DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

GUYANA

ROAD IMPROVEMENT AND REHABILITATION PROGRAM

(GY-L1027)

LOAN PROPOSAL

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ELECTRONIC LINKS

REQUIRED

1. Program Procurement Plan
   http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=2120848
2. Annual Operating Plan (POA)
   http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=2120841
3. Monitoring & Evaluation Arrangements
   http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=2120838
4. ESMR and ESMP
   http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=2120820
   http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=2120836

OPTIONAL

1. Pavement Condition Survey Report
   http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=2117009
2. Geometric Design Criteria
   http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=2117125
3. Pavement Design
   http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=2117127
4. Classified Traffic Count
   http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=2117133
5. Structural Feasibility Studies
   http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=2117142
6. Economic Evaluation
   http://idbdocs.iadb.org/WSDocs/getDocument.aspx?DOCNUM=2117144

ABBREVIATIONS

CJIA	Cheddi Jagan International Airport
EA	Executing Agency
EBR	East Bank Road
EIA	Environmental Impact Assessment
EIRR	Economic Internal Rate of Return
ESMP	Environmental and Social Management Plan
FSO	Funds for Special Operations
GOG	Government of Guyana
ICB	International Competitive Bidding
IDB	Inter-American Development Bank
MDB	Multi Lateral Development Bank
MPWC	Ministry of Public Works and Communication
NPV	Net Present Value
OC	Ordinary Capital
PEU	Project Executing Unit
RMMS	Routine Maintenance Management System
RAC	Road Agency Costs
TC	Technical Cooperation
WSG	Works Services Group

PROJECT SUMMARY
GUYANA
ROAD IMPROVEMENT AND REHABILITATION PROGRAM
(GY- L1027)

Financial Terms and Conditions

Borrower: Co-operative Republic of Guyana				
Executing Agency: Ministry of Public Works and Communication			FSO	OC
		Amortization Period:	40 years	30 years
Source	**Amount**	Grace Period:	40 years	5 ½ years
IDB (FSO – Blend)	12,4	Disbursement Period:	5 years	5 years
IDB (OC – Blend)	12,4	Supervision and Inspection Fee:	N/A	*
Other	-	Interest Rate:	0.25%	LIBOR
Local	-	Credit Fee:	N/A	*
Total	24,8	Currency:	USD	USD, SCF

Project at a Glance

Project Objective/Description:

The main objective of the project is to enhance urban and suburban mobility and safety, improve accessibility to an important agricultural zone, lower transport costs and reduce accident rates, through the rehabilitation and improvement of the East and West Canje Roads, the urban arterial network in Georgetown, the access road to the airport from the East Bank Road (EBR), and localized interventions on the EBR between the Cricket Stadium and Diamond / Grove. Specific objectives of the Program will be the improvement of the road reliability and driving conditions by rehabilitating and improving the different road corridor.

Expected results include: i) reduction of generalized transport and logistical costs, contributing to economic growth and social development, ii) reduction of future periodic road maintenance costs, iii) improved mobility within the Georgetown Metropolitan Area, and accessibility of surrounding communities to markets and services in the suburban and rural areas, and iv) reduction of traffic related fatalities and injuries.

Conditions prior to first disbursement: a) The finance and accounting section of WSG shall be fully staffed, including a Finance Comptroller, with commitments for at least the first year of project execution (¶2.7); b) An accounting software suitable for project accounting is in place, and accounting procedures are established, enforced and maintained up to date (¶2.7); c) At least three staff of the finance and accounting section of WSG are fully trained in the use of the accounting software (¶2.7).

Special execution conditions: a) The bidding documents for the selection of contractors to carry out the civil works shall incorporate the following requirements: i) the final technical designs, ii) the Environmental and Social Management Plan, as well as the General and Particular Environmental Specifications; and iii) the requirement that Contractors hire an Environmental Engineer as part of their field personnel. (¶3.3); b) Prior to signing the contract with the Contractors to carry out the civil works, the Executing Agency will demonstrate that it has selected and hired the firms to supervise such civil works. (¶3.4); c) The bidding documents for the selection of the supervisory firms of the civil works must incorporate the requirement that an Environmental Inspector is hired as part of their field personnel. (¶3.5); d) Prior to authorizing the firm to carry out the final technical designs of the civil works, the Executing Agency will submit the corresponding engineering studies to the Bank for its no objection. (¶3.9); e) Prior to tendering the civil works, the EA will submit to the Bank, for its no objection, the engineering, environmental and cost-benefit analysis and final technical designs, and, if necessary the relocation plans. (¶3.10); f) Prior to the commencement of the first civil works contract WSG will hire and/or appoint a social specialist and an environmental specialist with experience in civil works, with preference in roads projects. If an expert with experience in both social and environmental issues is available, the responsibility for both areas can be assigned to that professional. (¶2.5).

