

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

## **BOLIVIA**

# **REHABILITATION OF THE LA PAZ – EL ALTO HIGHWAY**

**(BO-L1093)**

## **LOAN PROPOSAL**

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ELECTRONIC LINKS	
<b>REQUIRED</b>	
1.	Procurement plan (PP) <a href="http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=37820273">http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=37820273</a>
2.	Annual work plan (AOP) <a href="http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=37820274">http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=37820274</a>
3.	Monitoring and evaluation plan <a href="http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=37820275">http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=37820275</a>
4.	Environmental and social management report (ESMR) <a href="http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=37821118">http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=37821118</a>
<b>OPTIONAL</b>	
1.	Project siting map <a href="http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=37820268">http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=37820268</a>
2.	Economic evaluation <a href="http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=37821179">http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=37821179</a>
3.	Study to estimate the probability of additional costs <a href="http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=37820270">http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=37820270</a>
4.	Traffic study <a href="http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=37816365">http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=37816365</a>
5.	Technical annex, regional integration <a href="http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=37820271">http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=37820271</a>
6.	Project completion report, 1039/SF-BO <a href="http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=36939807">http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=36939807</a>
7.	<i>Doing Business Report 2012</i> <a href="http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=36939809">http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=36939809</a>
8.	Technical, economic, and socioenvironmental study (TESA) – Executive summary <a href="http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=37816353">http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=37816353</a>
9.	Road safety report <a href="http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=37891610">http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=37891610</a>
10.	Safeguard policy filter (SPF) and safeguard screening form (SSF) <a href="http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=37932240">http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=37932240</a>

## ABBREVIATIONS

ABC	Administradora Boliviana de Carreteras [Bolivian Highway Administration]
ALPEA	Autopista La Paz – El Alto [La Paz – El Alto Highway]
AWP	Annual work plan
CGE	Contraloría General del Estado [Office of the Comptroller General]
CNC	Cuenta Nacional de Carreteras [National Highway Account]
EIA	Environmental impact assessment
EIRR	Economic internal rate of return
ESMR	Environmental and social management report
F-02	Ruta Fundamental No. 2 [Basic Route 2]
FSO	Fund for Special Operations
GOB	Government of Bolivia
INE	Instituto Nacional de Estadística [National Statistics Institute]
LPMA	La Paz Metropolitan Area
MOPSV	Ministry of Public Works, Services, and Housing
NPV	Net present value
OC	Ordinary Capital
OEL	Optional electronic link
PMR	Progress monitoring report
PND	Plan Nacional de Desarrollo [National Development Plan]
PRP	Plan/Programa de Reposición de Pérdidas [Plan/Program for Replacement of Losses]
REL	Required electronic link
RVF	Red Vial Fundamental [Basic Road Network]
SABSA	Bolivian Airport Services Corporation (Servicios Aeroportuarios Bolivianos Sociedad Anónima)
SCF	Single Currency Facility
SIGMA	Sistema Integrado de Gestión y Modernización Administrativa [Integrated Administrative Modernization and Management System]
TESA	Technical, economic, and socioenvironmental study
VMT	Office of the Vice Minister of Transportation

## PROJECT SUMMARY

### BOLIVIA REHABILITATION OF THE LA PAZ – EL ALTO HIGHWAY (BO-L1093)

Financial Terms and Conditions				
<b>Borrower:</b> Plurinational State of Bolivia		<b>Financing:</b>	OC	FSO
<b>Executing Agency:</b> Bolivian Highway Administration (ABC)		<b>Repayment period:</b>	30 years	40 years
<b>Source</b>	<b>Amount (US\$ millions)</b>	<b>Disbursement period:</b>	4 years	4 years
IDB (OC)	28.0	<b>Grace period:</b>	6 years	40 years
IDB (FSO)	7.0	<b>Interest rate:</b>	SCF, fixed	0.25%
<b>Other/Cofinancing</b>	-	<b>Inspection and supervision fee:</b>	*	N/A
<b>Local</b>	-	<b>Credit fee:</b>	*	N/A
<b>Total</b>	35.0	<b>Currency of approval:</b>	SCF, US\$	US\$
Project at a Glance				
<p><b>Project objective:</b> This project seeks to improve traffic conditions on the La Paz – El Alto Highway, reducing travel times and costs and number of accidents through the rehabilitation and improvement of the roadway, which will foster local and regional economic development. To achieve this objective, the project has the following components: (i) civil works and road safety; and (ii) administration and supervision.</p>				
<p><b>Special contractual conditions:</b></p> <p><b>(a) Prior to bidding on works:</b> (i) the executing agency will present, for acceptance by the Bank, the supplemented final design of the project works, including the technical aspects agreed upon with the Bank, once approved by the ABC (see paragraph 2.11); and (ii) the executing agency will present, to the Bank's satisfaction, the Plan (or Program) for Replacement of Losses (PRP) (see paragraph 2.5).</p> <p><b>(b) Prior to the start of works:</b> the executing agency will present, to the Bank's satisfaction: (i) evidence that 50% of the rights-of-way for the road have been cleared (see paragraph 2.5); (ii) the final version of the environmental management plans, adjusted, supplemented, and approved by the ABC (see paragraph 2.5); and (iii) evidence that the communication plan has been implemented, to keep the population informed on the nature and scope of the works (see paragraph 2.4).</p> <p><b>(c) During the execution of the project:</b> activities will be conducted according to the requirements of the environmental and social management report (ESMR), specifically as stipulated in Section VI, "Management of environmental, social, health, safety, and labor impacts and risks" (see paragraph 2.5).</p>				
<b>Exceptions to Bank policies:</b> None.				
<b>Project consistent with country strategy:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
<b>Project qualifies as:</b> SEQ <input type="checkbox"/> PTI <input type="checkbox"/> Sector <input type="checkbox"/> Geographic <input type="checkbox"/> Headcount <input type="checkbox"/>				

\* The credit fee and the 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 compliance with the corresponding policies.

## I. DESCRIPTION AND RESULTS MONITORING

### A. Background, problem to be addressed, and rationale

- 1.1 **General.** The Plurinational State of Bolivia is a landlocked country with a diverse topology and a high degree of geographic dispersion in terms of both its population and its economic base, which is structured on the primary sector. Bolivia's transportation infrastructure allows for socioeconomic linkages within the country and communication with the rest of the world through neighboring countries. Owing to the fact that the country is landlocked, Bolivia's foreign trade is highly dependent on highway transportation,<sup>1</sup> which tends to increase freight costs, thus raising the price of imports and making the country's exports less competitive.<sup>2</sup> Each form of passenger transportation plays a special role in the different regions of Bolivia. The predominant means of transportation is the highway system,<sup>3</sup> which also receives the largest portion of public infrastructure investment<sup>4</sup> and has the most extensive coverage throughout the country.
- 1.2 **Economic growth and demand for road infrastructure.** Since 2009, Bolivia has experienced sustained economic growth, despite the international financial crisis. That year, the country reported growth of 3.4%, followed by 4.4% in 2010, 5.2% in 2011, and 5.2%<sup>5</sup> in 2012. In this context, road infrastructure takes on strategic importance in the country's efforts to meet growing demand and promote economic and social development.
- 1.3 **Bolivia's road system.** The road system, 74,831 km in length, is divided into three functional levels, coinciding with the country's political structure. The Basic Road Network (known by its Spanish-language acronym, RVF), which is run by the national government and managed by the Bolivian Highway Administration (ABC), includes the most important road segments (16,054 km). The Departmental Road Network (19,285 km) is administered by the departmental governments, while the Municipal Road Network (39,492 km) is administered by the municipios. Only 8% of the Bolivian Road System is paved,<sup>6</sup> resulting in high costs for transporting freight and passengers, thus hindering economic and integration efforts.
- 1.4 **The La Paz Metropolitan Area (LPMA).** The LPMA comprises the cities of La Paz and El Alto, in addition to other, smaller municipios in the department of

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<sup>1</sup> In 2008, nearly 26% of the value of exports and more than 93% of imports was moved over highways. Source: National Statistics Institute (INE).

