



# Final Report

The Ministry of Public Works and Communications

## Guyana: Transport Sector Study

### Volume II: Main Report

December 2005



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## Overview

The Final Report of the Guyana Transport Sector Study is composed of four parts:

**Volume I: Executive Summary**

**Volume II: Main Report**

**Volume III: Administrative Appendices**

Number	Title
<b>I</b>	<b>Study Methodology</b>
<b>II</b>	<b>Itinerary</b>
<b>III</b>	<b>Consultation: Workshops, Organisations Consulted and People Met</b>
	<b>Workshops</b>
	<b>Steering Committee Meetings</b>
	<b>Prime Ministerial Meetings</b>
	<b>Presidential Meetings</b>
<b>IV</b>	<b>Documents Consulted</b>
<b>V</b>	<b>Curricula Vitae of Consultant Team</b>
<b>VI</b>	<b>Response to comments on the Draft Final Report</b>

**Volume IV: Technical Appendices**

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<b>I</b>	<b>Logical Framework</b>
<b>II</b>	<b>Maps</b>
<b>III</b>	<b>Analysis of the Relevance of the Sector Policy</b>
<b>IV</b>	<b>Analysis of the Policy Options</b>
<b>V</b>	<b>Draft Policy Statement</b>
<b>VI</b>	<b>Terms of Reference</b>
<b>VII</b>	<b>Working Paper No. 30<sup>1</sup></b>

<sup>1</sup> Some of the other Working Papers (Nos. 1-29) have been slightly updated since the Draft Final Report (mid October 2005) and are available as downloads on the **Study Website: [guyanatransportstudy.com](http://guyanatransportstudy.com)**

**List of Working Papers****available as downloads on the Study Website: [www.guyanatrtransportstudy.com](http://www.guyanatrtransportstudy.com)**

- 1 Road Transport Infrastructure
- 2 Air Transport Infrastructure & Operations
- 3 Ports and River Transport Infrastructure & Operations
- 4 Socio-Economic Review
- 5 Economic Outlook
- 6 Review of Financial Data for Transport Sector
- 7 Report on Legal Issues
- 8 Institutional Review
- 9 Ferry Infrastructure and Operations
- 10 Road Transport Operations
- 11 Environmental and Social Issues
- 12 Rural Development Planning and Transport
- 13 Provisional Traffic Forecasts
- 14 Review of Minibus Services in Georgetown [Preparations for Special Study No. 1]
- 15 Shipping Analyses [Preparations for Special Study No. 2]
- 16 Population and Poverty Analyses [Preparations for Special Study No. 3]
- 17 Port Policy and Development Strategy
- 18 River Transport Policy and Development Strategy [Preparations for Special Study No. 2]
- 19 Urban Public Transport Development: [Preparations for Special Study No. 1]
- 20 Capacity Building in support of the Transport Sector Strategy
- 21 Ferry Transport Development: Special Study No. 4
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- 24 Rural Transport Interventions: Special Study No. 3 ToR
- 25 Regional Development Planning for Transport
- 26 Road Network Development
- 27 Transport support to Tourism Industry
- 28 Implementation Programme
- 29 Air Transport development
- 30 Evolving Strategic National Focus and Economic Growth

## Currency and Exchange Rates

The national currency is the Guyanese Dollar (Guy\$).

### Official Exchange Rates (Guy\$ per US \$1.00)

2000	2001	2002	2003	2004	2005
182	187	191	194	198	195

## Disclaimer

This report is financed by the European Development Fund and is presented by **GOPA Consultants** and **E & A Consultants** for the Government of Guyana and the European Commission. It does not necessarily reflect the opinion of the Government or the European Commission.

## Acknowledgements



In compiling this Final Report the Study Team of Experts and project office staff have been assisted by many persons in Guyana and other countries. We would like to thank all these persons for kindly giving their time, efforts and support.

Whilst we cannot acknowledge all of these people personally, we are pleased to acknowledge with thanks those whose thoughts, information, opinions and suggestions were given during professional interviews and Workshops.