Exceptions to Bank policies: None

Program consistent with Country Strategy: Yes [X] No [ ]

Project qualifies for: SEQ[No] PTI [No] Sector [ ] Geographic[ ] Headcount [ ]

Procurement: See Paragraph 3.6

(*) 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 provision of the Bank's policy on lending rate methodology for ordinary capital loans. In no case will the credit fee exceed 0.75% or the inspection and supervision fee exceed, in a given six-month period, the amount that would result form applying 1% to the loan amount divided by the number of six-month periods included in the original disbursement period.

I. DESCRIPTION AND RESULTS MONITORING

A. Introduction

1.1 Guyana is a low-income, thinly-populated country with a predominantly agricultural economy. The total population according to the 2002 census was 723,000. The vast majority of the population lives in the coastal strip. The rural interior is very sparsely populated, with communication being predominately along waterways, and/or by air and road to the coast. The country is divided into 10 Regional Administrative Region, governed by Regional Democratic Councils. Regions 1, 7, 8, and 9 are classified as the interior regions - rural and remote, with small populations. Regions 2, 3, 4, 5 and 6 are the coastal regions, and Region 10 has one moderate sized town and a large rural area. Region 4 includes Georgetown, the capital, and represents the largest concentration of population. The Government of Guyana (GOG) has stressed the need to improve the efficiency and the physical infrastructure of the country's transport sector, with the long term goals of developing and maintaining an efficient, modern, reliable, secure, competitive and high quality transport system.

B. Background, Problem Addressed, and Justification

1.2 The transport sector. The road network of Guyana totals 3,995 km and serves a national fleet of about 52,000 vehicles. All national paved roads, consisting of six main roads, have only two lanes, except for two segments along the East Bank Demerara, which has four lanes. Guyana has 98 km of railroads entirely dedicated to ore transport, one international airport, and 46 additional airstrips with short runways. The country has a single general cargo seaport in Georgetown, and 4 specialized bulk loading facilities. Guyana relies upon its 6,000 km of navigable water-ways used for carrying bauxite, sugar cane or other bulk commodities.

1.3 Although the road network of Guyana is one of the sparsest in South America, due to the concentration of the population and the main road system along the coastal areas, most of the population has access to paved roads. Most of these roads are in fair conditions since over the last 15 years GOG has embarked on a progressive rehabilitation of the roadways and structures. The Bank supported this long-term program by means of five prior operations that focused on the rehabilitation of approximately 300 kilometers of the main road network. The road network in the interior consists mainly of roads readily accessible only during the dry season and limited to 4wd vehicles. Overall, the transport system is supported by an inadequate network, providing little internal and international connections, with highly congested roads in urban areas with poor quality, low level of service, lack of alternative roadways and costly services.

1.4 Institutional framework. Government responsibilities in the transportation sector are spread among various agencies, with the Ministry of Public Works and Communication (MPWC) taking on the main role. The MPWC is basically responsible for transport policy and the provision and maintenance of almost all major transport infrastructures. The Ministries of Agriculture and Local Government assume the responsibility for providing and maintaining some local infrastructure while the Ministry of Home Affairs assumes some regulatory functions regarding

safety and security of transport services.

1.5 The MPWC's capacity to perform the function of executing agency has been consolidated over the years with the creation, in 2002, of the Work Services Group (WSG) that assumed responsibilities for the main roads and bridges, and main executive responsibilities for the road sector. This unit has evolved from being a Project Executing Unit (PEU) for IDB projects being undertaken by the MPWC to become the unit which is responsible for all road works being undertaken by the MPWC. This unit is also responsible for the planning and management of road investments and maintenance activities.

1.6 Country's sector strategy. The country's strategy for the road subsector consists of: i) rehabilitation, improvement and extension of the road network, financed by external resources, and ii) routine maintenance of the rehabilitated network financed by recurrent resources. This strategy aims to reduce transportation costs, improve market access and overall competitiveness, and increase coverage of maintenance activities of main roads, bridges and other infrastructure. Guyana has been actively restoring infrastructure that in most cases has exceeded its life service, improving traveling conditions and road safety along public roads. Maintenance programs have been implemented uninterruptedly and include the involvement of the private sector by means of contracting out continuous routine maintenance activities, as well as the strengthening of MPWC's capacity to administer and maintain the road network.

1.7 The GOG seeks to enhance regional integration, accessibility and facilitate trade through the improvement of the transportation link (Georgetown and Lethem) between Guyana's north and south regions. The Bank has approved a TC to finance a prefeasibility study, and the feasibility studies. This road has been upgraded with GOG funds and can now be used during the rainy season; the Government of Brazil is funding the bridge over the Takutu River (border between Brazil and Guyana) Complementing this approach, the GOG is also seeking to improve the mobility and accessibility of the population in Georgetown by means of the development of an alternative new Southern Approach, that would be linking the outskirts of Georgetown and the new urban developments in Diamond Grove, south of the capital city, and the simultaneous improvement of the main arterial network within the City and the diamond urban area as an integrated project of urban mobility improvement.