<sup>2</sup> The cost of exporting a 20-foot container is US\$1,425, while the cost of importing is US\$1,747. Source: *Doing Business Report 2012* ([OEL 7](#)).

<sup>3</sup> In 2007, highways accounted for most of the movement of passengers (92.9%). Source: INE.

<sup>4</sup> Public investment in infrastructure in 2010 was distributed as follows: transportation 82.9%; energy 9.8%; water resources 6.1%; and communications 1.2%. Of investments in transportation, 59.3% were executed by the ABC. Source: INE.

<sup>5</sup> Source: Ministry of Economy and Public Finance of Bolivia.

<sup>6</sup> Source: ABC.

La Paz. This is Bolivia's largest urban center, where the country's financial and economic activities are highly concentrated. Most of the national government's public administration is centralized in La Paz. Nearly 835,000 people live in La Paz, and approximately 955,000 in El Alto.<sup>7</sup> In addition, all land connections between La Paz and the rest of Bolivia, and the rest of the world, must pass through El Alto. The El Alto International Airport has the country's second-highest volume of air traffic. Due to topographical limitations, there are few possibilities for expanding the capacity of the LPMA road network. At present, traffic congestion is intense and is expected to become even more so, as the number of vehicles on the road and the LPMA's population increase. In addition to the economic losses and loss of time entailed, these high levels of congestion also cause problems of road safety, noise, and air pollution.

- 1.5 **The La Paz – El Alto Highway (ALPEA).** Located in the province of Murillo, Department of La Paz, the ALPEA is part of Basic Route 2 (F-02) of the country's RVF. Since its construction, financed by the Bank more than 30 years ago (loan 342/SF-BO), it has been considered one of Bolivia's most important travel routes, being the principal link between the cities of La Paz and El Alto. It also serves as the main access to the El Alto International Airport<sup>8</sup> from the city of La Paz, and the largest feeder road for passengers traveling to the airport: 70% of people using the airport use this route. The road is 11.2 km in length and has two lanes in each direction, each lane being 3.1 meters wide, with a road surface consisting of rigid pavement and double-surfaced shoulders averaging 2.8 meters in width. The road has a central median consisting of metal railings, and it is separated laterally by triangular gutters and metal railings. In spite of being classified as a highway, it has the characteristics of an urban boulevard, with formal and informal stopping points for public transportation vehicles and pedestrian crossings, which are sometimes used instead of the overhead walkways.

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<sup>7</sup> Population projections 2010. Source: INE.

<sup>8</sup> Servicios Aeroportuarios Bolivianos Sociedad Anónima [Bolivian Airport Services Corporation] (SABSA) hosts passenger statistics for 1997 through 2007 on its web site, <http://www.sabsa.aereo>. Between 1999 and 2003, the total number of passengers traveling to and from the airport decreased slightly; but beginning in 2004, passenger volume began to increase moderately (1.95%), and from 2006 onward, with the change of government and the stabilization and strengthening of the economy, the pace began to accelerate. In 2010, the number of passengers reached 1,154,574. Using a conservative scenario, with a projected annual increase of 1.95% up to 2013, it is estimated that there would be nearly 930,300 passengers by 2013.

**Figure 1. Main Route Connecting the Cities of La Paz and El Alto**



- 1.6 **Traffic.** Approximately 300,000 people are estimated to travel on the ALPEA every day, evidence of the economic, productive, and social importance of the link between La Paz and El Alto. An average of 40,583 vehicles use this road daily,<sup>9</sup> with an average speed of 65 km/hour and average travel time of 9.78 minutes. Estimates predict daily traffic volume of 60,000 vehicles by 2018. The road capacity is 3,322 vehicles per hour in the downward direction, and 2,751 vehicles per hour in the upward direction. The traffic traveling to or from the El Alto International Airport averages 1,595 vehicles per day, carrying 3,920 users (70% of total users per day). Currently, the level of service is rated “D.”<sup>10</sup> If no action is taken to improve the highway, the level of service will reach “F” by 2018, causing vehicular chaos on the road.<sup>11</sup>
- 1.7 **Road safety.** Traffic accidents in Bolivia in 2000-2007 experienced a steady and troubling increase of 80%, with more than 36,000 accidents per year.<sup>12</sup> The country has a rate of 1,997 traffic deaths per million vehicles, well above the regional average of 815.<sup>13</sup> The number of accidents on the ALPEA rose from 18 in 2009 to 36 in 2010, while the number of injuries increased from 15 to 102<sup>14</sup> in the same

<sup>9</sup> 40% cars and pickups, 48% minibuses, 7% buses, and 5% trucks (2010).

<sup>10</sup> Level of service of a road is defined as a measure of the quality that the road offers users, taking as a reference factors such as: speed, travel time, comfort, safety, and operating costs. Level A represents conditions where there is a free flow of traffic; level B represents conditions with stable traffic flow; level C represents conditions with stable traffic flow but where speed and maneuverability are strongly affected by the high volume of traffic; level D represents the beginning stage of unstable traffic flow; level E represents the maximum capacity that can be accommodated on the road; and level F represents congested traffic flow and slow speeds.

<sup>11</sup> Source: “Estudio y diseño de obras para la rehabilitación de la Autopista La Paz – El Alto” [Study and design of works for rehabilitation of the La Paz – El Alto Highway]. Traffic study ([OEL 4](#)).

<sup>12</sup> Source: INE.

<sup>13</sup> ABC-IDB (2009), “Diagnóstico de seguridad vial en América Latina y el Caribe” [Diagnostic assessment of road safety in Latin America and the Caribbean] (data from 2005, 2006, 2007, and 2008).

<sup>14</sup> Source: ABC, National Office of Technical Management, Road Conservation Unit.



period. There has also been an average of five fatal accidents per year over the last five years.<sup>15</sup> Among the factors identified, in addition to the poor overall state of the road, are an insufficient number of pedestrian overhead walkways, traffic interchanges, stopping points, signs, signals and pavement markings, and gaps throughout the perimeter fence, all of which lead to unsafe behaviors by the users of the roads, e.g., pedestrians crossing and public transportation vehicles stopping in unauthorized places.

- 1.8 **Maintenance.** Given that the ALPEA was built more than 30 years ago, it has reached the end of its useful life. The ALPEA has been effectively maintained since it was built, and its current condition is the result of normal wear and tear for an increasingly trafficked road more than 30 years old. Among other problems, the system of secondary drains and culverts is completely deteriorated, 30% of the paving slabs are damaged, and overhead walkways, sign and signals, fencing, and lighting are in poor condition. In view of this situation, annual maintenance costs are estimated at US\$30,000/km, with the cost of cleaning and sealing of joints adding a further US\$11,000/km every five years. These interventions cause increasingly frequent interruptions in traffic flow, due to maintenance work.<sup>16</sup>
- 1.9 **Problem to be addressed.** The current design of the road, now that it has reached the final stage of its useful life, limits the road's capacity and leads to unsafe conditions, with inadequate operating conditions at present that will rapidly become worse with the projected increase in demand. Compounding this, the poor condition of the road (pavement, lighting, signs, signals and markings, etc.) aggravates traffic conditions (increasing travel time and costs), reducing road safety and demanding greater investments in maintenance.
- 1.10 **The rehabilitation project.** Considering the factors cited above, the ALPEA rehabilitation project is essential to meet the projected increase in demand, with the levels of service and safety conditions vital to the growth of the LPMA. The works will be carried out on a 10.6 km stretch of road, between the Montes interchange in La Paz and the toll station at the entry to El Alto, on land that is mostly steep, rising from an altitude of 3,650 meters to 4,060 meters above sea level. The alternative selected will improve the current geometry of the road; the center line will be kept in its present location. The type of cross-section adopted consists of two lanes, plus one shoulder in each direction, 3.5 meters wide; the shoulder will have the same technical specifications as a lane, and will function in the future as a third lane; also included will be turnouts and/or designated emergency-vehicle stops, where the topography permits. Further features of the project will include: (i) rebuilding the drainage system; (ii) renovating the electrical equipment and lighting system; (iii) constructing stopping points, new pedestrian overhead walkways, and viaducts;

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<sup>15</sup> "Estudio y diseño de obras para la rehabilitación de la Autopista La Paz – El Alto" [Study and design of works for rehabilitation of the La Paz – El Alto Highway]. Socioeconomic and financial evaluation ([OEL 2](#)).