Please visit our Project Website at [www.guyanatransportstudy.com](http://www.guyanatransportstudy.com)

## List of Abbreviations

<b>Abbreviation</b>	<b>Meaning</b>
ACAAC	Association of Civil Aviation Authorities of the Caribbean
ACC	Area Control Centre
ACS	Association of Caribbean States
ADC	Aerodrome Control
AFIS	Aerodrome Flight Information Service
AIP	Aeronautical Information Publication
AIRAC	Aeronautical Information Regulation and Control
AIS	Aeronautical Information Service
ANS	Air Navigation Services
ANSP	Air Navigation Service Provider
AOAG	The Aircraft Owners Association of Guyana
APC	Approach Control
APP	Approach
ATC	Air Traffic Control
ATCC	Air Traffic Control Centre
ATCO	Air Traffic Control Officer
ATM	Air Traffic Management
AHWAES	The Art Williams/Harry Wendt Aeronautical Engineering School
BOT	Build Operate Transfer
CAA	Civil Aviation Authority
CAD	Civil Aviation Department
CARICOM	Caribbean Community
CDB	Caribbean Development Bank
CEO	Chief Executive Officer
CJIA	Cheddi Jagan International Airport
CJIAC	Cheddi Jagan International Airport Corporation
CNS	Communication, Navigation and Surveillance system
CSME	Caribbean Single Market and Economy
CIDA	Canadian International Development Agency
CTP	Community Transport Policy
CSME	Caricom Single Market and Economy
CTPU	Central Planning Transport Unit (at the MPW&C)
DCA	Department of Civil Aviation

<b>Abbreviation</b>	<b>Meaning</b>
EC	European Commission
ECAC	European Civil Aviation Conference
EIA	Environmental Impact Assessment
EIU	Economist Intelligence Unit
EU	European Union
EMP	Environmental Management Plan
EPA	Environmental Protection Agency
Eurocontrol	The European Organisation for the Safety of Air Navigation.
FAA	The Federal Aviation Administration (of the USA)
FCR	Fire, Crash and Rescue
FIR	Flight Information Region
FTAA	Free Trade Agreement of the Americas
GCAA	Guyana Civil Aviation Authority
GDF	Guyana Defence Force
GINA	Government Information Agency
GLSC	Guyana Land and Survey Commission
GNSS	Global Navigation Satellite System
GoG	Government of Guyana
GPS	Global Positioning System
GTL	General Transport Law
IADB	Inter-American Development Bank
ICAO	International Civil Aviation Organisation
IDB	Inter - American Development Bank
IIRSA	Integration of Regional Infrastructure in South America
IMC	Interim Management Committee
IMF	International Monetary Fund
ISO	International Organisation for Standardisation
MARAD	Maritime Affairs Department
MEDEVAC	Medical Evacuation
MGMP	Municipal Governance and Management Programme
MLG&RD	Ministry for Local Government and Regional Development
MPW&C	Ministry of Public Works and Communications
MTCT	Ministry of Transport, Communications and Tourism
NAO	National Authorizing Officer
NA or n.a.	Not available

<b>Abbreviation</b>	<b>Meaning</b>
NDC	Neighbourhood Democratic Council
NDS	National Development Strategy
NLRDP	National Long Range Development Scheme
OAI	Ogle Airport Inc.
OECS	Organisation of Eastern Caribbean States
OGV	Ocean Going Vessel
REPA	Regional Economic Partnership Agreement
PRSP	Poverty Reduction Strategy Paper
PPP	Public Private Partnership
PPSIP	Public Private Sector Infrastructure Programme
RASOS	Regional Aviation Safety Oversight System
REPA	Regional Economic Partnership Agreement?
RDC	Regional Democratic Councils
Rwy	Runway. Note that a runway is designated two digit numbers (e.g. 06/24) each of which when multiplied by ten gives the centre line bearings (from magnet north) for each direction of approach.
SAFA	The European (ECAC) Safety Assessment of Foreign Aircraft programme
SARPS	Standards and Recommended Practices (of ICAO)
TBI	Third Border Initiative (of FAA)
THD	Transport and Harbours Department
ToR	Terms of Reference
TSTI	Towards Sustainable Transport Infrastructure (a transport sector approach by the EC)
TWR	Aerodrome Control Tower
UNDP	United Nation Development Programme
VOC	Vehicle operating costs
VWD	Vehicle weights and dimensions
WP	Working Paper
WSG	Work Services Group (MPW&C)



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## 1 Transport Strategy Development

### **Economy**

Despite its natural resources, and well-educated population, Guyana is the fourth poorest country in the Western Hemisphere, with a per capita income below 1,000 US\$ (983 US\$ in 2003, or US\$ 4,284 at PPP). In real terms, inhabitants have not benefited from significant improvement since the 1970's as GDP fell from the 1970s value to about 300 US\$ in 1989 and has been recovering since then. Guyana remains a small economy, despite being endowed with natural resources like gold, diamonds, bauxite, fertile land, and large tropical forests.

