

PROJECT PROFILE

BARBADOS

I. BASIC DATA

Project name:	Road Rehabilitation and Improving Connectivity of Road Infrastructure		
Project number:	BA-L1035		
Project team:	Christopher Persaud, Team Leader (TSP/CSU); Sergio Deambrosi, Alternate Team Leader (INE/TSP); Olivia Désinor (TSP/CHA); Eduardo Café, Caterina Vecco and Olga Mayoral (INE/TSP); Betina Hennig (LEG/SGO), Roy Parahoo and Denise Salabie (FMP/CBA); and Eleanor Carryl (CCB/CBA)		
Borrower:	Government of Barbados (GoBA)		
Executing agency:	Ministry of Transport and Works (MTW)		
Financial plan:	IDB:	ORC	US\$10,000,000
		CHC	US\$10,000,000 ¹
	Local:		0
	Total:		US\$20,000,000
Safeguards:	Policies	B.01; B.02; B.03; B.04; B.05; B.06; B.07; B.11; B.17;	
	triggered:	OP-102; and OP-704	
	Classification:	Category B	

II. BACKGROUND AND JUSTIFICATION

- 2.1 **Background.** Barbados is a small island territory (430 km²) located on the eastern border of the Caribbean Sea and Atlantic Ocean with a population of 289,683.² The country is a stable democracy with high living standards and in 2013, the nominal per capita income was US\$15,373. The international economic downturn of 2008, exposed the country's vulnerability to external shocks, and it has since been characterized by low economic growth and constrained fiscal space along with relatively high unemployment and flat exports. This along with high public debt of 98% of GDP are stifling economic activities. The main economic activity is tourism which contributes directly approximately 12% of GDP, and indirectly; over 40% through hotels and restaurants. It also drives the demand in sectors such as construction, manufacturing, transportation, and also services focusing on interventions that could boost competitiveness which are essential for growth.
- 2.2 **The road sector.** The road network system consists of 1,750 km of roadways of which 80% are paved and 30% of these paved roads are in poor condition. The seven major primary numbered highways (H-1, H2, etc.) serve as traffic collectors to many of the secondary roads. Many of these primary and secondary roads connect the rest of the island with the ABC Highway, which in turn connects the Bridgetown Port to the Grantley Adams International Airport. This road network supports transportation for the productive sectors which comprise mainly of tourism, light manufacturing, quarrying, and agriculture. Road based transportation on the island is facilitated through a fleet of approximately 115,000³ vehicles of which 5,000 are heavy trucks, and 600 are

¹ The availability of these resources will be subject to prior non-objection of China.

² http://www.indexmundi.com/barbados/demographics_profile.html.

³ Barbados: Productive Infrastructure Sector Note.

public transport vehicles. In the last decade, the country has seen a rapid change in traffic patterns due to the increasing number of motor vehicles on the roads. However, there has not been much adaptation of the infrastructure or its management to complement this increase. This has directly resulted in difficulty in transport logistics, increased number of roads accidents (not fatal accidents), and indirectly in the loss of man hours and ambience which are all important to a tourism economy.⁴

- 2.3 **Cross cutting focuses.** Since the 2008 financial downturn, public investment in Barbados reduced by half to around 4% of GDP annually and will reduce further to 1.5% of GDP in the next four years. In the transport sector, the funds available for road investments (construction/rehabilitation/maintenance) reduced from approximately US\$70 million in 2009-2010 to US\$30 million in 2013-2014.⁵ This lack of investment, compounded by the issues detailed in paragraph 2.2, are taking a toll on the existing road network and on private sector competitiveness. Investment in transportation is important for Barbados since it comes with short term economic stimulus and raises long term output. Research suggests that public infrastructure investments have some of the highest multipliers, or effects on short run GDP of any fiscal interventions.⁶ Consequently, in the short term their positive impact on demand from raising public investment in labor intensive projects would help ease the current economic downturn and generate jobs. Over the long term, such investments raise infrastructure capital stocks by expanding productive capacity while improving the country's competitiveness.
- 2.4 **The problem.** The problem facing the Barbados road subsector is a systemic one driven by rising demand through an increasing vehicle fleet and the need for tourism and freight logistics to support competitiveness. In addition, road maintenance, rehabilitation, and upgrade and also safety requirements are affected by budget constraints. It is imperative that road infrastructure and its management evolve to keep a pace with demand and to support the country's productive sectors by providing effective connectivity. As such, immediate interventions in this key subsector have to be two fold; addressing both the institutional governance and also infrastructure requirements. Institutional interventions are needed in order to address the weakened capacity of the MTW to plan, design, build and maintain roads, and to manage infrastructure assets in light of lower budgetary allocations and greater demand for connectivity. The infrastructure needs have to address the maintenance, rehabilitation, upgrade, and construction of roads, drainage structures and safety features.
- 2.5 The capacity of the MTW to collect and analyze transportation information for planning and development is limited. Currently, the limited land transportation planning that is conducted is based on analogue systems as such there is need for modernizing in order to improve governance and effectively address the current challenges of budget constraints, growing demand from vehicle fleet expansion and traffic safety while embracing new trends in technology, computerization, and methodologies in engineering and management. Sector modernization is currently not being addressed in Barbados, which in part gives rise to challenges outlined above. Interventions at this time would have to address deterioration of road infrastructure and

⁴ Barbados Growth and Development Strategy 2013-2020, Economic Affairs Division, MFEA.