<sup>16</sup> During the useful life of a road with similar characteristics, estimated annual maintenance costs are US\$20,000/km, with a necessary further cost of US\$22,000 every 10 years for cleaning and sealing of joints.

- (iv) improving access ramps and traffic interchanges; (v) improving signs, signals and markings; and (vi) rehabilitating the fencing and installing speed reduction devices. These interventions will improve traffic conditions and reduce maintenance and vehicle operating costs.
- 1.11 **Beneficiaries.** The beneficiaries within the project's direct area of influence include users of the road and inhabitants of the municipios of La Paz and El Alto, consisting of some 1.79 million people, as well as other adjacent municipios. The indirect area of influence includes the rest of the department of La Paz (2,839,946 inhabitants),<sup>17</sup> the interdepartmental roads that come together at the F-02, and the roads that serve as alternatives to the highway, connecting El Alto with La Paz.
- 1.12 Given the additional specific use of this road, as the main access road for the airport with the country's second highest volume of air traffic, improving the road will have a direct positive effect on the overall functioning of the El Alto Airport system, and will provide airport users and workers with a more reliable, safer, and more economical access road, while also attracting traffic to and from the airport that currently uses less efficient and less safe alternative routes. An increase of 10 percentage points is expected in airport users who use the highway for travel to or from the airport.
- 1.13 **Institutional organization of the sector.** The apex authority is the Ministry of Public Works, Services, and Housing (MOPSV), which in turn oversees the Office of the Vice Minister of Transportation (VMT). The VMT has two divisions, the General Directorate of Land, River, and Lake Transportation and the General Directorate of Air Transportation. The VMT's functions include responsibility for proposing policies and standards, and implementing sector plans for land, sea, river, lake, rail, and air transportation as part of the country's national development strategies, which are designed to ensure the population's access to an integrated transportation system with its various modes of transport. The Bolivian Highway Administration (ABC), under the direction of the MOPSV, is an administratively autonomous institution operating under public law, and is responsible for planning and management of the RVF, as part of efforts to strengthen the decentralization process.
- 1.14 The ABC uses resources from various sources to finance RVF investments and road conservation: (i) the National Highway Account (CNC), supported by toll revenue and contributions from the excise tax on oil and oil derivatives; (ii) the General Treasury of the Nation; and (iii) external financing. Once the works are completed, the ABC will have sufficient resources to maintain them.
- 1.15 **Country strategy.** The National Development Plan and the Government Plan 2010-2015, proposed a new public policy framework which, with proper concern for macroeconomic stability in the different sectors—real, fiscal, external, and

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<sup>17</sup> Source: Population projections 2010, INE.

monetary/exchange—assures greater growth through increased productivity and competitiveness, and greater social equity through efforts to combat poverty.

- 1.16 The actions of the National Development Plan (PND) fall into four main categories: (i) *Bolivia Digna* [Dignified Bolivia] (a social/community-based program); (ii) *Bolivia Democrática* [Democratic Bolivia] (a program promoting social inclusion and redesign of government institutions); (iii) *Bolivia Productiva* [Productive Bolivia] (an economic program); and (iv) *Bolivia Soberana* [Sovereign Bolivia] (concerned with the country's international relations). In the productive realm, the PND provides priority support to a number of strategic economic sectors, including transportation, and emphasizes the State's new role as a key player in development. The PND views the objective of transportation infrastructure within the wider context of achieving poverty-reduction targets through the creation of productive jobs. In identifying and promoting the importance of the transportation sector as a major driver of economic development, the plan also acknowledges its current structural weaknesses and the need for interventions in all of the various transportation modes. Thus, the PND sets as a goal of the Government of Bolivia the promotion of efficient investments in road infrastructure, seeking to expand the country's internal linkages and external integration, in order to incorporate the entire population into productive activities and markets and services, and provide the nation's products with strategic and competitive access to export markets.
- 1.17 The strategy established in the Government Plan defines the road intervention in terms of the following elements: (i) integration of departmental capitals through paved access routes; (ii) development of integration corridors to improve Bolivia's links with neighboring countries and the rest of the world; (iii) priority emphasis on connectivity with border areas, as part of the process of territorial integration and international linkage; and (iv) improvement of road infrastructure in productive areas, with a view to enhancing competitiveness.
- 1.18 Moreover, the ABC defines its intervention on the RVF as involving the implementation of a conservation program and an improvement and expansion program. The conservation program identifies various levels of intervention, from routine, periodic maintenance and simple interventions (improvements) to more costly and complex interventions aimed at restoring the degraded road network (rehabilitations). The government policy establishes that the first level of intervention (routine, periodic maintenance) is to be financed with own resources. The improvement and expansion program is designed to restore roads whose pavement has deteriorated beyond what can be repaired by routine, periodic maintenance, as well as to extend the highways' useful life as long as possible, until it becomes necessary to alter the nature of the road network (from dirt or surfaced roads to paved roads). These interventions are to be financed primarily with international cooperation resources.

- 1.19 **Sector knowledge.** The Bank is actively engaged in the sector, through the administration, formulation, and financing of numerous transportation projects.<sup>18</sup> Moreover, the Bank's support program, in place since 2008 to enhance the ABC's operations, has contributed to improved technical dialogue and dialogue on fiduciary, administrative, and road management. The knowledge gained has been incorporated in the execution of the present operation.
- 1.20 **The Bank's country strategy.** The Bank's country strategy with Bolivia 2011-2015 (document GN-2631-1) was developed in consonance with the national priorities set forth in the National Development Plan. Seven strategic areas of cooperation have been identified within the plan's framework: transportation, water and sanitation, energy, early childhood development, health, education, and strengthening of public management. In addition, actions related to indigenous peoples and climate change issues are planned, as areas for crosscutting support. The "Transportation Sector Note" that accompanies the strategy outlines Bank support to the Government of Bolivia in financing strategic projects in all modes of transportation, reducing transportation costs and increasing the country's competitiveness. Thus, the following strategic actions are proposed in the road subsector: (i) conducting inventories of the departmental and municipal road network; (ii) ensuring that funds are allocated for maintenance tasks and investment costs; (iii) building out the RVF corridors, with investments to improve certain road segments; (iv) improving road safety and promoting better safety conditions for both road users and the populations served by the roads; and (v) establishing controls on freight loads and dimensions, to prevent premature deterioration of the roads.
- 1.21 **Rationale.** The proposed project is consistent with the guidelines of the Government of Bolivia's strategy established in the National Development Plan and the Government Plan, given that it promotes investment in road infrastructure to foster greater linkages within the country, while enhancing the competitiveness of the LPMA by lowering transportation costs. The project is also consistent with the ABC's policy of using external financing resources for the program to improve and expand the RVF. At the same time, the project relies on the Bank's experience in Bolivia's road sector, and is consistent with the criteria of the Bank's strategy, since it will help reduce transportation costs and travel times by improving the RVF. This will be accomplished not only through investments in infrastructure, but also with measures aimed at improving road safety, which is also in line with the strategic guidelines of the Bank's road safety initiative.
- 1.22 **Alignment with the lending targets of the Bank's Ninth General Capital Increase (GCI-9).** The project contributes to two of the lending targets set in the

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<sup>18</sup> Northern Corridor Highway Improvement Program, Santa Bárbara–Rurrenabaque Section (BO-L1011); Performance-based Road Maintenance Program II (BO-L1015); Road Conservation in the East-West Corridor (BO-L1031); Preinvestment Program for Strategic Transportation Projects (BO-L1056); Montero–Yapacaní Two-lane Segment of the Santa Cruz–Cochabamba Highway (BO-L1075); and Northern Corridor Highway Program, La Paz–Caranavi Segment, IIRSA Hub (BO0200).

