND MANAGEMENT PLAN

#### A. Summary of implementation arrangements

- 3.1 **Borrower and executing agency.** The borrower will be the Panamanian government and the executing agency for the program will be the MOP. For this and other operations financed by the IDB and other agencies, the organizational structure of the MOP includes the program coordination office.<sup>71</sup>
- 3.2 The program coordination office, consisting of a coordinator general and a technical coordinator,<sup>72</sup> will be supported by the Ministry's technical and operational divisions, through specific personnel (focal points) and in accordance with the existing institutional structure,<sup>73</sup> to ensure monitoring of technical, legal, and financial aspects, social and environmental management,<sup>74</sup> and procurement for the proper execution of the program. Responsibility for inspecting the works, along the same lines as other operations financed by the Bank (operations 1785/OC-PN and 1785/OC-PN-1, currently in execution), will fall to the MOP inspection division and its respective regional offices, which to date have performed satisfactorily.
- 3.3 The findings of the institutional capacity assessment of the MOP, using the ICAS methodology ([optional link 5](#)), supplemented by a technical and socioenvironmental evaluation ([optional link 6](#)), indicate that the institution has sufficient capacity to assume its responsibilities as the program's executing agency, even though it has

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<sup>71</sup> The program coordination office has a good record of, and experience with executing investment projects financed by the Bank (paragraph 1.21).

<sup>72</sup> Responsible for coordination, within the MOP, among the various technical and operational units involved, in order to keep track of progress made and obtain outputs in accordance with required standards and programming established by the Bank. The Coordinator General is, in the final instance and vis-à-vis the Bank, the person responsible for the planning and implementation of the program.

<sup>73</sup> See [Organizational Chart of the MOP](#).

<sup>74</sup> The Directorate of Community Affairs will be in charge of social management and the Environmental Section (General Secretariat) will lend support to the program coordination office in matters relating to the environmental management of the program ([optional link 6](#)).



new personnel for whom training is recommended to familiarize and update them with regard to the Bank's planning tools, safeguards policies, and fiduciary procedures.

- 3.4 In that context, in order to ensure an effective execution mechanism and minimize fiduciary and monitoring risk (paragraphs 2.5 through 2.6, and 3.2), it was established that, as **special contractual condition precedent to the first disbursement of the loan proceeds, the executing agency will have presented evidence that the operational units of the MOP responsible for technical, legal, financial, social and environmental management, and procurement matters have assigned the personnel needed to support the program coordination office and ensure proper execution of the program.**<sup>75</sup>
- 3.5 Furthermore, in order to ensure the sustainability of the investments, it was established that, as a special contractual condition for execution prior to completion of the works envisaged under the program, the MOP will have included these works in the corresponding maintenance contracts by level of service once the post-execution maintenance period for the works has concluded.<sup>76</sup>
- 3.6 **Procurement.** The procurement of goods and the contracting of works and services envisioned under this program will be structured by the program coordination office and carried out by the MOP's contracts administration division, 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). Annex III describes the general management framework for procurement. The Bank's supervision of procurement will be conducted in accordance with the procurement plan ([required link 4](#)).
- 3.7 **Retroactive financing and advance procurement.** The Bank may retroactively finance from the loan proceeds up to US\$17,400,000 (20% of the proposed amount of the loan) in eligible expenditures incurred by the borrower prior to the loan approval date, to cover the procurement of works, goods, services, and consulting services, provided that requirements substantially similar to those of the loan contract were met. Such expenditures will have been incurred on or after 28 December 2017 (program profile approval date), but in no case may they include expenditures made more than 18 months prior to the loan approval date (Annex III). The MOP expects to open bidding processes, in accordance with Bank policies, for two of the program's projects (paragraphs 1.18 and 1.19) before the loan contract has been signed (paragraph 2.1).
- 3.8 **Financial management.** Program financial and accounting management will be performed by the MOP's program coordination office, with the support of the respective divisions within its organizational structure (paragraph 3.1). With respect to financial management, the executing agency currently has limited experience due to the hiring of new support personnel for the program coordination office, although

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<sup>75</sup> To verify compliance with this condition, the MOP will provide the Bank with a list of the personnel assigned to each Directorate charged with lending support to the program coordination office in accordance with its specific responsibilities.