⁵ Barbados: Productive Infrastructure Sector Note.

⁶ An Economic Analysis of Transportation Infrastructure Investment. July 2014. National Economic Council and the President's Council of Economic Advisers.

improve management efficiency which would benefit both public and private stakeholders. The Bank could add value in this area given the importance for sector governance and sustainability. Immediate needs include the development of short and medium term investment plans, transport logistics, connectivity and competitiveness, asset management systems for sustainability, and also investment in human capital.

- 2.6 In recent years, the increase in traffic volume has stressed the already congested radial network of roads which has affected efficiency, productivity, and safety of the network. The decline in budget resources has resulted in deferred actions contributing to 30% of the paved road network being in need of corrective maintenance, rehabilitation or upgrading. Well timed interventions in road networks are crucial to sustainability and in order for a road to achieve its design life and reduce user costs, there needs to be a systematic regimen of routine and periodic maintenance followed by rehabilitation/upgrade at the end of its life. Typically, annual routine maintenance cost 0.2% of the rehabilitation cost, while periodic maintenance is approximately 30% of the rehabilitation cost over the life of the project. As such, delaying these routine interventions would result in earlier rehabilitation needs at much higher costs. The MTW has compiled a corresponding list comprising of 130 sections of road infrastructure in the primary and secondary network which are in need of interventions in order to improve connectivity. The list includes roads that are in poor conditions, roundabouts in accident black spots, and traffic congested junctions.
- 2.7 **Bank experience and lessons learned.** In the transport sector, the Bank has been involved in a number of programs with counterparts seeking to modernize their transport sector, adopt new technological approaches, and management methodologies. These experiences would be beneficial to Barbados as the country now face the prospects of reduced investment capital and the need for continued provision of services to the private sector and the economy in general. In recent years, the Bank's transport division has focused its research in the areas of transportation planning, logistics, asset management and road safety; all of which are applicable to the country's environment. To date, the Bank had financed four transport operations in Barbados, for a total of US\$56.5 million, mainly on road rehabilitation (BA0003, 277/OC-BA; BA0021, 365/OC-BA; BA0030, 470/OC-BA; and BA0047, 755/OC-BA). Under BA0047, execution took 13 years (from 1993 to 2006) for the components to be completed. The operation's Project Completion Report (PCR) pointed out three main contributing factors: (i) major delays between approval, eligibility and implementation; (ii) the absence of a Project Executing Unit (PEU) to implement the project; and (iii) inadequate interagency coordination related to the budgeting of counterpart resources.
- 2.8 **Bank's strategy.** The IDB's Country Strategy with Barbados for 2015-2018 is currently being prepared. Consequently, the Bank's strategic approach for this operation centers on helping to restore sustainable growth to the Barbados economy by assisting the GoBA in its efforts to make the public sector more efficient, and by fostering greater private sector participation and development. The focus issues includes transportation, logistics and sector governance; which are all high impact areas that address binding constraints to growth in which the Bank possesses comparative advantage. The interventions proposed for this operation supports freight logistics and services, by providing a platform for increasing connectivity and promoting a multimodal perspective of the flow of goods and people externally with air and maritime transport and the road network which is related to the internal side of the

distribution networks. Specific actions could include investments in upgrading and improving key productive infrastructure, such as logistics facilities and distribution networks (e.g, the rehabilitation of the road network), aimed at reducing transport costs. The subject of governance will be addressed through the institutional strengthening activities designed to improve planning and maintenance systems and financing mechanisms for the transport sector. The operation's strategy is aligned with the Barbados Growth and Development Strategy 2013-2020, which for transport seeks to address: (i) the quality of the road network; and (ii) institutional strengthening and process re-engineering to maximize the effectiveness resources.

- 2.9 The program will contribute to the priorities of funding for the Ninth General Capital Increase in the Resources of the Bank (GCI-9) (AB 2764): (i) small and vulnerable countries; (ii) infrastructure for competitiveness; and (iii) expansion of transport infrastructure by improving connectivity in the road network. It will also contribute to the regional targets of increasing the amount of km of interurban roads built or maintained/upgraded through the rehabilitation and upgrading of roads as defined in the results framework. The program is aligned with the Strategy for Sustainable Infrastructure for Competitiveness and Inclusive Growth (GN-2710-5) as it contributes to ongoing improvements in infrastructure governance as a key to enhancing efficiency in the delivery of infrastructure service. It is also aligned with the Transport Sector Framework (GN-2740-3); contributing to improving the quality, coverage, capacity, and connectivity of transportation infrastructure through physical improvements in the road network. Alignment with specific lines of action include: (i) improving coverage and connectivity; (ii) rehabilitating and maintaining degraded road systems; (iii) increasing the capacity of infrastructure; and (iv) enhancing transportation safety.