“Report on the Ninth General Increase in the Resources of the Inter-American Bank” (document AB-2764): (1.1) lending to small and vulnerable countries, inasmuch as Bolivia is a Group “D” country; (1.4) lending to support regional cooperation and integration. The project also fits with two of the Bank’s five sector priorities: (b) infrastructure for competitiveness and social welfare; and (d) regional and global competitive integration. As indicated above, the highway is the main accessway to the El Alto International Airport, so the operation is consistent with a multinational targeting rationale (document GN-2650). The project will have a direct positive repercussion for the overall performance of the El Alto Airport system (see paragraph 1.12) ([OEL 5](#)).

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

- 1.23 **Objective.** This project seeks to improve traffic conditions on the La Paz – El Alto Highway, reducing travel times and costs and number of accidents through the rehabilitation and improvement of the roadway, which will foster local and regional economic development.
- 1.24 **Component 1. Civil works and road safety.** This component will finance the rehabilitation and improvement of the ALPEA over a distance of 10.6 km (in both directions), from the Montes traffic interchange, in La Paz, to the toll station arriving in El Alto, with interventions under the following subcomponents:
- 1.25 **Subcomponent 1.1. Civil works.** This subcomponent will finance the works necessary for to build, over the entire 10.6 km segment, two lanes plus a shoulder in each direction, with the shoulder having the same technical specifications as a lane, designed to function in the future as a third lane. In addition, the drainage system will be rebuilt, the electrical equipment and lighting system will be renovated, etc. This subcomponent will also finance the socioenvironmental mitigation activities envisaged in the environmental and social management report (ESMR). These interventions will help improve the condition of the road and increase its capacity, reducing travel times, number of accidents, and road maintenance and vehicle operating costs.
- 1.26 **Subcomponent 1.2. Road safety.** This subcomponent will finance the implementation of measures to address road safety conditions on the highway. These measures include: (i) construction of stopping points; (ii) new pedestrian overhead walkways; (iii) improvements to access ramps, bridges, and traffic interchanges; (iv) signs, signals, and markings; (v) fencing; (vi) speed reduction devices; and (vii) emergency stopping areas, etc. These interventions will increase road safety, reducing the number of accidents. This subcomponent will include financing of the communication plan.
- 1.27 **Component 2. Administration and supervision.** This component will finance the costs of: (i) project administration and inspection by the ABC; (ii) supervision of works; and (iii) audit, monitoring, and evaluation of the project based on the guidelines of the monitoring and evaluation plan ([REL 3](#)).

- 1.28 **Expected outcomes.** This intervention will contribute principally to: (i) reducing vehicle operating costs and travel times by improving traffic conditions; (ii) reducing maintenance costs;<sup>19</sup> and (iii) improving road safety conditions on the corridor.
- 1.29 **Costs.** This operation will be a specific investment loan. The total cost will be US\$35 million, to be financed by the Bank, with US\$28 million drawn from the Ordinary Capital (OC) and US\$7 million from the Fund for Special Operations (FSO). The costs are detailed in Table 1.

**Table 1. Cost and Financing (in US\$ millions)**

Categories		Total (IDB)
<b>1</b>	<b>Civil works and road safety</b>	<b>29.38</b>
<b>1.1</b>	<b>Civil works</b>	<b>25.61</b>
1.1.2	Preliminary works	0.56
1.1.3	Earth moving	0.97
1.1.4	Paving	15.48
1.1.5	Drainage works	2.73
1.1.6	Lighting	1.95
1.1.7	Supplementary works	2.96
1.1.8	Field service for inspection and supervision	0.49
1.1.9	Socioenvironmental mitigation	0.47
<b>1.2</b>	<b>Road safety</b>	<b>3.77</b>
1.2.1	Bridges, stopping points, and overhead walkways	2.60
1.2.2	Road safety, signs, signals, and markings	1.17
<b>2</b>	<b>Administration and supervision</b>	<b>2.63</b>
2.1	Supervision	2.14
2.2	Inspection	0.29
2.3	Audit, monitoring and evaluation	0.20
<b>3</b>	<b>Contingencies and price escalation (unallocated)</b>	<b>2.99</b>
	<b>Total</b>	<b>35.00</b>

<sup>19</sup> According to the traffic study estimates ([OEL 4](#)), the new road configuration will accommodate a capacity of 4,983 vehicles per hour in the downward direction and 4,126 vehicles per hour in the upward direction, with average speeds of 70 km/hour by 2018, representing savings in transportation time and costs compared to the alternative without the project. These estimates were made using the criteria established in the highway capacity manual published by the Transportation Research Board (TRB), based on extensive empirical evidence. The Bank's experience in Bolivia confirms the effectiveness of similar interventions in achieving the expected outcomes. The project completion report ([OEL 6](#)) for the Improvement Program for the Ventilla–Tarapaya Highway and Transportation Sector Support (1039/SF-BO) indicates that travel time reductions of 30% were achieved, along with operating cost reductions of between 55% and 64%, depending on the type of vehicle. According to the project's socioeconomic evaluation ([OEL 2](#)), the improvements will lead to savings (in economic values, discounted at 12%) in vehicle operating costs amounting to US\$298 million, travel time cost savings of US\$90 million, and maintenance cost savings of US\$12 million.

## C. Results framework

- 1.30 The main results of the project will be verified using the following indicators: (i) reduction in travel times on the road segment; (ii) reduction in operating costs for vehicles using the road segment; (iii) reduction in the number of accidents on the road segment; and (iv) increase in the percentage of El Alto International Airport passengers using the road to access the airport to and from La Paz. The main outcome of the project will be the 10.6 km of rehabilitated and improved road.
- 1.31 The proposed outcome and output indicators and means of verification will help optimize use of the information collected by ABC during project execution. All outputs and associated milestones will be verified directly on the basis of the ABC's supervision reports. Outcome indicators will be measured either directly or indirectly, according to the methodologies to be established for each indicator (see "Monitoring and evaluation plan," [REL 3](#)). These measurements and/or estimates will then be compared with the projections in the [Results Matrix \(see Annex II\)](#), which is part of the progress monitoring report (PMR). The outputs and milestones set, the targets and associated costs programmed, as determining factors in program execution and lessons learned, will all be reflected in the PMR.

## II. FINANCING STRUCTURE AND MAIN RISKS

### A. Financing instruments

- 2.1 The project is an investment loan under the specific works modality. The loan's repayment period is variable, depending on the source of the funding. In the case of the Ordinary Capital (OC), the repayment period will be 30 years; for the Fund for Special Operations (FSO), the repayment period will be lengthened to 40 years. The execution period and disbursement period will be four years, running from the effective date of the contract (once the Loan Contract Law has been ratified by the National Assembly and published in the Official Gazette of the Plurinational State of Bolivia). Table 2 below shows the projected disbursements.

Table 2. Projected Disbursements (US\$ millions)

Financing	Year 1	Year 2	Year 3	Year 4	Total
Total (IDB)	6.30	9.48	16.01	3.20	35.00

### B. Environmental and social safeguard risks

- 2.2 The project has been classified as environmental and social impact category "B" under the Bank's Environment and Safeguards Compliance Policy (Operational Policy OP-703). The policies triggered by this operation include the Access to Information Policy and the Operational Policy on Involuntary Resettlement (OP-710). For details on compliance with these policies, see the environmental and social management report (ESMR) ([REL 4](#)).