1.8 In addition, the rehabilitation of the main road in the Essequibo area was financed by other MDB's; all the rehabilitated roads, approximately 350 kilometers, representing less than 10% of the country's road network, have been included in a routine maintenance program (RMMS). Nevertheless, still more than 90% of the overall national network has not been rehabilitated and is in regular to very poor conditions, resulting in long journey times, high transport costs, difficulties in access to school, basic services (such as health, public administration, etc.) and economic alternatives (such as markets, jobs, etc.), effectively limiting the mobility and accessibility of the population in important areas of the country. This situation threatens the long term developmental objectives of the GOG, which are based on a safe and reliable road network to facilitate investments and increase private sector productivity to accelerate economic growth.

1.9 Bank's strategy. The Bank's strategy in Guyana, expressed in the Country Paper (GN-2503-1), seeks to support the Government vision for accelerating economic growth through economic diversification and targeted social development. This strategy promotes the improvement of the quality and coverage of the road network as a pillar of the strategic infrastructure investments therefore supporting the economic diversification objective. The main areas of focus of the *transport sector strategy* are: i) develop a balanced transport system; ii) develop criteria to prioritize projects rationally within a general strategy; iii) provide for the improvement and the regulation of the transport system; and iv) improve the performance of the main logistic chains which sustain the economic growth of the country. The principles of this strategy are: a) prioritize the solution of the principal problems of the existing system (localized congestion, need of maintenance of the road network, road safety, and urban transport) with an efficient use of the economic resources; b) relate the size of the projects with the size of the economy of the country and the capacity of the executing agencies; c) consider accessibility and integration aspects; and d) take advantage of integration possibilities with the neighbour countries.

1.10 The Bank's involvement in the development of road infrastructure has comprised long-term capital investments aimed at the rehabilitation of infrastructure that has fulfilled its service life expectancy, extension of the secondary and tertiary road network, support of regional and international integration projects and improvement of road safety conditions. This strategy, in concurrence with the country's sector strategy, aims to improve and expand the road network, while assuring its technical, financial, socio-environmental and economic sustainability.

1.11 Justification of Bank's participation. The Bank, following this long-term strategy, has been financing major rehabilitation works along most of the main road network and has contributed to develop and improve sustainable routine maintenance mechanisms, covering most of the rehabilitated network (Main Road Rehabilitation Program, LO-890/SF-GY, US$23.4 M; Bridges Rehabilitation Program, LO-999/SF-GY, US$41 M; Mahaica – Rosignol Road Rehabilitation, LO-1094/SF-GY, US$33 M; New Amsterdam- Moleson Creek Road Rehabilitation, LO-1554/SF-GY, US$41.5 M; and Transport Infrastructure Rehabilitation Program, LO-1803/SF-GY, US$27 M). Bank operations also include provisions for the future financing of maintenance of the road network, as well as either explicit road safety components or implicit activities for safety improvements. The table below illustrates the areas of involvement in the last five operations financed by the Bank:

Areas of involvement	**LO 890/SF**	**LO 999/SF**	**LO 1094/SF**	**LO 1554/SF**	**LO 1803/SF**
Road and Bridges Rehabilitation	✓	✓	✓	✓	✓
Routine Maintenance		✓	✓		✓
Weight Control			✓		
Road Safety	✓	✓	✓	✓	✓
Institutional Strengthening		✓	✓	✓	

1.12 In 2004 the Bank funded the preparation of studies of some critical road segments including the East and West Canje Roads. These studies are being reviewed and updated with financing from a technical cooperation in execution (GY-T1018 – ATN/SF-9616-GY) that supports the preparation of this program. The economic analysis of these roads, performed using the HDM-4 model, estimated a net present value of US$12.56 M for the East Canje Road and US$0.60 M for the West Canje Road; the internal rates of return were 32.3% and 14.7% respectively. These roads constitute the representative sample of the program.

1.13 Between 2003 and 2006, the Bank financed the feasibility studies of a new Southern Approach to Georgetown. These studies highlighted the importance of improving the condition of the urban arterial networks in Georgetown and in specific sections of the East Bank Road (EBR). Two technical cooperations currently being prepared (GY-T1070, US$600,000 financed from the Net income of the Fund for Special Operations and GY-T1071, US$400,000 financed from the Fund for Preparation of Infrastructure Projects -Infra Fund-) will support: i) the development of the most appropriate technique and scale of operations required for periodic maintenance: The RMMS programs have had a positive impact in slowing deterioration of the rehabilitated network; however, periodic maintenance such as overlays and pavement recycling has been very limited; ii) preparation of technical, economic, environmental and social assessments to determine the possibility and extent of improving critical urban transport infrastructure in Georgetown and the access road from the EBR to the international airport, as well as completion of technical designs, environmental and social management plans (ESMPs), specifications and documents required to tender the civil works; and iii) the Environmental Impact Assessment (EIA) of the Southern Approach (¶1.7). The improvement and rehabilitation of these urban roadways will contribute to the improvement of urban and suburban mobility and accessibility, improved population's access to social services such as medical and educational facilities.