III. OBJECTIVE AND PROGRAM DESCRIPTION

- 3.1 **Objective.** The main objective is to improve institutional governance, connectivity and also the distribution and flow of people and goods to and along the highway system. Specifically the program aims to: (i) improve flows and safety in selected intersections by maintaining, rehabilitating and upgrading sections of road network; and (ii) provide institutional strengthening to improve governance, planning, effectiveness, sustainability and financing mechanisms for rehabilitation and maintenance interventions undertaken by the MTW. It is expected that the operation will contribute to sustainable growth in the Barbados economy through interventions to improve public sector efficiency and by supporting private sector development through greater involvement in the transport sector.
- 3.2 **The program.** The operation is a multiple works operation and is divided into the following three components: **Component 1. Civil works (US\$16.5 million).** This includes the rehabilitation and improvement of roads, construction of roundabouts and sidewalks, rehabilitation of bridges and culverts, features to reduce congestion and improve safety, and a pilot program for outsourced routine road maintenance. **Component 2. Institutional strengthening and studies (US\$2 million).** This component will finance the strengthening of sector governance through capacity building to improve the transport planning and asset management systems, maintenance methodologies, sector financing mechanisms, quality control, and assurance and road safety. It will also finance the studies for civil works outside of the sample including detailed designs, feasibility analyses, environmental and social assessment, road safety designs and highway safety audits. And **Component 3. Implementation support**

(US\$1.5 million). These activities are directly related to the implementation and supervision of Component 1, as well as for required technical and environmental audits, program evaluations, and performance and completion reports.

IV. TECHNICAL ISSUES

- 4.1 **Institutional capacity and executing agency.** The execution agency will be the MTW which is a fairly large ministry with a staff of approximately 1,600 and an annual budget in excess of 120 million Barbados dollars (US\$60 million). Apart from transportation and public works functions, the ministry also has responsibilities for public buildings, traffic management, vehicle registration and public transport. The executing unit for the proposed loan will be the projects department of the MTW. This department is currently staffed with project management, engineering, quantity/land surveying, and field staff and would need strengthening through the addition of finance and procurement personnel along with social/environmental personnel.
- 4.2 **Studies.** The preparatory analyses required for the sample of roads to be included under the operation will involve the completion of designs, cost estimates, economic feasibility and social-environmental assessments. The designs and cost estimates will be produced by the MTW with the support of an individual consultant hired by the ministry. The economic feasibility and social-environmental assessments will be done by external individual consultants hired by the Bank and supported by inputs and data provided by MTW. The roundabouts to be included in the program are more advanced in terms of designs than the road rehabilitation/upgrade projects. However, economic feasibility and social-environmental assessments have not been completed and these will also be done with the inputs of individual consultants hired by the Bank.

V. SAFEGUARDS AND FIDUCIARY SCREENING

- 5.1 **Social and environmental.** In accordance with the guidelines of the Policy Environment and Safeguards Compliance Policy (OP-703), the proposed operation is currently classified as Category B by the project team as it is estimated that the program will not generate significant negative environmental and/or social impacts. Alterations to the road alignment necessary for the construction of roundabouts may require land acquisition which could affect nearby agricultural estates. In these cases, compensation for losses will proceed in conformity with the requirements of the Bank's Policy OP-710. The potential for impacts to cultural heritage/archaeological sites is low.
- 5.2 A project classification of B requires an environment and social strategy that should include three components: (i) environmental analysis, which should include the identification of existing critical environmental and social liabilities and corrective/migratory measures; (ii) development and utilization of appropriate social and environmental procedures for implementation and supervision of the works; and (iii) training for contractors and supervisors in social and environmental safeguards that are relevant to transport planning and road maintenance.

VI. RESOURCES AND TIMETABLE

- 6.1 The Proposal for Operation Development (POD) is expected to be completed on April 30th, 2015 and the loan proposal would be considered by the Board of Executive Directors on September 2nd, 2015. The administrative budget for the preparation of the project is approximately US\$109,440; preparation missions for an amount of US\$42,440 and studies for an approximate amount of US\$67,000.

CONFIDENTIAL

¹ The information contained in this Annex is confidential and will not be disclosed. This is in accordance with the "Deliberative Information" exception referred to in paragraph 4.1 (g) of the Access to Information Policy (GN-1831-28) at the Inter-American Development Bank.

SAFEGUARD POLICY FILTER REPORT

Project details	
IDB sector	Transport
Type of operation	Investment loan
Additional operation details	
Investment checklist	Generic checklist
Team leader	Persaud, Christopher (chrisp@iadb.org)
Project title	Road Rehabilitation and Connectivity Improvement Program
Project number	BA-L1035
Safeguard screening assessor(s)	Persaud, Christopher (chrisp@iadb.org)
Assessment date	2014-09-29

Safeguard policy filter results		
Type of operation	Loan Operation	
Safeguard policy items identified (Yes)	Type of operation for which disaster risk is most likely to be low.	(B.01) Disaster Risk Management Policy– OP-704
	The Bank will make available to the public the relevant Project documents.	(B.01) Access to Information Policy– OP-102
	The operation is in compliance with environmental, specific women's rights, gender, and indigenous laws and regulations of the country where the operation is being implemented (including national obligations established under ratified Multilateral Environmental Agreements).	(B.02)
	The Borrower/Executing Agency exhibits weak institutional capacity for managing environmental and social issues.	(B.04)
	An Environmental Assessment is required.	(B.05)
	Consultations with affected parties will be performed equitably and inclusively with the views of all stakeholders taken into account, including in particular: (a) equal participation of women and men; (b) socio-culturally appropriate participation of indigenous peoples; and (c) mechanisms for equitable participation by vulnerable groups.	(B.06)
	The Bank will monitor the executing agency/borrower's compliance with all safeguard requirements stipulated in the loan agreement and project operating or credit regulations.	(B.07)
	The operation has the potential to pollute the environment (e.g. air, soil, water, greenhouse gases...).	(B.11)