<sup>76</sup> To verify compliance with this condition, the MOP will provide the Bank with the annual maintenance and conservation plan.

previously it managed IDB resources satisfactorily based on the findings of the annual audit reports and of the Bank's semiannual fiduciary inspection visits. In addition, the executing agency has an adequate internal controls system implemented by the Office of the Comptroller General and by the institution itself. The ICAS assessment ([optional link 5](#)) conducted during the preparatory phase validated these findings and its recommendations were included in the program's design.

- 3.9 **Disbursements.** The loan will be disbursed under the advance of funds modality, based on financial programming for a period of up to 180 days. The Bank may disburse a new advance of funds once justification has been provided for at least 80% of the funds previously disbursed. Payments may also be reimbursed, or direct payments made to providers.
- 3.10 **External audit.** Every year, within 120 of the close of the respective fiscal year or of the date of the last disbursement, as the case may be, the borrower will provide the Bank with the financial statements for the program duly audited by an independent auditing firm acceptable to the Bank. The cost of the audit will be financed with the loan proceeds.

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

- 3.11 **Monitoring and evaluation.** During execution, the MOP will provide the Bank with a semiannual progress report, to include, *inter alia*: (i) a description of the activities carried out; (ii) the physical and financial execution schedule; (iii) monitoring of the indicators agreed upon in the results matrix (Annex II); (iv) a semiannual activities program; (v) semiannual cash flow; (vi) analysis of risks and events during execution of the projects; and (vii) consolidated information regarding the socioenvironmental management of the works. The executing agency will submit a midterm and final evaluation upon completion of 50% and 90% of the program disbursements, respectively, in accordance with the methodology described in the program monitoring and evaluation plan ([required link 2](#)). It will also provide such information as the Bank may need<sup>77</sup> to conduct the impact assessment.
- 3.12 **Program impact assessment.** This assessment facilitates measurement of the program's contribution to achieving the desired impacts following the interventions envisaged under the program. Most of the evaluation studies conducted thus far for the transport sector have been based on the use of simulation models and ex post cost/benefit methodologies focusing on the quantification of impacts on traditional indicators, such as the reduction in travel times and operating cost savings. Generally speaking, there is still very little evidence<sup>78</sup> of the link between investment in roads, poverty reduction, access to services, increased agricultural output, and the ways in which these impacts come about.
- 3.13 **Innovation through the use of big data.** The impact assessment in respect of the Atalaya-Mariato-Quebró-Las Flores corridor and Varadero feeder road will use a comparison with the "counterfactual" case of similar roads that will not be improved in the next few years. The methodology proposed requires gathering a very large

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<sup>77</sup> Construction of the baseline, the procurement of satellite images and data, as well as the methodological analysis will be supported by technical cooperation ATN/OC-16651-PN.

<sup>78</sup> The Bank is currently financing evaluations of rural roads projects in Nicaragua (technical cooperation operation [ATN/OC-14997-NI](#)), Peru (loan [3587/OC-PE](#)), and Paraguay (loan [3600/OC-PR](#)).



amount of both temporal and spatial information and contemplates using quasi-experimental designs to answer questions that are not traditionally asked in the transport sector ([required link 2](#)). Thus the idea is to tap the benefits of big data, which will make it possible to cover a large and scattered geographical area in a limited period of time without the need for field work. More specifically, by using a difference-in-differences method combined with a matching method, the assessment will seek to generate knowledge about the impacts of the program on the following indicators: (i) agricultural production (rice) in the corridor's area of influence (measures done using satellite data); (ii) the increase in overall economic activity in the area of influence (increase in GDP, using nighttime satellite imagery); and (iii) the increase in mobility (number of trips made in the project's area of influence (measurements done by using Smart Steps telephony data.