1.14 The proposed Project will finance improvement, restoration and rehabilitation works on the national road network, the urban arterial network of Georgetown, the access road to the airport from the EBR, and localized interventions on the EBR between the Cricket Stadium and Diamond Grove, continuing the objectives and goals of the prior loans in the sector. In aggregate, the prior operations and the proposed one, respond to GOG's objective of rehabilitating the main road network, supporting growth and competitiveness, through the restoration of accessibility, mobility, safety and reliability of the road network. This operation also builds upon the efforts undertaken by the existing loans supporting the institutionalization of improved, modernized and sustainable routine road maintenance.

C. Objective, Components and Cost

1.15 Objectives. The main objective of the project is to enhance urban and suburban mobility and safety, and improve accessibility to an important agricultural zone, lower transport costs and reduce accident rates, through the rehabilitation and improvement of the East and West Canje Roads, the urban arterial network in Georgetown, the access road to the airport from the EBR, and localized interventions

on the EBR between the Cricket Stadium and Diamond / Grove. Specific objectives of the Program will be the improvement of the road reliability and driving conditions by rehabilitating and improving the different road corridor.

1.16 Expected results include reductions in generalized transport and logistical costs, achieved by reductions in vehicle operating costs and reduced travel times, contributing to economic growth and social development. Road rehabilitation should also result in reduced future periodic road maintenance costs. Improved transport will increase mobility within the Georgetown Metropolitan Area, and accessibility of surrounding communities to markets and services in the suburban and rural areas.

1.17 Components. The expected components of Project are: i) Improvement and Rehabilitation of the East and West Canje Roads, including the civil works related to the reconstruction and rehabilitation of the road; ii) Improvement and Rehabilitation of main roads, including the Sheriff Street – Mandela Avenue in Georgetown, the access road to the airport from the EBR, and localized interventions on the EBR between the Cricket Stadium and the Diamond / Grove urban area, including the civil works related to reconstruction and rehabilitation; and iii) Implementation Support.

1.18 **Component 1: Improvement and Rehabilitation of the East and West Canje Roads (US$13 million)**. The East Canje Road runs from Sheet Anchor towards Harmony and is about 14.5 km long. The first 3.2 km has a wide, paved surface in generally “fair” condition. From km 3.2 to about km 7.3, the road is also paved but of narrower width (5 to 6 m wide), with a “poor” to “very poor” condition, and serves generally rural residential and farming communities. Beyond km 7.3, the existing roadway is unpaved, narrow (about 4.5 m wide) and very lightly trafficked. The first part of the section features generally residential and sporadic, strip commercial development. The final stretch of the route serves predominantly as an access roadway to a few rural areas and finally reaches the GPL power plant alongside the Canje River near Harmony.

1.19 The West Canje Road runs from Stanley Town towards the community of Wyburg and is approximately 4.4 km long. The present surface is paved (approximately 4.0 m wide) in generally “poor” conditions. The road serves mainly as an access route to residential and agricultural areas.

1.20 Traffic Volumes on the different sections of the East Canje Road varied from 800 to 3,600 vehicles per day, while on the West Canje Road traffic amounted to 1,850 vehicles per day.

1.21 The scope of works to be carried out would include i) improvement and rehabilitation of both roads, replacement of 24 bridges and six culverts and the rehabilitation of three box culverts, ii) construction of shoulders in interurban segments, and sidewalks and other safety related works in urban areas, iii) improvements of urban crossings, and roadside amenities, including bus stops and parking areas at key locations to enhance safety and socioeconomic benefits. In addition, roadside public utilities infrastructure will be properly relocated. Sound interface between road drainage and urban sewage networks will be introduced in town crossings.

1.22 **Component 2: Improvement and Rehabilitation of main roads (US$10.30 million)**. The Sheriff Street – Mandela Road roadway in Georgetown is the only direct link between the heavily populated East Coast Demerara and East Bank Demerara. Additionally, the roadway provides the main access to very large residential areas in Georgetown such as Campbellville and South Ruimveldt. Commercial activity continues to increase steadily along the roadway, creating a chaotic mix of pedestrian and vehicular traffic, and parking requirements. Traffic control and road safety features such as pedestrian walkways, pedestrian crossings, lane markings, 'no parking' zones, lighting and signage are inadequate. The roadway is approximately seven kilometers long, and its width varies from seven to thirteen meters. It has an asphaltic concrete surface (approximately six inches thick after overlays), on a stabilized white sand / sand clay base.

1.23 While the roadway is seemingly sound structurally, its surface is rough and undulating, and significant cracking has begun to emerge. The correction of these defects would require an asphaltic concrete overlay to be applied. The existing surface could be partially milled and re-laid as a 'geometric correcting' base layer before the overlay, if necessary. Additionally, some of the existing surface could be recycled and used to manufacture the 'hot mix' for the overlay. Based on the results of the technical studies, drain construction to either side of the road and the construction of sidewalks and other road safety features could be included as necessary.

1.24 The Cheddi Jagan International Airport (CJIA) Access Road is a rigid concrete pavement, which is approximately three and one half kilometers long and seven meters wide. It is the only access to the CJIA and the relatively large Timehri community. The surface provides for relatively rough driving conditions, and several sections of the pavement have failed and were replaced with asphaltic concrete fills. The scope of works to be carried out would include an asphaltic concrete overlay to improve the driving comfort and protect the pavement from further deterioration, as well as the improvement of roadside amenities at key locations to enhance safety.