	Suitable safeguard provisions for procurement of goods and services in Bank financed projects may be incorporated into project-specific loan agreements, operating regulations and bidding documents, as appropriate, to ensure environmentally responsible procurement.	(B.17)
Potential safeguard policy items(?)	No potential issues identified	
Recommended action:	Operation has triggered 1 or more Policy Directives; please refer to appropriate Directive(s). Complete Project Classification Tool. Submit Safeguard Policy Filter Report, PP (or equivalent) and Safeguard Screening Form to ESR.	
Additional comments:		

assessor details	
Name of person who completed screening:	Persaud, Christopher (chrisp@iadb.org)
Title:	
Date:	2014-09-29

SAFEGUARD SCREENING FORM

Project details	
IDB sector	Transport
Type of operation	Investment loan
Country	Barbados
Investment checklist	Generic checklist
Team leader	Persaud, Christopher (chrisp@iadb.org)
Project title	Road Rehabilitation and Connectivity Improvement Program
Project number	BA-L1035
Safeguard screening	Persaud, Christopher (chrisp@iadb.org)
Assessment date	2014-09-29

Project classification summary		
Project category: B	Override Rating:	Override justification:
		Comments:
Conditions / recommendations	<ul style="list-style-type: none"> • Category "B" operations require an environmental analysis (see Environment Policy Guideline: Directive B.5 for Environmental Analysis requirements). • The Project Team must send to ESR the PP (or equivalent) containing the Environmental and Social Strategy (the requirements for an ESS are described in the Environment Policy Guideline: Directive B.3) as well as the Safeguard Policy Filter and Safeguard Screening Form Reports. • These operations will normally require an environmental and/or social impact analysis, according to, and focusing on, the specific issues identified in the screening process, and an environmental and social management plan (ESMP). However, these operations should also establish safeguard, or monitoring requirements to address environmental and other risks (social, disaster, cultural, health and safety etc.) where necessary. 	

Summary of impacts/risks and potential solutions	
Identified impacts/risks	Potential solutions
The project will or may require involuntary resettlement and/or economic displacement of a minor to moderate nature (i.e. it is a direct impact of the project) and does not affect indigenous peoples or other vulnerable land based groups.	Develop Resettlement Plan (RP): The borrower should be required to develop a simple RP that could be part of the ESMP and demonstrates the following attributes: (a) successful engagement with affected parties via a process of Community Participation; (b) mechanisms for delivery of compensation in a timely and efficient fashion; (c) budgeting and internal capacity (within borrower's organization) to monitor and manage resettlement activities as necessary over the course of the project; and (d) if needed, a grievance mechanism for resettled people. Depending on the financial product, the RP should be referenced in legal documentation (covenants, conditions of disbursement, project completion tests etc.), require regular (bi-annual or annual) reporting and independent review of implementation.

Disaster risk summary	
Disaster risk category: Low	
Disaster/ recommendations	No specific disaster risk management measures are required.

Assessor details	
Name of person who completed screening:	Persaud, Christopher (chrisp@iadb.org)
Title:	
Date:	2014-09-29

ENVIRONMENTAL AND SOCIAL STRATEGY

I. BACKGROUND

- 1.1 Barbados has relatively reliable infrastructure, which has made the country an attractive destination for doing business and providing financial services, however, the country's productive infrastructure needs to be upgraded, and connectivity improved in order to have better logistics performance. While the implementation of projects to increase terminals and other logistic facilities is recommended for the external networks; on the internal side, emphasis has to be placed on improving the quality of the road network, traffic management and safety, focusing on the development of logistics and flow of goods and passengers within a multimodal perspective.
- 1.2 The road network system in Barbados consists of 1,750 km of roadways, of which 80% are paved with and 70% of paved roads are in good condition. The seven major primaries numbered Highways (H-1, H-2 etc.) serve as traffic collectors to many of the secondary roads. Many of these primary and secondary roads connect the rest of the island with the ABC highway, which in turn connects the Bridgetown Port to the Grantley Adams International Airport. This road network supports transportation for the productive sectors which comprise mainly of tourism, light manufacturing, quarrying and agriculture. Road based transportation on the island is facilitated through a fleet of approximately 115,000¹ vehicles of which 5,000 are heavy trucks and 600 are public transport vehicles. Investments have to be made to upgrade, maintain or rehabilitate the road network, aimed at increasing connectivity through the reduction of transport costs, travel times and safety, and the promotion of tools to make road maintenance sustainable in time.
- 1.3 The problem facing the Barbados road sub sector is a systemic one driven by the rising demand through an increasing vehicle fleet and the need for tourism and freight logistics to support competitiveness. In addition, road maintenance, rehabilitation and upgrade, and also safety requirements are affected by budget constraints. It is imperative that road infrastructure and its management evolve to keep a pace with demand and to support the country's productive sectors by providing effective connectivity. As such, immediate interventions in this key sub-sector have to be two fold; addressing both institutional governance and infrastructure requirements. Institutional interventions have to address the weakened capacity of MTW to plan, design, build and maintain roads, and also to manage infrastructure assets in light of lower budgetary allocations and greater demand for connectivity. The infrastructure needs have to address the maintenance, rehabilitation, upgrade and construction of roads, drainage structures, and safety features.
- 1.4 Since 1974, the IDB has financed four transport operations in Barbados, for a total of US\$56.5 million, mainly on road rehabilitation (BA0003, BA0021, BA0030 and BA0047). The last project, BA0047 (Bridgetown's Roads and Safety Improvement), aimed to improve efficiency of the different economic activities in the capital through the reduction of transport costs and of the time involved in transport goods and persons in the urban area, through the rehabilitation of 7.8 km in urban streets, education programs on use of ABC Highway, training of personnel from Police and Division of