Development Effectiveness Matrix		
Summary		PN-L1147
I. Corporate and Country Priorities		
1. IDB Development Objectives	Yes	
Development Challenges & Cross-cutting Themes	-Social Inclusion and Equality -Productivity and Innovation -Gender Equality and Diversity -Climate Change and Environmental Sustainability	
Country Development Results Indicators	-Roads built or upgraded (km)* -Government agencies benefited by projects that strengthen technological and managerial tools to improve public service delivery (#)*	
2. Country Development Objectives	Yes	
Country Strategy Results Matrix	GN-2838	Deepen the logistics services, efficiency, and connectivity of the productive infrastructure.
Country Program Results Matrix	GN-2915	The intervention is included in the 2018 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	10.0	
3.1 Program Diagnosis	3.0	
3.2 Proposed Interventions or Solutions	4.0	
3.3 Results Matrix Quality	3.0	
4. Ex ante Economic Analysis	9.0	
4.1 Program has an ERR/NPV, or key outcomes identified for CEA	3.0	
4.2 Identified and Quantified Benefits and Costs	3.0	
4.3 Reasonable Assumptions	0.0	
4.4 Sensitivity Analysis	2.0	
4.5 Consistency with results matrix	1.0	
5. Monitoring and Evaluation	9.3	
5.1 Monitoring Mechanisms	2.5	
5.2 Evaluation Plan	6.8	
III. Risks & Mitigation Monitoring Matrix		
Overall risks rate = magnitude of risks*likelihood	Low	
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	A	
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, Price Comparison.
Non-Fiduciary		
The IDB's involvement promotes additional improvements of the intended beneficiaries and/or public sector entity in the following dimensions:		
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	Yes	CT PN-T1177 (paragraph 3.4) and Impact Evaluation (3.13)

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

The diagnosis correctly identifies and quantifies the main problems of limited accessibility in Central and Western Panama. This has allowed to dimension the main determinants and factors that contribute to these problems and what the operation aims to address. The two main components include: i) rehabilitation and/or improvement of road infrastructure; and ii) the capacity building of the Ministry of Public Works, through the financing of studies and technical tools to support the institutional management of the MOP.

The proposed analysis allows to understand the vertical logic of the project and maintains consistency between the expected impacts (increase in productive activities in the area of influence of the project) and the results (reduction of travel times and costs, increase in transit of goods and people, the reduction of the access time to health services), as well as with the products and activities proposed. The results matrix is solid.

The document presents evidence based on impact evaluations that demonstrate the effect of similar interventions. At the same time, it proposes an innovative impact assessment based on the use of Big Data that aims to generate broader knowledge about the impacts of investment in rural roads and its effect on agricultural production, economic activity and mobility.

Also, the economic analysis estimates the benefits obtained as a result of the savings of the generalized transportation costs, and for the project located in the province of Veraguas, benefits have been identified resulting from the increase in agricultural activities, stimulated by the improvement of the transitability in the project area. The sensitivity analysis is presented based on the assumptions established for the determination of costs and benefits. Likewise, the analysis is complemented with a frontier study, allowing to verify the robustness of the profitability indicators.

The monitoring and evaluation plan is consistent with the intervention and the indicators presented.

## RESULTS MATRIX

<b>Program objective:</b>	The program's objective is to help increase productivity in the central and western regions of Panama by providing infrastructure and contributing to the development of safe, reliable, and affordable transport services, as well as ensuring that these services are available to provide access to markets and for the use of the Ngäbe-Buglé indigenous communities.
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### EXPECTED IMPACT

Indicator	Unit of measurement	Baseline	Baseline year	Year 1	Year 2	Year 3	Year 4	Year 5	Final target (2022) <sup>1</sup>	Means of verification	Comments
<b>Impact 1: Increase in productive activities within the area of influence of the Atalaya-Mariato-Quebró-Flores corridor and Varadero feeder road, due to improved connectivity</b>											
Number of tons of agricultural production (rice) in the corridor's area of influence <sup>2</sup>	Ton	22,280 <sup>3</sup>	2016	-	-	-	-	24,799	24,799	Amounts to be determined in 2022 through direct field research (ex post evaluation surveys) and Bank internal analyses, based on satellite imagery provided for under the program's impact assessment	This indicator is meant to reflect the impact of improved transport on the increase in rice production and increased economic activity in the area of influence of the aforementioned corridor and feeder road

<sup>1</sup> In accordance with the impact assessment schedule.

<sup>2</sup> The area of influence is Atalaya and Mariato. With regard to the Atalaya-Mariato-Quebró-Flores corridor and Varadero feeder road project, the main crop in 2016 was rice (87%), followed by corn (7%). Veraguas is Panama's second leading rice producing province, with 1,289,200 quintals or 20.6%, second to Chiriquí province, which produces 30.6%.

<sup>3</sup> The baseline values and impact indicator target correspond to the project's area of influence, which were determined using the ex ante economic evaluation methodology, surveys, and information provided by the regional office of the Ministry of Agriculture in Veraguas. These amounts will be reviewed using the impact assessment methodology ([required link 3](#)), financed by technical cooperation operation ATN/OC-16651-PN.