1.25 The EBR has been widened to 4 lanes between the outskirts of Georgetown to the new Cricket Stadium. South of the stadium the road continues with 2 lanes, providing access to the ever developing residential areas of Diamond and Grove villages on the East Bank of Demerara. It is the intention of the Government to continue the 4-lane widening further south. A study to carry out the technical assessments, including engineering, socio-environmental aspects, cost-benefit analyses and priorities of critical works, and preparation of final designs to continue with the widening works is being funded by the GOG. This subcomponent will finance the implementation of the prioritized measures along the EBR between the Cricket Stadium and the Diamond / Grove urban development, and would include localized interventions such as upgrading intersections, improvement of road safety, traffic management, ease of traffic congestion, etc.

1.26 **Component 3: Implementation Support (US$1.4 million)**. This component will finance the consulting services for supervision of the civil works in Components 1

and 2 as well as for the conduct of required technical and environmental supervision and audits.

1.27 Cost. The total cost of this Project is US$24.80 million, which will be financed by the Bank with resources of the Fund for Special Operations (FSO) and Ordinary Capital (OC) resources of the Bank, to be disbursed pari-passu with a 50%-50% mix respectively.

CATEGORY	TOTAL
1. Improvement and Rehabilitation of the East and West Canje Roads	**11.00**
2. Improvement and Rehabilitation of main roads Sheriff Street – Mandela Avenue in Georgetown Access road to the international airport from the EBR Localized interventions on the EBR between the Cricket Stadium and the Diamond / Grove urban area	**10.30**
3. Contingencies	**2.00**
4. Implementation Support	**1.40**
5. Financial audit	**0.10**
TOTAL	**24.80**

D. Key Results Indicators

1.28 A comprehensive monitoring and evaluation system will continuously assess and refine the program's impact. The expected outcomes of the project would be: i) reduction in vehicle travel times and operation cost on the road, ii) extension of the road network in good / fair conditions, iii) rate of road crashes / incidents and fatalities, and iv) more efficient and effective planning, programming and execution of transport projects by WSG. The key outputs of the project would include kilometers of road improved and rehabilitated, including structures and road safety works.

1.29 The proposed indicators and means of verification maximize the use of the information that MPWC and WSG will collect directly or indirectly during the execution of the project. Most of the proposed indicators already have baseline data for the year 2008. This baseline is the reference level for the evaluation of the program. All the output indicators will be measured directly; the outcome indicators will be either measured directly or indirectly by the Police in the case of road accidents. These measures and estimates will be compared with the expected outputs and outcomes presented in the Results Matrix. The following table presents the selected indicators and their respective means of verifications:

INDICATOR	MEANS OF VERIFICATION	FREQUENCY
Outcomes		
Average journey / trip time; vehicle operation cost	Semi annual progress report, submitted on 12/31 of each year	Annual
Extension of the road network in good / fair conditions		
Rate of road crashes/incidents and fatalities		
Planning, programming and monitoring of transport projects		
Outputs		
Rehabilitated roads, including structures and road safety works	Semi annual progress report, submitted on 12/31 of each year	Annual

1.30 The rehabilitation of the East Canje Road, will reduce travel time in 18%, will also curb vehicle operation costs by an estimated 21% and overall transport cost by an estimated 20%, among road user categories. Similarly, the rehabilitation of the West Canje Road, will reduce travel time, vehicle operation costs and overall transport cost by an estimated 20%, among road user categories.

II. FINANCING STRUCTURE AND MAIN RISKS

A. Financial Facility and Contractual Conditions

2.1 This Program will be implemented as a multiple works investment project. The financing from the Bank includes the blend of FSO and OC resources with amortization periods of 40 years and 30 years, respectively, and grace periods of 40 years and 5 and a half years, respectively. The expected disbursement period of the Project is 60 months. The following table shows the tentative disbursement schedule, in millions of US$.

Source	Year 1	Year 2	Year 3	Year 4	Year 5	Total
IDB (FSO – Blend)	1.635	2.635	3.420	2.135	2.575	12.4
IDB (OC – Blend)	1.635	2.635	3.420	2.135	2.575	12.4
Total	3.270	5.270	6.840	4.270	5.150	24.8

B. Enviromental and Social Safeguard Risks

2.2 The Road Improvement and Rehabilitation Project is considered environmentally and socially viable and will improve the living, safety and transportation conditions of the communities along the East and West Canje roads, as well as those of the urban communities in Georgetown and Diamond Grove. The representative sample for this multiple works investment project consists of the East and West Canje roads, where feasibility and engineering studies as well as environmental reviews have been prepared.