¹ Barbados: Productive Infrastructure Sector Note.

Public Works and improvement of regulatory mechanisms for traffic. Despite the project taking 13 years to complete (from 1993 to 2006), the components were successfully implemented.

II. PROJECT DESCRIPTION

- 2.1 The main objective is to improve institutional governance, connectivity and also the distribution and flow of goods and people to and along the highway system. Specifically, the program aims to (i) improve flows and safety in selected intersections by maintaining, rehabilitating and upgrading road sections; and (ii) institutional strengthening to improve governance, planning, effectiveness, sustainability and financing of rehabilitation and maintenance interventions made by the MTW. It is expected that the operation will contribute to sustainable growth in the Barbados economy through interventions to improve public sector efficiency and by supporting private sector development through greater involvement in the transport sector.
- 2.2 **The program.** The operation is a multiple works operation and is divided into three components: **Component 1. Civil works (US\$16.5 million).** This includes the rehabilitation and improvement of roads, construction of roundabouts and sidewalks, and rehabilitation of bridges and culverts and features to reduce congestion and improve safety and also a pilot program for outsourced routine road maintenance. **Component 2. Institutional strengthening and studies (US\$2 million).** This component will finance the strengthening of sector governance through capacity building to improve the transport planning and asset management systems, maintenance methodologies, quality control and assurance and also road safety. It will also finance the studies for civil works outside of the sample including detailed designs, feasibility analyses, environmental and social assessments, road safety designs and highway safety audits. And **Component 3. Implementation support (US\$1.5 million).** These activities are directly related to the implementation and supervision of Component 1, as well as for required technical and environmental audits, program evaluations and performance and completion reports.
- 2.3 In order for individual projects outside of the sample to be considered eligible for financing under the civil works Component 1, they must meet these requirements: (i) have an internal rate of return of at least 12%; (ii) as a functional unit (regardless of what portion the Bank is financing) must be categorized by the Bank according to its safeguard policies as having minor to moderate environmental and social impacts (category B);² and (iii) meet any other requirements agreed between the Bank and the Government and included in the program regulations.

III. INSTITUTIONAL AND REGULATORY CONTEXT

- 3.1 Barbados has successfully responded to these issues with a significant number of interventions by way of overarching policy initiatives that speak to GOB's commitment to addressing its environmental problems:
 - The National Strategy Plan. Goal four - building of a green economy which requires advancement and protection of the environment, resources, infrastructure while advancing social and economic development;
 - the Barbados Sustainable Development Policy;

² Category A projects are excluded.

- the Barbados Medium Term Strategy 2010-2014. Preservation by promoting and facilitating the environmentally sustainable use of our natural resource, maintaining a safe and reliable water supply; ensuring an efficient and reliable energy sector, developing a modern transport infrastructure, improving disaster management, and maintaining an efficient land-use policy; and
 - the 2008 Throne Speech.³
- 3.2 In addition to these broad plans and policies, specialized policies, programs, legislative frameworks and projects have been undertaken to address each environmental issues identified. Despite these efforts, a number of gaps have been identified in the current framework. As such, relevant opportunities have been identified that may be utilized to orient and align international development assistance and partnerships in support of the Barbados' development goals in a sustainable manner. Generally, issues identified can be further improved by way of:
- Mainstreaming environment by the creation of an overarching policy framework;
 - improving the legislative and enforcement framework;
 - increasing private sector and non-governmental multi-sectoral participation;
 - achieving positive attitudinal changes in citizens by ways of education;
 - establishing environmental standards, as well as improving systems for information gathering and monitoring;
 - building capacity by ways of increased manpower and professional development; and;
 - implementing more initiatives based on horizontal and regional cooperation.⁴
- 3.3 The MTW of Barbados will be the executing agency for the Road Rehabilitation and Improving Connectivity of Road Infrastructure Program. The executing unit for the proposed loan will be the Projects Department of the MTW. This department is currently staffed with project management, engineering, quantity/land surveying and field staff; and would need strengthening through the addition of finance and procurement personnel to mitigate the fiduciary and safeguard risks. The composition of the projects department of the MTW should be expanded to include: (i) a financial specialist; (ii) a procurement officer; and (iii) a social/environmental specialist.
- 3.4 There are no recent environmental and/or social studies on the condition and usage of the individual projects. The social and environmental assessment for the sample projects would be done during project preparation while those for the global projects would be funded under the institutional strengthening and studies component of the loan.
- 3.5 The project will comply with the Bank's Environmental and Social Safeguard Policies (OP-703). At present, the project triggers the following safeguard policies: OP-704; OP-102; B.01, B.02; (B.03); (B.04); (B.05); (B.06); (B.07); (B.11); and (B.17).
- 3.6 The roundabouts identified for inclusion in the program would require land acquisition to facilitate the construction. This acquisition triggers OP-710 and would require the preparation of Resettlement Action Plan.