## EXPECTED OUTCOMES

Expected outcomes	Unit of measurement	Baseline (2018)	Year 1	Year 2	Year 3	Year 4	Final target	Means of verification	Comments
<b>Component 1: Rehabilitation and/or improvement of road infrastructure</b>									
<b>1.1. Atalaya-Mariato-Quebró-Flores corridor and Varadero feeder road project<sup>4</sup></b>									
<b>1.1.1. Reduce vehicle operating costs<sup>5</sup></b>									
Average vehicle operating cost <sup>6</sup>	US\$ per vehicle-km	1.08	-	-	-	0.77	0.77 <sup>7</sup>	Vehicle operating costs study, based on HDM-4/vehicle operating costs of the Roads Economic Decision (RED) model	Agency responsible: Ministry of Public Works (MOP)
<b>1.1.2. Reduce average transit times</b>									
Average transit time for the Atalaya-Mariato-Quebró-Flores corridor	Minute	153	-	-	-	103	103	Analysis of average transit time based on surveys using the same methodology as in the ex ante evaluation	Agency responsible: MOP

<sup>4</sup> This Project accounts for 72% of the total financing for the infrastructure component.

<sup>5</sup> Based on the evaluation carried out with the RED model of the ex-ante economic analysis and measured in 2022 in the ex post evaluation using the same methodology.

<sup>6</sup> Average values calculated for the following types of vehicles: motorbikes, small vehicle, 4X4, delivery vehicle, heavy bus, light truck, medium-duty truck, heavy truck, and road tractor with semitrailer.

<sup>7</sup> Even though it is estimated that this work will be completed in 2020, the idea is to take this information from the Final Evaluation of the program.

Expected outcomes	Unit of measurement	Baseline (2018)	Year 1	Year 2	Year 3	Year 4	Final target	Means of verification	Comments
<b>1.1.3. Increase in freight and passenger traffic</b>									
Annual average daily traffic (AADT) <sup>8</sup> in project sub-segments: <ul style="list-style-type: none"> <li>Atalaya-Mariato</li> <li>Mariato-Las Flores</li> <li>Quebró-Varadero</li> </ul>	Vehicle	888 310 66	-	-	-	1,256 469 96	1,256 469 96	Traffic study	Agency responsible: MOP
<b>1.2. Rural roads project in the Besikó district<sup>9</sup></b>									
<b>1.2.1. Reduce vehicle operating costs</b>									
Average vehicle operating cost	US\$ per vehicle-km	1.52	-	-	-	0.98	0.98	Vehicle operating costs study based on HDM4/vehicle operating costs of the RED model	Agency responsible: MOP
<b>1.2.2. Reduce average transit times</b>									
Average transit time for the San Juan-Alto Potrero sub-segment	Minutes	114	-	-	-	22	22	Analysis of average transit time based on surveys using the same methodology as in the ex-ante evaluation	Agency responsible: MOP
<b>1.2.3. Increase freight and passenger traffic</b>									
AADT <sup>10</sup>	Vehicles	40	-	-	-	79	79	Traffic study	Agency responsible: MOP

<sup>8</sup> The baseline comprises normal traffic taking 2018 as the benchmark baseline for the ex ante economic evaluation; and as the established target, the normal baseline traffic plus the traffic generated, with reference to the target year (2022).

<sup>9</sup> This project accounts for 19% of the total financing for the infrastructure component.

<sup>10</sup> Baseline year (2017) for the San Juan-Alto Potrero sub-segment.

Expected outcomes	Unit of measurement	Baseline (2018)	Year 1	Year 2	Year 3	Year 4	Final target	Means of verification	Comments
1.2.4. Reduction in the average time it takes residents of the Ngäbe-Buglé community to access health care services in the road's area of influence									
Time it takes community residents to access health care services: - Health posts/centers <sup>11</sup> - San Félix Regional Hospital	Minute  Minute	109  150	-  -	-  -	-  -	63  104	63  104	Surveys <sup>12</sup> conducted in health centers and beneficiary communities based on the methodology and questionnaires used for the ex ante economic evaluation	Agency responsible: MOP
Component 2: MOP capacity building									
2.1. Increase in the number of MOP projects tendered that incorporate technical additionality									
Number of project tenders prioritized by the MOP with added value in terms of the resilience of the infrastructure to climate change; road safety; and/or ethno-engineering components	Number of tenders	2 <sup>13</sup>	-	-	-	8	8	Semiannual program monitoring report	Agency responsible: MOP

<sup>11</sup> Average travel time to access health posts in Camarón Arriba, Lajero, and San Juan based on the surveys conducted in the ex ante evaluation.