- 2.3 As part of the project analysis activities, the Bank has confirmed the project's degree of compliance with Bolivia's environmental laws and regulations, as well as with Bank policies. The project environmental impact assessment (EIA) has been reviewed, to ensure that the direct, indirect, cumulative, and regional impacts of the project have been appropriately identified and analyzed, and that the proposed mitigation and monitoring measures are sufficient to comply with the Bank's environmental and social policies, in particular, in terms of quantity and quality of information, implementation capacity, costs, responsible parties, timetable, and quality control, specifically the plans and programs required by Bolivia's environmental authorities. The Bank team has made recommendations to supplement certain aspects of the EIA prior to bidding on works. Moreover, the management capacity of the parties involved in implementing measures, actions, plans, and programs was evaluated, particularly in regard to environmental and social supervision during construction. The project's contingency plans, including identification of risks and procedures, have also been evaluated.
- 2.4 In general, the planned interventions for this project do not present major socioenvironmental impacts beyond those typical for works of this type. The majority will be largely temporary and confined to an area of influence immediately surrounding the center line of the roadway, extending out to include areas serving as the source for materials, camps, and asphalt plants. Since the project concerns an existing alignment, the works will be executed mostly within the current right-of-way, which will be expanded. While this will affect a limited number of families, it will not require any involuntary resettlement, but, rather, a replacement of losses. In the case of the proposed interchanges, the rights-of-way would involve parcels of urban land. Nevertheless, the following aspects will need to be considered: (i) management of the stability of embankments to prevent landslides; (ii) traffic control during construction; (iii) siting of bus stops and overhead walkways; (iv) road and pedestrian safety during construction and operation; and (v) access to residences and populated areas within the project target area. A communication plan will also have to be implemented, to keep the population informed on the nature and scope of the works, in order to forestall opposition that could result in blockage and/or interruption of the works. Before the start of works, the executing agency will provide evidence that the communication plan is being implemented, to keep the population informed on the nature and scope of the works.
- 2.5 The most salient details of the environmental and social studies and plans are summarized in the ESMR ([REL 4](#)). The project will be executed according to the requirements of the ESMR, specifically as stipulated in Section VI, "Management of environmental, social, health, safety, and labor impacts and risks." Recognizing that the environmental management plans will be adjusted and supplemented by the construction firm that is awarded the bid, the final version of these plans will be sent to the Bank for its no objection prior to the start of construction works. The Bolivian Highway Administration (ABC) will present, to the Bank's satisfaction: (a) prior to bidding on works, the Plan (or Program) for Replacement of Losses



(PRP); and (b) prior to the start of works: (i) evidence that 50% of the rights-of-way for the road have been cleared; and (ii) the final version of the environmental management plans, adjusted, supplemented, approved by the ABC.

- 2.6 **Gender.** It has been observed that pedestrians engage in unsafe behavior in the project area, particularly not properly using the overhead walkways for crossing the road. The project baseline and outcomes will provide data on overall reduction of pedestrian accidents—women in particular—so as to assess whether there are gender differences in the reduced number of traffic accidents as a result of the construction of infrastructure such as overhead walkways and better signs and markings.

### C. **Fiduciary risk**

- 2.7 The ABC has sufficient capacity and experience to conduct the procurements, disbursements, and respective supporting documentation. Moreover, considering that the fiduciary risk is low, and that an institutional strengthening plan for the ABC was developed during 2012, to continue building its fiduciary capacity (preparation of standard documents, instructions on maturities, mapping of fiduciary human resources at the ABC, a workshop on the results of the ABC's ex post reviews, design of standardized terms of reference, targeted training of strategic ABC personnel, and strengthening the functioning of the Procurement Plan Execution System (SEPA), etc.), once the period begins for fulfillment of the conditions precedent to the operation, the institution's fiduciary capacity will be strengthened, to ensure that the conditions are in place for effective synchronization of the start of works supervision and execution, as well as procurement planning for the operation. The procurement procedures will be subject to ex post review, up to the threshold for international competitive bidding;<sup>20</sup> this threshold may subsequently be raised, based on the institutional capacity update.

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

- 2.8 **Economic feasibility.** The economic evaluation of the project<sup>21</sup> ([OEL 2](#)) quantified the benefits to users in terms of reduced travel times, operating costs, and economic costs of investment, operation, and maintenance resulting from implementation of the project. The analysis spanned a period of 20 years. The projected economic internal rate of return (EIRR) for the project was 63.10%, and the net present value (NPV) was US\$366.08 million (discounted at 12%). The sensitivity analyses confirmed that the project was robust under more adverse scenarios, demonstrating that a reduction in benefits on the order of 20% would reduce the EIRR to 56.01%; a 20% increase in costs would reduce the EIRR to 57.24%; and a scenario combining a 10% reduction in benefits with a 10% increase in costs would reduce the EIRR to 56.69%. Table 3 below summarizes the results of the cost-benefit and sensitivity analyses conducted.

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<sup>20</sup> Including internationally short-listed consulting firms.

<sup>21</sup> Detailed in the Highway Design and Maintenance Standards Model (HDM-4).

**Table 3. Results of the Cost-Benefit and Sensitivity Analyses**

Indicator	Base case	20% reduction in benefits	20% increase in costs	10% reduction in benefits and 10% increase in costs
NPV (US\$ millions)	366.08	288.34	361.56	324.95
EIRR (%)	63.10	56.01	57.24	56.69

- 2.9 **Public management and governance.** In order for the works to progress according to the planned timetables, there will need to be effective coordination between the ABC and the municipios of La Paz and El Alto, particularly with regard to bidding processes, traffic control during the course of the works (see paragraph 2.12), etc. To this end, interagency coordination agreements and bodies will be established, and training workshops will be held for the staff involved.
- 2.10 **Sustainability of investments.** Once the rehabilitation and improvement works have been completed, the road will require a proper maintenance program to ensure the sustainability of the works and of their outcomes. For this, the road will need to be incorporated into a financing and maintenance arrangement. Such maintenance is currently included in the ABC's Road Conservation Program, which draws on resources from the National Highway Account (CNC) to maintain the Basic Road Network (RVF), according to criteria set forth in the ABC's conservation manual. Once the works are completed, this same arrangement will continue to be used to maintain the road.<sup>22</sup> The ABC will also deliver the five-year maintenance plan to the Bank, following the last disbursement, and will deliver maintenance reports on the investments financed by the program, annually for a period of five years, beginning the year following completion of the works.
- 2.11 **Incremental costs.** In order to reduce the risk of possible incremental costs on the project, a review was made of the technical, economic, and socioenvironmental study (TESA) ([OEL 8](#)). This review was prepared by consultants engaged by the ABC, to more clearly define the scope of the project components, and the necessary adjustments were made to the budget. Moreover, as a condition precedent to bidding on works, the executing agency will present, for acceptance by the Bank, the supplemented final design<sup>23</sup> of the project works, including the technical aspects agreed upon with the Bank, once approved by the ABC. This will reduce the likelihood: (i) that the offers received will exceed the estimated budget; (ii) that there will be substantial changes to the design and/or number of works during construction; and (iii) that the deadlines for completing the works will be extended as a result of revisions to the design and/or an increase in the quantity, causing cost increases due to an extension of the works and supervision contracts, or claims by

<sup>22</sup> In the framework of the Performance-based Road Maintenance Program (1940/BL-BO), activities aimed at developing ABC management capacities and instruments are being conducted, in order to consolidate a modern, sustainable system of management and conservation for the RVF. ABC's budget execution has grown from US\$115 million in 2002 to more than US\$528 million in 2012.

<sup>23</sup> The completion of the final design will be put up for bid with resources from loan 2498/BL-BO.

the contractors. A study was also be done to estimate the likelihood of incremental costs on the project, using a Montecarlo simulation. The results of this analysis indicate a 95% probability that the project's contingencies will not be higher than 9.6% of the value of the works ([OEL 3](#)). The cost table includes the project contingencies.

- 2.12 **Traffic control during the course of the works.** The high volume of traffic on the road, which causes congestion, combined with the lack of alternative routes, will require adequate planning for traffic control measures during the course of the works, in order to prevent a collapse of the road network linking the cities of La Paz and El Alto. For this purpose, a traffic control study will be done, with recommendations to be included in the bidding documents.