³ National Environment Summary, United Nations Environmental Program, 2010.

- 3.7 Minimally an Environmental Analysis (EA) will be prepared for each project proposed under the program. The EA process will abide by the consultation requirements with potentially affected parties as defined in IDB's policies and directives, specifically B.6 Consultations. The consultation processes will also include cottage meetings or other mechanisms that facilitate access by directly affected stakeholders.

IV. ENVIRONMENTAL AND SOCIAL SETTING

- 4.1 Barbados is a small island state in the Caribbean Sea with a landmass of 430 km². Notwithstanding its small size, the country is home to 289,683 citizens giving rise to a population density of 659 persons/km². The high population density creates a need for land transportation for internal movements of people and goods; as such, the island road network consists of some 1,750 km roads of all classes. The road density is 3.72 km/km² on the island and serves to connect the population island wide.
- 4.2 The island is located between the Caribbean Sea and the Atlantic Ocean. The 86% of the island is made up of a karst landscape of deeply fractured and gullied limestone laid down in a series of terraces, deeply incised by numerous gullies and underlain by a complex underground cave system. The remaining land area consists of the sedimentary deposits of the Scotland Series. The island is relatively flat, with the highest point being Mount Hillaby at 336 m (1,104 ft.). The majority of Barbados' population is settled along the south-east, south and west coasts of the island, predominantly in the coastal areas of the parishes of St. Philip, Christ Church, St. Michael, St. James, and the southern reaches of St. Peter. The 'suburbanization' phenomena emerging from the capital, Bridgetown is expected to continue, leading to the gradual increase in densities to the northwest, north and east of Bridgetown, while most other areas will remain relatively constant.⁴
- 4.3 Barbados has a tropical climate comprising of one wet and one dry season (less rainfall); the wet season runs from June to November while the dry season is December to May. Annual precipitation ranges between 40 inches and 90 inches with the majority occurring in the wets season. The climate is classified as dry and sub-humid with temperature on the island during the year ranging between 21°C and 31°C corresponding to the wet and dry seasons respectively. By virtue of its location Barbados is located outside of the principal hurricane belt for the Atlantic and rarely experiences extreme tropical storms.
- 4.4 The roads identified for inclusions in the program are strategically located in the 11 Parishes of Barbados (see figure 1). The types of road vary between primary and second roads and locations are both in urban and farming areas. The users of the road are diverse which have to be taken into account in the design solution. The designs will include, pedestrian sidewalks, and road crossings where necessary.
- 4.5 Construction along the corridors would result in some level of disruption mainly to traffic flow. A Traffic Management Plan, Social Engagement Plan and Grievance Mechanism, will form part of the execution tools to mitigate the impacts of the construction works. Mitigation measures for any identified temporary impacts during construction and/or permanent impacts during operation.

V. KEY POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS AND RISKS

- 5.1 The program will have significant positive impacts and will benefit a large number of people by improving connectivity through the reduction of congestion and loss of time, reducing air pollution and accidents, and improving conditions for economic development, among others.
- 5.2 The potential negative impacts related to the project can be grouped into two different categories: (i) temporary, related mostly to construction activities; and (ii) permanent, related to land acquisition use changes and possible relocation of homes and businesses.
- 5.3 Temporary environmental impacts from construction activities include traffic congestion due to the presence of construction equipment, potential air and water pollution issues related to transportation and construction practices, noise generation around inhabited areas, potential contamination of soils in campsite facilities and workshops, health and safety issues, the potential for accidents, the disturbance of alternate roads to be used during construction as by-passes, etc. All of these impacts are easily identifiable; minor to moderate in magnitude; temporary in duration; spatially restricted; preventable or controllable with widely available, technically simple and cost-effective mitigation techniques; and reversible in the sense that an affected area can return to its pre-existing condition after an impact occurs. Mitigation activities can be included in an environmental management plan specifically designed for the affected areas. Temporary social impacts include nuisance from traffic, noise, air and dust emissions, as well as disruption of daily routines and potentially of business activities and services. Temporary disruptions that may become permanent or cause permanent impacts or non-recoverable losses need to be identified so they can be mitigated and compensated.
- 5.4 Permanent social and environmental impacts are likely to arise to the extent homes or businesses need to be partially or fully relocated or are affected by conditions that change their value, or impair their access or other functional characteristics. Easier access and changes in traffic pattern during the operation of the upgraded roads may also result in changes in land use (densification, gentrification, and shifts between agricultural, industrial and residential uses) that can have environmental and social impacts especially if underlying tenure and land use planning frameworks are weak.
- 5.5 Traffic safety during and after construction is a major concern given the current congested state of some roads and intersections, lack of appropriate ancillary facilities, absence or poor enforcement of traffic rules, and deficiencies in safety awareness and education of drivers and other road users.