<sup>12</sup> Broken down by sex, age, and ethnicity.

<sup>13</sup> Tenders for the bridge over the Chico River and Atalaya-Mariato-Quebró-Flores corridor.

## OUTPUTS

Outputs	Estimated cost (US\$)	Unit of measurement	Baseline 2018	Year 2019	Year 2020	Year 2021	Year 2022	Final target	Means of verification	Comments
Component 1: Rehabilitation and/or improvement of road infrastructure										
Number of kilometers improved or rehabilitated										
• Atalaya-Mariato-Quebró-Flores corridor and Varadero feeder road rehabilitated	60,740,000	Kilometer	-	45.0	50.0	18.26	-	113.26	Supervision reports	Agency responsible: MOP-IDB
• Rural roads in Besikó district improved	16,100,000	Kilometer	-	5.0	17.90	-	-	22.90	Certificate of acceptance of works	
• Bridge over the Chico River built	7,790,000	Unit	-	-	1	-	-	1		
Component 2: MOP capacity building										
Road asset management system structured and implemented	595,000	Number of systems	-	-	-	1	-	1	Final report by consultant	Agency responsible: MOP
Number of information technology items procured and operating (15 laptops, 15 Global Positioning System devices, 15 tablets, 15 Geographic Information System computer workstations, and 15 high-definition cameras)	75,000	Number of items	-	10	35	-	-	45	Certificate of acceptance of goods	Agency responsible: MOP
Number of software licenses procured and being used	185,000	Number of licenses	-	5	10	5	-	20	Certificate of acceptance of goods	Agency responsible: MOP
Number of vehicles procured and operating (two pickup trucks)	100,000	Number of vehicles	-	-	2	-	-	2	Certificate of acceptance of goods	Agency responsible: MOP

Outputs	Estimated cost (US\$)	Unit of measurement	Baseline 2018	Year 2019	Year 2020	Year 2021	Year 2022	Final target	Means of verification	Comments
Documentation and filing system procured and implemented	180,000	Number of equipment components	-	-	1	-	-	1	Certificate of acceptance of goods	Agency responsible: MOP
Project management system procured and implemented	200,000	Number of systems	-	-	-	1	-	1	Certificate of acceptance of goods	Agency responsible: MOP
Number of preinvestment studies and technical consultancies contracted and completed	505,000	Number of studies	-	1	3	3	2	9	Consulting firm contracts	Agency responsible: MOP
Environmental procedures manual revised and adopted by the MOP	80,000	Manual	-	-	1	-	-	1	Manual posted on MOP's website	-
Blue Spot analysis methodology developed	250,000	Methodology	-	-	1	-	-	1	Contracts signed	Agency responsible: MOP



## **FIDUCIARY AGREEMENTS AND REQUIREMENTS**

**Country:** Panama

**Project number:** PN-L1147

**Name:** Support for the Development of Territorial Connectivity in Panama's Central and Western Regions

**Executing agency:** Ministry of Public Works (MOP)

**Fiduciary team:** Ezequiel Cambiasso, Christian Contín, and David Ochoa (FMP/CPN)

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

- 1.1 The Ministry of Public Works (MOP) is the executing agency, through a program coordination office (PCO), which will be established to that end and report to the institution's senior-most authority. It will have autonomy in planning and technical and operational management, but will be supported by the organizational structure of the MOP in respect of fiduciary matters (procurement and financial management), monitoring, and other activities relating to program execution. Opportunities for managerial improvements at the MOP mainly concern its planning and performance monitoring processes, the lack of strategic and operational plans, and the lack of financial and procurement planning.
- 1.2 Given that the idea is to have a program coordination unit comprising several functional areas of the MOP, instructions will be formulated regarding its composition, functions, and coordination mechanisms.

### **II. FIDUCIARY RISK EVALUATION AND MITIGATION MEASURES**

- 2.1 The level of fiduciary risk is regarded as medium. The program risk workshop was conducted during the design phase, with the participation of the project team and the entities involved. It concluded that, in fiduciary matters with respect to both procurement and financial management, the level of risk is medium.
- 2.2 It was further ascertained, based on the findings of the institutional capacity analysis ([optional link 5](#)), that the personnel to be assigned to the programs need to be familiarized with implementation of the Bank's financial and procurement policies and instruments. As a mitigation measure, an execution arrangement was proposed that envisages lending support to the program coordination office and the MOP divisions involved in fiduciary management tasks. It would be geared to simplifying payment management processes and times; assigning specific personnel (focal points) for planning and financial management (mainstreaming internal administrative processes); and formulating operational guidelines and instructions.