2.3 Given the type, size and moderated technical simplicity of the proposed civil works, as well as the fact that they will take place mostly within the existing right-

of-way of a corridor that traverses a consolidated semi-urban area in both the East and West Canje road projects and the Georgetown - Diamond/Grove areas it is not anticipated that there will be any permanent, widespread or irreversible significant negative environmental impacts, and those that will occur will be mainly social in nature. Negative impacts will occur temporarily during construction and include: traffic congestion, noise, potential increase in accidents due to presence of construction equipment, potential water and soil pollution, potential increase of sexual related illnesses including HIV due to the presence of increased number of workers, potential excessive demand on services in the area, potential need to relocate utilities and other minor local infrastructure and some other common impacts of small-scale civil works programs. The long-lasting impacts of the project are mostly beneficial and include: improvement of drainage and water flow conditions in the local canals that border the roads, improved sanitary conditions, a reduction in the number and severity of car accidents, as well as those involving pedestrians and cyclists, reduction of travel time, transportation and economic costs, reduction of stress and noise levels, improved transport services to hospitals and schools, improved response time for fire and police services, and reductions in air pollutant and GHG emissions.

2.4 The environmental strategy for this Program consists of the following: (a) for the East and West Canje roads (Component 1), since the engineering designs have already been prepared and the potential impacts have been identified, the strategy involves the preparation of a specific Environmental and Social Management Plan (ESMP) that will address the mitigation and prevention of negative impacts as well as the enhancement of positive ones. This ESMP is being prepared and will include specifications for improvement of bicycle circulation, detailed requirements for construction site location and operation, sanitary and health and safety requirements for construction crews, environmental education, social and communications strategies for dealing with community complaints, contingency plans, etc.; (b) Component 2, Improvement and Rehabilitation of Main Roads, includes the rest of the works to be financed and will be carried out in the urban/suburban settings of Georgetown and Diamond Grove, as well as on the access from the EBR to the airport. The specifics are not completely defined but will be studied and evaluated with funds from two Technical Cooperations (GY-T1070 and GY-T1071). The strategy for these projects will involve a detailed environmental and social review and the preparation of specific Environmental and Social Management Plans (ESMPs) and any other type of instrument to ensure full compliance with local regulations and all of the Bank's policies. If there should arise a need for resettlement, a specific resettlement plan will be prepared and the funds for its implementation as well as those required to mitigate any other type of impact will be included as part of the projects to be undertaken.; (c) Component 3 is completely tied to the execution of the first two components and includes the involvement of environmental supervision staff to ensure the ESMP adequately manages any potential risks related to the main investment components of the loan.

2.5 **Supervision, Inspection and Monitoring**. For follow-up and compliance purposes, additional safeguards will be put in place: (i) the Supervisory Engineering Firm, will appoint an environmental inspector and provide any additional environmental and social staff as required to ensure implementation of the ESMPs; (ii) the Construction Contractor will assign a qualified Environmental Engineer who will assume responsibility for implementation of the ESMP during construction and post-construction and act as a liaison with the Supervisory Engineer's Environmental Inspector; (iii) environmental reports will be required on a monthly basis and an environmental audit of each individual project will be done prior to the reception of the project; and (iv) prior to the commencement of the first civil works contract, WSG will hire and/or appoint a social specialist and an environmental specialist with experience in civil works, with preference in roads projects[1], who will jointly oversee the performance of both the supervisory and contracting firms, review their reports and direct and ensure the correction of any non-compliance issues.

2.6 The Bank will exercise an oversight role of the execution of the operation throughout all Project stages. The requirements to hire both the Environmental Inspector and Engineer will be part of the tender documents for supervision and civil works, respectively.

C. Fiduciary Risk

2.7 WSG as an executing agency has extensive experience working with the Bank with sound procurement and internal procedures. The Executing Agency shall maintain adequate accounting controls and records acceptable to the Bank which must be submitted to the Bank as a consolidated financial report of the Program at the end of each fiscal year. This information will serve as the basis for the annual audit for the use of the Bank's funds. Given the importance of this task, the Executing Agency must ensure that staff with accounting and/or audit experience is retained. **Prior to the first disbursement of the Loan, the finance and accounting section of WSG shall be fully staffed, including a Finance Comptroller with commitments for at least the first year of project execution; an accounting software suitable for project accounting is in place, and accounting procedures are established, enforced and maintained up to date; and at least three staff of the finance and accounting section of WSG are fully trained in the use of the accounting software**.

D. Other Key Issues and Risks

2.8 Economic feasibility. The economic evaluation of the East and West Canje Roads, representative sample of the Program, considered, as part of the costs, the construction of civil works, the implementation of the socio-environmental measures, and the maintenance during the expected life of the road. The potential economic benefits of road rehabilitation will stem from: i) savings in vehicle

[1] If an expert with experience in both social and environmental issues is available, the responsibility for both areas can be assigned to that professional.

operating cost; ii) savings in road maintenance expenditures; iii) time savings to passengers and freight; iv) reduction of road accidents as a result of road, shoulders and sidewalks widening; and v) residual value of the road structure at the end of the evaluation period.