### III. EXECUTION AND ADMINISTRATION PLAN

#### A. Summary of implementation arrangements

- 3.1 **Borrower and executing agency.** The borrower will be the Plurinational State of Bolivia, and the executing agency will be the Bolivian Highways Administration (ABC).
- 3.2 **Execution mechanism.** The project will be executed exclusively by the ABC, which will be responsible the programming of works and services to be contracted, preparation of bidding documents, and the contracting process. The central office of the ABC will conduct the bidding processes, while the La Paz regional office of the ABC will be responsible for project inspection. The ABC's socioenvironmental unit will support works construction, perform works inspections, and ensure compliance with all socioenvironmental specifications and management plans designed for the works. ABC's central office will also be responsible for supporting various aspects of project execution, including coordination of activities among the ABC units involved, and preparation of reports to be delivered to the Bank.
- 3.3 In terms of the fiduciary control of resources, the ABC, acting through its National Office of Financial Administration, will be responsible for: (i) implementation and maintenance of effective systems for contract administration, financial/accounting administration, and administration of the internal control system for managing project resources, pursuant to the Bank's requirements; (ii) timely submission of requests for disbursements, and supporting documentation for eligible expenditures; (iii) preparation and presentation of six-monthly financial reports on the status and use of resources provided in the form of advances of funds, consolidated financial reports for the project, and other required reports; (iv) maintenance of an exclusive bank account, separate from other sources, to manage the Bank resources, and use of the IDB's integrated financial management system for accounting records and financial reports and for submission of disbursement requests; (v) maintenance of an effective record-keeping system for the supporting documentation for eligible expenditures, for verification by the Bank and by the external auditors; and (vi) keeping all information of a public nature up-to-date on the entity's website,

including contracting processes, contract progress, results achieved, and financial statements.

- 3.4 **Procurement.** Project procurements will be conducted in accordance with the “Policies for the procurement of works and goods financed by the IDB” (document GN-2349-9) and the “Policies for the selection and contracting of consultants financed by the IDB” (document GN-2350-9).
- 3.5 **Disbursements.** The loan will be disbursed in the form of advances of funds. The frequency of the advances will be based on the project financial programming, to be updated periodically by the ABC. The Bank may make a new advance of funds when at least 80% of the total funds disbursed as advances has been justified. The financial review of disbursement requests will be done on an ex post basis.

**B. Summary of monitoring and evaluation arrangements**

- 3.6 The program’s monitoring and evaluation arrangements include inspection visits, administration missions, six-monthly status reports, annual external audits, and a final report to evaluate outcomes, as detailed in the monitoring and evaluation plan ([REL 3](#)).

**C. Significant activities post approval**

- 3.7 The executing agency will submit, for approval by the Bank, the final version of the technical, economic, and socioenvironmental study (TESA), including the final project design incorporating any changes made by the ABC, once it has been approved by the ABC.

Development Effectiveness Matrix			
Summary			
I. Strategic Alignment			
1. IDB Strategic Development Objectives	Aligned		
Lending Program	i) Lending to small and vulnerable countries, and ii) Lending to support regional cooperation and integration.		
Regional Development Goals	Paved road coverage (Km/Km²).		
Bank Output Contribution (as defined in Results Framework of IDB-9)	Km of inter-urban roads build or maintained/upgraded.		
2. Country Strategy Development Objectives	Aligned		
Country Strategy Results Matrix	GN-2631-1	Better coverage of paved roads.	
Country Program Results Matrix	GN-2696	The intervention is not included in the 2013 Country Program Document.	
Relevance of this project to country development challenges (If not aligned to country strategy or country program)			
II. Development Outcomes - Evaluability	Highly Evaluable	Weight	Maximum Score
	8.6		10
3. Evidence-based Assessment & Solution	9.3	33.33%	10
4. Ex ante Economic Analysis	10.0	33.33%	10
5. Monitoring and Evaluation	6.4	33.33%	10
III. Risks & Mitigation Monitoring Matrix			
Overall risks rate = magnitude of risks*likelihood	Medium		
Identified risks have been rated for magnitude and likelihood	Yes		
Mitigation measures have been identified for major risks	Yes		
Mitigation measures have indicators for tracking their implementation	Yes		
Environmental & social risk classification	B		
IV. IDB's Role - Additionality			
The project relies on the use of country systems (VPC/PDP criteria)	Yes	Financial Management: Budget, and Treasury.	
The project uses another country system different from the ones above for implementing the program			
The IDB's involvement promotes improvements of the intended beneficiaries and/or public sector entity in the following dimensions:			
Gender Equality			
Labor			
Environment			
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	BO-T1201.	
The ex-post impact evaluation of the project will produce evidence to close knowledge gaps in the sector that were identified in the project document and/or in the evaluation plan			

The objective of the program is to improve traffic conditions of the "La Paz - El Alto" highway. The background of the project presents data on the current condition of the road network in Bolivia. The intervention logic is clear, the rehabilitation and improvement of the highway will improve traffic conditions and reduce travel time and costs, as well as accidents. In the long term, these improvements will encourage local and regional economic development. Not all product indicators are SMART; the indicator of civil works is general, which does not allow identifying specific improvement and rehabilitation of the highway. Baselines for the performance indicators regarding accidents will be defined during the first year of the project. Targets are identified for all indicators, and so are the means of verification; however, these are not specific for results indicators.

The proposal presents a cost-benefit analysis that quantifies the user benefits in terms of reduced travel time, transport costs and maintenance, as well as road accidents. The study also presents a general sensitivity analysis scenario where the main benefits are reduced and investment costs are increased. The program will be evaluated by an ex-post economic analysis and a before and after methodology.

Major risks and mitigation measures are identified, as well as indicators to monitor the implementation of those mitigation measures.

## RESULTS MATRIX

<b>Project objective</b>	The objective of this project is to rehabilitate the La Paz – EL Alto Highway (10.6 km in length) and make road safety improvements, which will improve serviceability conditions, reduce the number of accidents in the area, and foster local and regional economic development. This intervention will contribute to: (i) reducing transportation costs and travel times through serviceability improvements; and (ii) improving road safety conditions on the highway.
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Results	Unit	Base (2013)	Target (2017)	Remarks/Mean of verification
<b>Reduction of average travel time on the highway segment</b>				
<b>Outcome indicators</b>				
Average travel time <sup>1</sup>	Minutes	9.78 <sup>2</sup>	9.08	Three months after works completion, field determinations and estimates will be made, according to the economic evaluation parameters.
<b>Reduction of annual vehicle operating costs on the highway segment</b>				
<b>Outcome indicators</b>				
Savings in annual vehicle operating costs	US\$ millions/year (constant 2011 values)		298 <sup>3</sup>	Three months after the works completion date (final acceptance by the ABC), field determinations and estimates will be made, according to the economic evaluation parameters. The target is based on the discounted annual net benefits from the HDM4 model, defined by the universe of vehicles encompassed in the economic evaluation and its projections.
<b>Reduction of number of accidents on the highway segment</b>				
<b>Outcome indicators</b>				
Reduction of fatal accidents per year	Percentage	-	10%	The baseline will be set in the first year of execution, through the contracting of a local individual consultant.
Reduction of accidents involving injuries for users	Percentage	-	10%	
Reduction of accidents involving injuries or fatalities for pedestrians	Percentage	-	10%	The reduction of number of accidents will be verified based on a review of police reports and/or other available sources of information, using a methodology to be agreed upon with the executing agency.
Reduction of accidents involving injuries or fatalities for female pedestrians	Percentage	-	10%	

<sup>1</sup> Times estimated based on annual average speeds in the HDM4 model of the socioeconomic study: 65 km/hour and projected 70 km/ hour, on the 10.6 km segment, corresponding to the average for all vehicles traveling on the road.

<sup>2</sup> Estimated based on the economic evaluation study of the final design for the highway segment.

<sup>3</sup> Estimated based on the projection of the economic evaluation study – discounted annual net benefits.