### III. CONSIDERATIONS FOR THE SPECIAL CONDITIONS OF THE CONTRACT

- 3.1 The agreements and requirements to be considered in the special conditions of the contract include:
- a. The Financial Management Guidelines for IDB-financed Projects (document OP-273-6) will apply, and in accordance with these: (i) audited financial statements for the program prepared by an independent auditing firm acceptable to the Bank will be requested on an annual basis, within 120 days after the close of each fiscal year or the date of the last disbursement; (ii) advances will be requested for financial plans of up to 180 days; and (iii) a new advance of funds may be requested only when 80% of the cumulative resources pending justification have been accounted for.
  - b. There is exchange-rate parity between the U.S. dollar and the Panamanian balboa, so the borrower may opt for any of the exchange rate options provided in the General Conditions of the loan contracts, according to its preference.

### IV. AGREEMENTS AND REQUIREMENTS FOR PROCUREMENT EXECUTION

- 4.1 The fiduciary agreements and requirements for procurement establish the provisions that apply for execution of all procurement processes planned under the program.

#### A. Procurement execution

- 4.2 The Policies for the Procurement of Goods and Works 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) will apply.
- a. **Procurement of works, goods, and nonconsulting services.** For procurement subject to international competitive bidding (ICB), the standard bidding documents issued by the Bank will be used. For procurement subject to national competitive bidding (NCB) and the shopping method, the models defined for this operation by the Bank will be used. The program sector specialist will be responsible for reviewing the technical specifications for procurement during the preparation of selection processes.
  - b. **Selection and contracting of consultants.** For contracts for consulting services generated under the program, the standard request for proposals issued by the Bank will be used. The program sector specialist will be responsible for reviewing the terms of reference for consulting contracts.
  - c. **Selection of individual consultants.** For the selection of individual consultants, their qualifications for performing the work will be taken into account, based on a comparison of the qualifications of at least three candidates.
  - d. **Use of the country procurement system.** The Bank's Board of Executive Directors approved the use of the framework agreement subsystems (document GN-2538-11) up to the threshold established for NCB

(US\$250,000), and the mechanism for smaller purchases of up to US\$50,000, which may change as the Bank approves higher levels of use.

- e. **Retroactive financing and advance procurement.** The Bank may retroactively finance from the loan proceeds up to US\$17,400,000 (20% of the proposed amount of the loan) in eligible expenditures incurred by the borrower prior to the loan approval date, to cover the procurement of works, goods, services, and consulting services, provided that requirements substantially similar to those of the loan contract were met. Such expenditures will have been incurred on or after 28 December 2017 (program profile approval date), but in no case may they include expenditures made more than 18 months prior to the loan approval date. The MOP expects to open bidding processes for two of the program's projects before the loan contract has been signed, in accordance with Bank policies.
- f. **Domestic preference.** Not applicable.
- g. **Procurement plan.** The Procurement Plan Execution System (SEPA) or a subsequent updated version of the system will be used for electronic monitoring of procurement processes.

**Table 1. Thresholds (US\$)**

Works			Goods			Consulting services	
ICB	NCB/ shopping	Shopping for complex works	ICB	NCB/ shopping	Shopping for complex goods	International	National
≥ 3,000,000	> 250,000 and < \$3,000,000	< 250,000	≥ 250,000	> 50,000 and < 250,000	< 50,000	> 200,000	≤ 200,000

**Table 2. Main procurement**

Activity	Bidding type	Estimated amount (US\$)
Works		
Construction of a second bridge over the Chico River	ICB	7,790,000
Rehabilitation of the Atalaya-Mariato-Quebró-Flores corridor and Varadero feeder road	ICB	60,740,000
Rehabilitation and improvement of rural roads in the Besikó district	ICB	16,100,000

## **B. Procurement supervision**

- 4.3 All goods, works, and nonconsulting services procured using ICB or direct contracting will be subject to prior review. The selection of consulting firms for amounts greater than US\$200,000 will be subject to prior review. For all other contracts, the type of review to be used will be determined case by case in the procurement plan.