VI. ENVIRONMENTAL AND SOCIAL DUE DILIGENCE STRATEGY

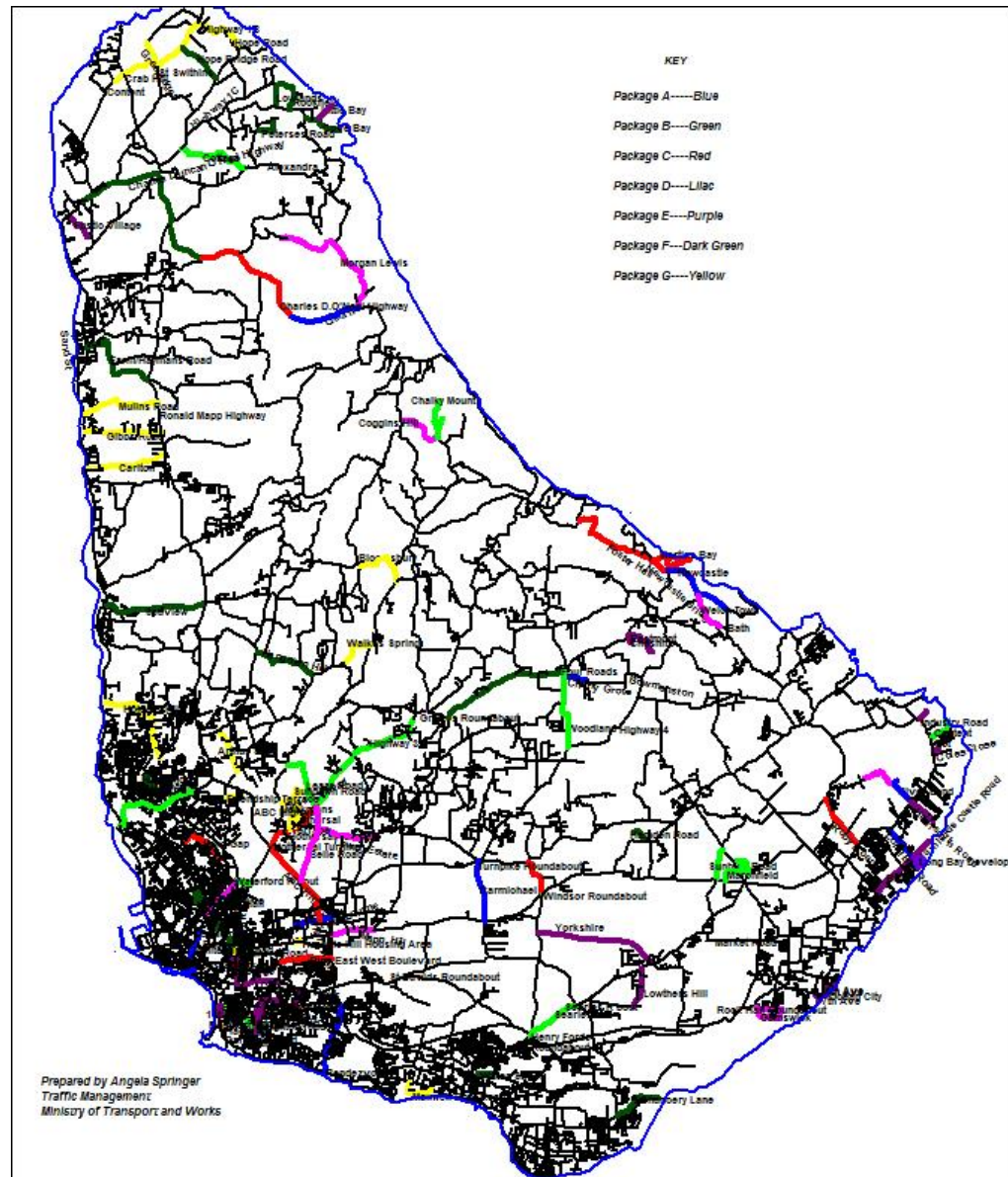
- 6.1 The project team proposes the following socio-environmental strategy to ensure the sustainability of the program:
 - a) Conduct an Environmental and Social Analysis (ESA) of the program as a whole so that a management framework can be set up to provide for Environmental and Social Impact Assessments (ESIA) or other environmental and social studies as deemed appropriate for each particular project in accordance with terms of reference to be approved by the Bank, ensuring analysis of design alternatives that take into account environmental and social factors and compliance with local

regulations and Bank's policies, prior to the call for bids for each project and/or any disbursement in respect thereof;