Increase of percentage of El Alto International Airport passengers who use the highway to access the airport				
Outcome indicators				
Percentage of airport users who utilize the highway	Percentage	70%	80%	<p>The baseline has been set on the basis of a survey of origin/destination points conducted on the airport access roads among users of the El Alto International Airport.</p> <p>The percentage and increase was estimated on the basis of the traffic that would be attracted to the segment from alternative routes connecting the airport and La Paz, which, combined with the highway, total 92%.</p>

Outputs/Costs (US\$000s)	Unit	Base	Year 1 (2014)	Year 2 (2015)	Year 3 (2016)	Year 4 (2017)	Target (2017)	Remarks/Mean of verification
COMPONENT I. CIVIL WORKS AND ROAD SAFETY								
10.6 km rehabilitated and improved on the La Paz – El Alto Highway	km	0	-	-	-	-	10.6	Final acceptance report on works execution (ABC)
	US\$	0	5,123 <sup>4</sup>	7,378	12,533	583	25,617	
MILESTONES								
Road base constructed	m <sup>2</sup>	0	-	25,295	-	-	25,295 <sup>5</sup>	Execution will be verified via works progress reports prepared by the supervision firm and approved by the ABC.
Concrete paving slabs constructed	m <sup>2</sup>	0	-	15,721	55,025	-	70,747 <sup>4</sup>	

<sup>4</sup> Corresponds to the advance of funds resources of the works and supervision contract, to be requested by the bidder solely to pay for plant, equipment, materials, and mobilization expenses required specifically for the execution of the contracts.

<sup>5</sup> The volumes included for monitoring, using verifiable milestones, are estimates from the final design study commissioned by the ABC. These may be modified based on any recommendations and amendments to the design made during works execution by the technical/environmental supervision firm. In addition, the verifiable milestones may be reformulated according to the current timetable submitted by the winning bidder for the work.

Outputs/Costs (US\$000s)	Unit	Base	Year 1 (2014)	Year 2 (2015)	Year 3 (2016)	Year 4 (2017)	Target (2017)	Remarks/Mean of verification
10.6 km with road safety measures implemented on the La Paz – El Alto Highway segment	Unit	0	-	-	-	-	10.6	Final acceptance report on works execution (ABC)
	US\$	0	753 <sup>3</sup>	1,384	1,280	350	3,767	
MILESTONES								
Viaducts constructed	Unit	0	-	3.0	1.0	-	4.0 <sup>6</sup>	Execution will be verified via works progress reports prepared by the supervision firm and approved by the ABC.
Bus stops constructed	Unit	0	-	-	2.0	5.0	7.0 <sup>5</sup>	
Interchanges constructed	Unit	0	-	-	1.0	1.0	2.0 <sup>5</sup>	
Road safety signs, signals, and markings implemented	Km	0	-	-	-	-	10.6 <sup>5</sup>	
Overhead walkways in service	Unit	0	-	-	7.0	12.0	19.0 <sup>5</sup>	
COMPONENT II. ADMINISTRATION AND SUPERVISION								
	US\$	0	426 <sup>3</sup>	721	706	775	2,629	Resources allocated to administration and technical/environmental supervision of the operation.
Works supervision	Unit	0	12	-12	-12	-12	48	Approved reports.
Audit	Unit	0	1	-1	-1	-1	4	
Ex post evaluation	Unit	0	-	-	-	1	1	Approved ex post evaluation report.
UNALLOCATED. CONTINGENCIES, AND PRICE ESCALATION								
Does not reflect component-related outputs	N/A	-	-	-	-	-	-	Resources allocated to contingencies and price adjustments.
	US\$	0	0	0	1,493	1,493	2,987	

<sup>6</sup> The volumes included for monitoring, using verifiable milestones, are estimates from the final design study commissioned by the ABC. These may be modified based on any recommendations and amendments to the design made during works execution by the technical/environmental supervision firm. In addition, the verifiable milestones may be reformulated according to the current timetable submitted by the winning bidder for the work.



## **FIDUCIARY AGREEMENTS AND REQUIREMENTS**

<b>Country:</b>	Plurinational State of Bolivia
<b>Project name and number:</b>	Rehabilitation of the La Paz – El Alto Highway (BO-L1093)
<b>Executing agencies:</b>	Administradora Boliviana de Carreteras [Bolivian Highway Administration] (ABC)
<b>Prepared by:</b>	Carolina Escudero (PRM) and Zoraida Argüello (FM)

### **I. EXECUTIVE SUMMARY**

- 1.1 The Bolivian Highway Administration (ABC) is responsible for the planning and administration of the country's Basic Road Network (known by its Spanish-language acronym, RVF). Within its portfolio of projects are five loan operations with the Bank, one of which concludes this year. Due to the magnitude of operations it administers, funded by the Bank and other sources of financing, it has formed teams of professionals specializing in executing works and contracts, according to the financing source. The ABC is considered to have sufficient personnel, and the necessary knowledge, to continue managing Bank operations. Given the size of the programs being executed by the ABC, there is a need for ongoing training and advisory support with regard to policies, rules and regulations, and fiduciary procedures.
- 1.2 Activities involving contracting and payments chargeable to the project will be conducted at the ABC's central office, located in La Paz. Accounting records for the operation will be maintained within the Integrated Administrative Modernization and Management System (SIGMA). The IDB's Loan Management System (LMS/IDB) will be used for financial reports required by the Bank. The model bidding and contracting documents agreed upon with the ABC under loan BO-L1075 will be used for the execution of this operation, as will the SICOES country procurement subsystem, which has been authorized for use in Bank operations and for the publication of calls for proposals.
- 1.3 In terms of the fiduciary sector, the preparation of procurement plans and disbursements during the execution of the operation will be conducted in a way that contributes to achieving the expected outcomes.

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

- 2.1 The ABC, as a decentralized public institution, is governed by Law 1178 of 20 July 1990 on the systems for administration and control of State resources and their relationship with country public planning and investment systems.

- 2.2 The ABC uses the SIGMA system for all of its financial records, which makes information on budget execution available in a safe and reliable way. However, this system does not provide information in nonlocal currency, nor does it conform to the investment categories established in the project cost table. Moreover, it does not record expenditures on a cash basis. Thus, LMS/IDB will be used as an auxiliary accounting and reporting system for project accountability and financial statements. This system will be used by the executing agency until such time as another system is integrated into the government's accounting system.<sup>1</sup>
- 2.3 As a government entity, the ABC is subject to supervision by the Office of the Comptroller General (CGE), supervision by the Internal Audit Unit, and annual external control by an independent audit firm.
- 2.4 The SICOES system ([www.sicoes.gob.bo](http://www.sicoes.gob.bo)) will be used as a publicity mechanism for calls for proposals and for reporting the results of national competitive bidding procedures and simplified processes in Bolivia.

### III. EVALUATION OF FIDUCIARY RISK AND MITIGATION MEASURES

- 3.1 The overall fiduciary risk<sup>2</sup> of the operation is rated as low, making it unnecessary to establish an action plan to mitigate risks. Nevertheless, in the workshop to identify risks associated with project execution, it was agreed that training sessions would be held for the bidding committee and for the legal advisors, in order to strengthen their knowledge of IDB rules and regulations.

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

- 4.1 **Exchange rate agreed upon with the executing agency for accountability.** The exchange rate agreed upon with the executing agency for converting expenditures in local currency to the currency of the operation will be the exchange rate in effect in the borrowing country on the effective payment date of the expenditure.
- 4.2 **Financial statements and other audited reports.** During the execution period the ABC will deliver the program financial statements annually, audited by an independent audit firm, within 120 days after the close of each fiscal year. The executing agency will deliver an audited, integrated report every six months on contracting processes, procurements, and disbursements. The first six-monthly report will be delivered within 60 days after the close of the first half of each accounting period; the second report, covering the second half of the year, will be delivered as an integral part of the audited financial statements.

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<sup>1</sup> For the launch of this project, the ABC is expected to use the government accounting system with its integrated project module for accountability purposes. The ABC will begin to use the system this year on a pilot basis.

<sup>2</sup> See the [Project Risk Management matrix](#).