2.9 To assess the economic feasibility of this project, the Surplus Consumer Method was adopted and applied with the model HDM 4. The indicators utilized for the comparison with the alternative without project are: i) Net Present Value (NPV) of the benefits accruing to road users minus the increase of costs incurred by the road agency, discounted at a rate of 12% per year; ii) Economic Internal Rate of Return (EIRR); and iii) Ratio NPV/RAC, where RAC is the present value of the total road agency costs. The evaluation of the East and West Canje Roads resulted, respectively, in a NPV of US$12.56 and 0.60 million, an EIRR of 32.3% and 14.7, and a NPV/RAC of 1.71 and 0.220.

2.10 This economic evaluation was complemented by sensitivity analyses, so as to evaluate the impact of the reduction of projected traffic and the increase of capital and recurrent costs; also the combined impact of traffic reduction and costs increase was tested. The sensitivity tests show that the NPV of the East Canje Road varies between US$9.2 and 14.03 million, and the EIRR varies between 28.9 and 31.1; while the NPV of the West Canje Road varies between US$-0.68 and 0.14 million, and the EIRR varies between 9.2 and 12.6. These results indicate that while both projects are economically feasible at a discount rate of 12%, the East Canje Road is more robust than the West Canje Road.

2.11 Maintenance strategy. Adequate road maintenance activities impact positively on the sustainability of the investments, allowing the road to reach its complete design life. GOG established the RMMS as a means to improve road maintenance. After rehabilitation works are completed, the roads are transferred to the RMMS, which assumes responsibility for its proper maintenance.

2.12 Macroeconomic framework. A key risk that may adversely affect the Program’s outcomes is the possible deterioration of the macroeconomic conditions that could lower business investments and slow the pace of execution. A close monitoring of the macroeconomic situation in coordination with the IMF could prevent negative impacts on the implementation of this Program.

III. IMPLEMENTATION AND MANAGEMENT PLAN

A. Borrower and Executing Agency

3.1 The borrower will be the Co-operative Republic of Guyana, and the Executing Agency (EA) will be the Ministry of Public Works and Communication (MPWC), through the Works Services Group (WSG). The WSG will be responsible for the fulfillment of technical, administrative and financial procedures related to the execution of the Project, as well as the planning, monitoring, supervision and evaluation of the Project.

B. Execution Structure

3.2 The EA will have the following responsibilities during program implementation: a) prepare and obtain Bank approval for all bidding documents required to hire the civil work contractors and consulting firms; b) carry out, control and register all administrative and accounting procedures needed; c) coordinate the bidding processes according to the Bank and GOG rules; d) monitor the civil works and construction contracts through consulting firms specifically hired to that effect; e) maintain adequate accounting and financial controls as well as appropriate support documentation filing systems for verification by the Bank and the external auditing firm; f) prepare and submit to the Bank disbursement requests and corresponding justification of expenses; g) prepare and submit to the Bank semiannual reports on the revolving fund, program execution including annual updates of the Annual Plan of Operations, audited financial reports, and other financial reports as required by the Bank; h) record and control the results of the Program through the agreed indicators; and i) address and resolve contractor claims and address related contract adjustments. In addition, the EA will maintain separate files for the operations of the Program, and allow for financial and accounting monitoring of the Bank resources, and the local counterpart, in accordance with Bank requirements.

3.3 The contractors who will carry out the civil works will be overseen by engineering supervision firms hired by the MPWC with funds from the Financing. The contractors will be hired using International Competitive Bidding (ICB) procedures and in accordance with terms of reference agreed with the Bank. The bidding documents for the selection of contractors to carry out the civil works shall incorporate the following requirements: i) the final technical designs, ii) the Environmental and Social Management Plan, as well as the General and Particular Environmental Specifications; and iii) the requirement that Contractors hire an Environmental Engineer as part of their field personnel.

3.4 Prior to signing the contract with the Contractors to carry out the civil works, the Executing Agency will demonstrate that it has selected and hired the firms to supervise such civil works.

3.5 The supervision firms will also carry out the supervision of the environmental and social aspects of the civil works. Therefore, the bidding documents for the

selection of the supervisory firms of the civil works must incorporate the requirement that an Environmental Inspector is hired as part of their field personnel. The supervision firms will review all technical documentation at the beginning of their contracts and at regular intervals throughout the Program to ensure, *inter alia* the adequacy of the programming of work. The supervision firms will submit, twice per year, reports to the Executing Agency and the Bank outlining progress in the works carried out by the contractors and will prepare as-built drawings for all work performed upon the completion of each major work component.

C. Procurement

3.6 Procurement of goods and works as well as the procurement of consulting services using program resouces will be carried out by the EA in accordance with the Policies for the Procurement of Works and Goods Financed by the Inter-American Development Bank (GN-2349-7); and the Policies for the Selection and Contracting of Consultants Financed by the Inter-American Development Bank (GN-2350-7) both of July 2006.

D. Evaluation and Monitoring

3.7 The monitoring and evaluation strategy will include the following: i) annual audited financial statements; ii) annual plan of operations; iii) semiannual progress reports; iv) mid-term review; and v) final review.