- b) development of an Environmental and Social Management Plan (ESMP) including preventive and mitigating measures, monitoring, supervision and contingency programs, as well as general and specific environmental specifications for each selected eligible project;
 - d) for any and all relocation requirements, the development and implementation of a resettlement plan that will comply with the Bank's OP-710 Involuntary Resettlement Policy. The development and implementation of any such Resettlement Plan(s) (RP) of the affected population, will be required to be coordinated with the final engineering designs, and presented to the Bank for approval as a condition prior to the Bank's no objection to the bidding documents for construction works and engineering supervisory services, as well as of construction and supervisory contracts;
 - e) allocation of necessary financial resources of the loan to ensure there is adequate implementation, follow-up and control of all necessary environmental and social mitigation and management activities;
 - f) the retaining of a project supervision firm to support the MTW staff in monitoring construction activities, including independent supervision of environmental and social measures; and
 - g) a reporting system and Bank supervision framework to ensure adequate compliance.
- 6.2 The Environmental and Social Due Diligence (ESDD) will include site visits, review of existing documentation of each project and review of institutional capacity in order to ensure that the environmental and social assessments at the program and project levels will include the requirements necessary to evaluate the potential impacts and risks resulting from the construction and operation phases of the projects, and operation and closure of materials extraction and disposal sites, and will specifically address the following:
- OP-703 Directive B.2. Country laws and regulations: assess program and project compliance with applicable country (e.g., national, provincial, municipal) environmental, social, and health and safety regulatory requirements (e.g., laws, regulations, standards, permits, authorizations, applicable international treaties/conventions) and recommend any measures needed if non-compliances are identified.
 - OP-703 Directive B.5. Environmental assessment requirements: require that each project ESA or ESIA:
 - Consolidate the environmental and social impact assessment of all project components, including a cumulative impacts assessment:
 - Evaluate potential impacts from project facilities, ancillary facilities and relocation/resettlement activities;
 - evaluate effects of each road project on land use changes in the short and long runs;
 - evaluate project effects on the nearby environment (surface and ground water, soil, air quality) both during construction and operation;

- characterize the populations in the road corridor (direct and indirect areas of influence) and identify the presence of any vulnerable groups and the specific needs of different road users and nearby residents, and clearly document potential impacts and proposed mitigation measures;
 - propose adequate environmental and social mitigation measures and monitoring, considering their completeness, sufficiency of detail, feasibility, cost, definition of responsibilities, schedule, and quality control;
 - present adequate health and safety plans and procedures for project-specific health and safety risks (with particular attention to traffic and pedestrian safety), adequate level of training to be performed, and sufficient resources to be made available to ensure adequate implementation;
 - present a project ESMP including key indicators and requirements for environmental and social performance during project execution and operation;
 - provide for contractors and operators, environmental, social and health and safety management systems for all project phases that are reasonably consistent with ISO 14001 and OSHA 18001 (for environment and health and safety, respectively); and
 - propose program and project level traffic safety measures to be incorporated in each project or in a program level Traffic Safety Program.
- OP-703 Directive B.6. Consultations: consultations with affected parties will be performed equitably and inclusively with the views of all stakeholders taken into account, including in particular: (i) equal participation of women and men, (ii) socio-culturally appropriate participation of indigenous peoples; and (iii) mechanisms for equitable participation by vulnerable groups.
 - OP-703 Directive B.11. Pollution prevention and abatement: identify emissions and potential risks of contamination and the mitigation measures and standards that the projects will have to meet.
 - OP-710 Involuntary resettlement: establish selection criteria to exclude from the program any projects that would require significant resettlement activities. Prepare guidelines for project specific Resettlement (Action) Plans consistent with IDB's OP-710 Involuntary Resettlement Policy that ensure that each project will: (i) prepare a social baseline for potentially physically and economically displaced people and communities; (ii) develop or set the criteria to develop a project census to accurately inventory the number of people affected by the project; and (iii) develop guidelines for the preparation and implementation of Location Impact Management Plans designed to mitigate or compensate the impacts of disruption (temporary or permanent) of economic and livelihood activities.
- 6.3 At the end of the ESDD, the Bank will prepare an Environmental and Social Management Report (ESMR) summarizing the results of the due-diligence and establishing the environmental, social, and health and safety measures that are necessary to ensure that the program and the projects it finances will comply with the Bank's environmental and social safeguards, including: (i) selection criteria to ensure that projects that the Bank would classify in category A are excluded from the program; (ii) provisions to ensure that the environmental and social studies required for each

Figure 1. Map Depicting Proposed Roads



INDEX FOR COMPLETED AND PROPOSED SECTOR WORK

Description	Funding	Expected Dates	References & hyper links to Technical files
<ul style="list-style-type: none"> • Carmichael and Turnpike Junction Round About Design • Prince Road Improvement Design • Windsor Brighton Improvement Design • Roads Rehabilitation Cost Estimates 	Completed by GoBA	Completed	
Road Rehabilitation and Upgrade Sample (1) Technical Designs (2) Economic Feasibility Analysis (3) ESIA	<ul style="list-style-type: none"> • 1 to be funded with MTW's internal budget • 2 and 3 to be funded with Project Preparation Administrative Resources 	Q1 2015	
Social and Environmental Safeguards	See Annexes II and III	-	

CONFIDENTIAL

¹ The information contained in this Annex is confidential and will not be disclosed. This is in accordance with the "Deliberative Information" exception referred to in paragraph 4.1 (g) of the Access to Information Policy (GN-1831-28) at the Inter-American Development Bank.