## **C. Records and files**

- 4.4 The executing agency will keep records up to date and files in proper order so that they can be reviewed by the Bank in accordance with the following guidelines:

- a. Procurement documents should be kept in a single file or folder and should be easily distinguished from processes financed with funds from the local contribution or financed with funds other than those of the program; and
- b. Documents will be paginated and numbered and will be filed and kept in proper order so that they can be clearly and immediately located and identified and available at any time for Bank review and audit purposes.

## **V. FINANCIAL MANAGEMENT**

### **A. Programming and budget**

- 5.1 The Ministry of Economy and Finance is responsible for budget formulation and control. Every year by 31 July, it will present a budget proposal to the legislature (National Assembly), which is responsible for approving it, as well as for authorizing any increase. The budget is prepared annually and includes all public sector investments, revenue, and expenditures. The 2018 Budget Act did not include an allocation for this program. Consequently, the MOP will need to make the corresponding arrangements to have it included

### **B. Accounting and information systems**

- 5.2 With a view to streamlining government management, the Panamanian government, through the Ministry of Economy and Finance and the National Accounting Office (DNC), is currently implementing the new accounting and budget system known as ISTMO. The program coordination office will need to take the necessary steps required by the DNC to obtain its respective users, training, and system parametrization in order to manage the budget, commit expenditures, and make payments through the system.
- 5.3 Program accounting will be governed by the rules issued by the Office of the Comptroller General (CGR), which are not consistent with the International Public Sector Accounting Standards.

### **C. Disbursements and cash flow**

- 5.4 In 2013, legislation was enacted in Panama establishing use of a Treasury Single Account (TSA), and implementation began in late 2014 with the accounts of the MEF and continued in 2015 with several other ministries. In 2018, the idea is to conduct an evaluation of the TSA and of how it interfaces with implementation of ISTMO and the oversight and monitoring systems in place, in order to determine whether it could be used in Bank-financed projects.
- 5.5 The Bank will transfer resources to an exclusive program account at a financial institution opened by the MOP.<sup>1</sup> Disbursements will be made in the form of advances of funds<sup>2</sup> to cover liquidity needs based on the respective financial plan for a period of up to 180 days. A new advance of funds may be requested only when 80% of the cumulative resources pending justification have been accounted

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<sup>1</sup> In the event the TSA evaluation mentioned in the previous paragraph is satisfactory, the funds will be transferred to the account designated by the MEF.

<sup>2</sup> In accordance with the Financial Management Guide for IDB-financed Projects (document OP-273-6).

for. Payments may also be reimbursed, or direct payments may be made to providers.

- 5.6 The initial financial plan indicates that US\$2.3 million in disbursements from the IDB loan will be needed in 2018.

**D. Internal control and internal audit**

- 5.7 Given the prior control exercised by the CGR, government institutions in Panama have weak internal control and internal audit systems inasmuch as they rely on the CGR's control activities instead of putting effective processes and controls in place. As a result, these systems are not considered adequate to exercise the control functions required for Bank projects.

**E. External control and reports**

- 5.8 The CGR has focused its efforts on prior control of transactions to dispose of government assets, since its audit function is weak. In addition, because it participates in administrative processes through prior control, it is not sufficiently independent to conduct audits, so the determination is that it does not have the capacity to exercise external control of the program.
- 5.9 It is recommended that a supplementary enterprises resources planning tool be adopted to provide capabilities for physical and financial planning integrated at the program, component, activity, and output levels, based on the programmatic structure of the loan, and as a monitoring and evaluation tool. Such a tool would be used together with the ISTMO/SAP platform.
- 5.10 Audited financial statements prepared by an independent audit firm acceptable to the Bank will be requested on an annual basis for the program, within 120 days after the close of each fiscal year or the date of the last disbursement.

**F. Financial supervision plan**

- 5.11 Financial supervision will be based on the reports prepared by the audit firm mentioned in the preceding paragraph, and the supporting documentation for disbursements will be subject to ex post review by the audit firm as part of its audits or during financial inspection visits.

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-\_\_\_/18

Panama. Loan \_\_\_\_/OC-PN to the Republic of Panama  
Support for Development of Territorial Connectivity  
in Panama's Central and Western Regions

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 Panama, as borrower, for the purpose of granting it a financing to cooperate in the execution of the project "Support for Development of Territorial Connectivity in Panama's Central and Western Regions." Such financing will be for the amount of up to US\$87,000,000 from the resources of the Bank's Ordinary Capital, 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 \_\_\_\_ 2018)