E. Future Activities to Complete Final Designs

3.8 The preparation of detailed technical designs needed for tendering the works of the East and West Canje Roads were financed through the LO-1094/SF-GY, and reviewed by ATN/SF-9616/-GY. These designs will constitute the initial package of works to be tendered. The engineering studies and preparation of final technical designs needed for tendering the improvement and rehabilitation works of the urban arterial network in Georgetown and the access road to the airport from the East Bank Road will be financed by means of the technical cooperations GY-T1070 (Net FSO income) and GY-T1071 (Infra Fund), currently being prepared; similarly, the preparation of technical studies and designs needed for tendering the civil works for the localized interventions on the EBR between the Cricket Stadium and Diamond / Grove will be financed with resources from LO-1554/SF-GY.

3.9 The feasibility and environmental studies, and the final designs of the improvement and rehabilitation of the main roads will be bundled in the same consultancy. Prior to authorizing the firm to carry out the final technical designs of the civil works, the Executing Agency will submit the corresponding engineering studies to the Bank for its no objection.

3.10 Prior to tendering the civil works, the EA will submit to the Bank, for its no objection, the engineering, environmental and cost-benefit analyses and final technical designs, and, if necessary the relocation plans.

Annex

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Results Matrix

Project Objective	Enhance urban and suburban mobility and safety, improve accessibility to an important agricultural zone, lower transport costs and reduce accident rates, by improving the East and West Canje Roads and the urban arterial network in Georgetown, the access road to the airport from the East Bank Road (EBR), and localized interventions on the EBR between the Cricket Stadium and Diamond / Grove.

Outcome Indicators	Base Level 2009	Target Level (at the end of road rehabilitation)	Comments
Reduction in vehicle travel time.	**100 (Base)**	**82**	Determined by MPWC, based on the semiannual progress report.
Reduction in vehicle operation cost	**100 (Base)**	**79**	Determined by MPWC based on the semiannual progress report
Increase in the length of road network in good / fair conditions	**-**	**30 km**	Determined by MPWC based on the semiannual progress report
Reduction in the rate of road crashes / incidents and fatalities along the corridor.	**100 (Base)**	**80**	Determined by MPWC based on the semiannual progress report and records of the Police.
More efficient and effective planning and programming of transport projects.	Accounting software in place but neither in use nor updated. Social and environmental areas not fully covered.	Finance and accounting sections of WSG fully staffed. Accounting software in place and update procedures established and enforced. Social and environmental expert(s) in place.	Determined by MPWC based on the semiannual progress report.

Component	Base	Year 1	Year 2	Year 3	Year 4	Year 5	Target	Comments
Component: Road Rehabilitation								
Outputs								
Rehabilitation of existing roads, including structures (bridges, culverts, drainage, etc.) and road safety works.	0 km	2 km	7 km	8 km	7 km	6 km	30 km	PEU semester progress reports.
Outcomes								
Reduction in vehicle travel time.	100						82	PEU semester progress reports.
Reduction in vehicle operation cost	100	99	93	87	82	79	79	
Reduction in the rate of rod crashes / incidents and fatalities.	100	98	94	89	84	80	80	

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Summary of Procurement Plan

No.	Description of the contract and estimated cost of procurement	Procurement method[1]	Review (prior or post)	Source of financing and percentage		Prequalification (Yes/No)	Estimated dates		Status (pending, in process, awarded, cancelled)
				IDB %	Local/ other %		Publication of specific procurement notice	Completion of contract	
Consulting Services									
C1	Engineering Consultancy Services for Supervision of East and West Canje Roads. US$ 0.7 M.	QCBS	Ex-ante	100%	0%	Shortlist	Nov./09	Jan/12	Pending
C2	Engineering Consultancy Services for Supervision of Main Roads. US$ 0.7 M.	QCBS	Ex-ante	100%	0%	Shortlist	May/10	Jun/12	Pending
C3	Financial Audit Services. US$ 50,000.	QCBS	Ex-ante	100%	0%	Shortlist	Oct/09	Dec./12	Pending
Civil Works									
W1	Improvement and Rehabilitation of the East and West Canje Roads. US$ 11M	ICB	Ex-ante	100%	0%	No	Dec/09	Jan/12	Pending
W2	Improvement and Rehabilitation of Main Roads. US$ 10.3M	ICB	Ex-ante	100%	0%	No	Jun/10	Jun/12	Pending

[1] **ICB**: International competitive bidding; **LIB**: limited international bidding; **NCB**: national competitive bidding; **PC**: price comparison; **DC**: direct contracting; **FA**: force account; **PSA**: Procurement through specialized agencies; **PAs:** Procurement agents; **IA:** Inspection agents; **PLFI**: Procurement in loans to financial intermediaries; **BOO/BOT/BOOT:** Build, own, operate/build, operate, transfer/build, own, operate, transfer; **PBP**: Performance-based procurement; **PLGB:** Procurement under loans guaranteed by the Bank; **PCP**: Community participation procurement; **QCBS**: Quality- and cost-based selection **QBS**: Quality-based selection **FBS**: Selection under a fixed budget; **LCS**: Least-cost selection; **CQS**: Selection based on the consultants' qualifications; **SSS:** Single-source selection**; 3CV's**: Selection of Individual Consultant based on 3CV's.