## V. PROCUREMENT OF GOODS, WORKS, AND CONSULTING SERVICES

- 5.1 **Procurement execution.** Procurements will be conducted in accordance with policy documents GN-2349-9 and GN-2350-9, and will be executed by the ABC.
- a. **Procurement of works, goods, and nonconsulting services.** Contracts for works, goods, and nonconsulting services generated under the program and subject to international competitive bidding (ICB) will be executed using the standard bidding documents (SBDs) issued by the Bank. Processes subject to national competitive bidding (NCB) will be executed using national bidding documents agreed upon with the Bank (or satisfactory to the Bank, if not yet agreed upon). Shopping processes will use the model documents prepared by the Bank's Country Office in Bolivia; any changes to these documents will require the no objection of the Bank. The contents of the FIDIC major works contract of the DEL will be used, with no changes unless authorized by the Bank. A prequalification process to precede the bidding is not recommended, since there is not expected to be any shortage of competing qualified national and international bidders.
  - b. **Selection and Contracting of Consultants.** Contracts for consulting services generated under the project, regardless of the contract amount, will be executed using standard request for proposals (RFP) issued by or agreed upon with the Bank (or satisfactory to the Bank, if not yet agreed upon) and their corresponding contracts, with changes authorized by the Bank. The project sector specialist will be responsible for the review of terms of reference for the contracting of consulting services.
    - 1. **Selection of consulting firms** will be conducted using the standard RFP issued by the Bank or by the Bank Country Office in Bolivia.
    - 2. **Short list of consulting firms** may be comprised solely (100%) of Bolivian firms for contracts valued below the threshold amounts established by the Bank for the country. For Bolivia, this threshold is US\$200,000.
    - 3. **Selection of individual consultants** will take into account the consultants' qualifications to perform the work, based on a comparison of the qualifications of at least three candidates. In the case of Bolivia, when the situation so requires or as deemed appropriate, the SICOES system may be used to publish calls for bids for the selection of individual consultants or notices may also be published in the local or international press or in UNDB, to obtain information on qualified consultants.
  - c. **Direct contracting.** Individual expenditures of less than US\$500, individually, and totaling no more than US\$5,000, may be contracted directly for the sake of efficiency and speed in execution. These will be subject to ex ante review, and must be approved by the project team leader as part of the procurement plan.

- d. **Procurement plan.**<sup>3</sup> The ABC will publish the procurement plan in the Procurement Plan Execution System (SEPA) and update it at least once a year, or as necessary, to reflect the project's actual execution needs and progress made.
- e. **Domestic preference.** For the execution of this operation, domestic preference will not be included in the planned procurement procedures for goods.
- f. **Terms of reference and technical specifications.** The program sector specialist will be responsible for the review of terms of reference for the contracting of consulting services the technical specifications for contracting of works, goods, and nonconsulting services.

## 5.2 Table of threshold amounts (US\$000s)

Works			Goods and nonconsulting services			Consulting	
ICB	NCB	Shopping	ICB	NCB	Shopping	International publicity consulting	Short list 100% national
More than US\$3,000	US\$3,000 or less	Less than US\$250	More than US\$250	US\$250 or less	US\$50 or less	More than US\$200	US\$200 or less

## 5.3 Main Procurements. The main procurements planned for this operation are as follows:

Activity	Type of Bidding	Estimated Date	Estimated Amount (US\$000s)
<b>Individual consultants</b>			
Preparation of midterm evaluation report	IC	Q3-2015	15
Preparation of final report on project outcomes	IC	Q3-2017	9
<b>Consulting firms</b>			
Technical and environmental supervision of highway rehabilitation	QCBS	Q4-2013	2,131
External financial audit	QCBS	TBD	120
Measurement of outcomes and ex post evaluation	QBS	TBD	60
<b>Works</b>			
Civil works, rehabilitation of the La Paz – El Alto Highway segment	ICB	Q1-2014	29,384

\* To access the procurement plan for the first 18 months, click here: [\(REL 1\)](#).

<sup>3</sup> See [Procurement plan for the first 18 months of execution](#).

- 5.4 **Procurement supervision.** The thresholds for post review are set on the basis of the fiduciary capacity of the executing agency, the complexity of the procurements, and/or external factors that may affect the execution of procurements in due time and manner. Given the ABC's fiduciary management capacity for procurement, the project could be executed with ex post review for procurement processes up to 100% of the ICB threshold, based on the grid below (direct contracting and procurements not listed in the grid will be subject to ex ante review). According to the matrix of risks identified for the project, the fiduciary risk for project procurements is low. In view of the foregoing, six-monthly procurement supervision visits and annual ex post reviews will be conducted, to update the fiduciary risk level and monitor the progress of construction and works supervision contracts.

Threshold for ex post review			
Works	Goods and nonconsulting services	Consulting services (firms) Short list may be 100% national	Consulting services (individuals)
Contracts for US\$3,000,000 or less	Contracts for US\$200,000 or less	Contracts for US\$200,000 or less	No threshold amount

Direct procurement will be subject to ex ante review, without exception.

- 5.5 **Recurrent expenditures.** These operating and maintenance expenditures are required for the program to function during its useful life, and include: rentals for radio, print, and television communications, translation, bank charges, basic office supplies, photocopying, mailing, and fuel. These expenditures will be financed by the project as part of the annual budget approved by the Bank, and have been included in the program procurement plans. Recurrent expenditures may be contracted according to the administrative procedures of the executing agency, provided that such procedures are substantially analogous to the Bank's procedures and comply with the principles of the Bank's procurement policies. The executing agency will deliver reports on expenditures of this type to the Bank on a quarterly basis.
- 5.6 **Records and files.** The ABC will be responsible for establishing the supporting documentation, procedures, and controls necessary for program execution, as well as the relevant safeguards, as provided in the loan contract and local laws. The ABC has a documentation center deemed satisfactory according to the inspection and evaluation conducted by the Bank under previous operations. A visit is recommended to confirm that this filing system is in proper condition, for which support will be requested from the records specialist at the Bank's Country Office in Bolivia.

## VI. FINANCIAL MANAGEMENT

- 6.1 **Programming and budget.** The ABC's General Directorate of Planning and Budget is responsible for preparing the general budget, based on the information submitted by the project executing agencies, and forwarding it for inclusion in the investment budget.
- 6.2 **Accounting and information systems.** The Integrated Administrative Modernization and Management System (SIGMA) will be used as the principal basis for the recording of funds. This system brings together in a single record, at different points in the accounting process: budget records (budget execution), net worth records (assets, liabilities, equity, and balance), and treasury records (cash transfers). Accounts will be kept on an accrual basis, using International Accounting Standards (IAS) and government standards in parallel, owing to the fact that execution must be through the SIGMA system, which uses the latter. The LMS/IDB system will also be to present the program financial statements on a cash basis.
- 6.3 **Disbursements and cash flow.** The primary disbursement modality will be advances of funds, without precluding the use of any other mechanism by the Bank to make payments or reimburse expenditures. Disbursements under the advance of funds modality will be based on liquidity needs, reflected in financial programming for a period of no more than six months. In order to request new advances, justification must be provided for at least 80% of the previous advance. Expenditures made with the funds advanced will be subject to ex post review.
- 6.4 **Administration of the loan proceeds.** The resources disbursed to the project will be deposited in a special account at the Central Bank of Bolivia (BCB) and subsequently transferred in local currency to the respective account, following the procedures established by the Office of the Vice Minister of the Treasury for the handling of loan proceeds.
- 6.5 **Internal controls and internal audit.** The Internal Audit Unit will establish, as part of its annual work plan, a scope for the evaluation of the project's internal control system, delivering a report on its evaluation to the DGAF.
- 6.6 **External controls and reports.** An external audit will be done on an annual basis, financed with the loan proceeds. The audited reports will include an integrated report on procurement processes and disbursements. The first report will be delivered 60 days after the close of the first half of each year; the second report of the year will be delivered as an integral part of the audited financial statements.

- 6.7 **Financial supervision plan.** Supervision of expenditures will be on an ex post basis. However, the annual supervision plan will include at least the following activities:
1. A visit to review the procurement processes and disbursements planned for the year; and
  2. A visit to validate the internal control system instituted by the entity for the administration of resources.
- 6.8 The supervision activities may be adjusted on the basis of the project risk evaluation performed annually by the fiduciary team in conjunction with the executing agency, and the external audit reports.

## **VII. EXECUTION MECHANISM**

- 7.1 The ABC will utilize its own fiduciary personnel for project fiduciary operations. The execution mechanism is described in the proposal for operation development.