The economy is primarily resource-based with agriculture, mining, forestry and fisheries accounting for some 50% of GDP in 2003. In the last decade, the share of mining and sugar has fallen, whereas services have grown to 38% of GDP. Transport and Communications account for 9% of total GDP. Private business is present in all sectors and contributes about two thirds to the economy. The private sector is composed of about 6-10 large groups, a few medium-sized companies and many small enterprises. The state is present in the sugar sector, public services and bauxite mining. There is a large underground economy which is not accounted for.

### **Settlement and Transport**

Approximately 85% of the country is covered in forest, and the main settled areas are all found in the north of the country within 50 to 100 km of the coast. Total population was some 750,000 in 2002, with more than 20% of the population living in Georgetown and its suburbs. The second and third largest cities in the country are Linden and New Amsterdam, with populations of some 20-30,000 persons.

The declared road system, which connects all the major settlements, is also concentrated in the north and does not extend south of Linden. There is an extensive river system and some small settlements in the interior still depend on inland waterways for their connections to the rest of the country. The two major international ports are found on the Berbice and Demerara Rivers, with general cargo being handled at private wharves in Georgetown, and the output of the bauxite industry, being exported from the port of Linden, further inland on the Demerara River, and from a mid-stream terminal on the Berbice River.

Maintenance of the transport infrastructure and equipment has been poor, partly, but not entirely, due to under-funding, which has meant major, and recurring, expenditures on rehabilitation in all transport sectors, notably roads and airports. The rehabilitation expenditures have been beyond the financial capacity of the Government, and it has been necessary to seek donor assistance.

## 1.1 Policy Framework

### 1.1.1 *Economic Policy*

#### 1.1.1.1 *Economic Development Thrust*

Economic growth has been much affected by political developments. Immediately after independence (in 1966) Guyana chose a socialist type, centrally controlled economic model. This strategy failed and resulted in low or negative growth combined with large fiscal deficits, high inflation and the accumulation of foreign debt. GDP fell from 1970 value to about US\$ 300 per capita in 1989, and has been recovering since then.

A new comprehensive strategy addressing poverty-oriented growth has been designed with the support of donors. The Poverty Reduction Strategy (PRS) develops the ideas contained in the National Development Strategy. It also addresses the missing reforms, namely the transformation of public institutions.

The National Development Strategy (NDS) places great emphasis on development of an adequate transport infrastructure. The Overview to the NDS document of 2000 states in part ‘We attach the highest ... importance ... to the establishment of a road network over the length and breadth of Guyana over the next ten years ... This road network ... will ... assist in the penetration of our interior, in the opening up of new lands ..., and in the facilitation of eco-tourism. Above all, it will contribute immensely to the social and physical unification of Guyana’. The Overview also highlights ‘two deep-water harbours ..., ... improvement of ... airports, and rehabilitation of ... interior airstrips.

#### 1.1.1.2 *Economic Reform*

The Government has recognised that the economy needs to be reformed if it is to survive in the modern world. There is a general commitment to a more liberal approach and the Government has instituted a policy of privatisation of state owned enterprises. The Government is also committed to reducing the size of the fiscal deficit.

#### 1.1.1.3 *Regional Integration*

Guyana is seeking to become more closely integrated into the world economy, and has joined the Caribbean Community (Caricom). This regional grouping of Caribbean states has to a large degree abolished duties on internal trade and has established a common external tariff, which is gradually being reduced. Guyana, through Caricom, has indicated its interest in joining the Free Trade Area of the Americas (FTAA) and may also associate with Mercosur.

The recent revision to the CARICOM treaty, signed at Chaguaramas in 2001, is intended to create a fully integrated and free regional market in all economic sectors, including transport services.

There are no international road transport agreements with Suriname or Brazil, and consequently there is no legal basis for operating cross-border trucking or bus services. There are presently no cross-border links into Venezuela.

A more detailed description of the Linden-Lethem corridor can be found in Technical Appendices (TA) V-26 on download area of the Project Website.

#### *1.1.1.4 Economic Prospects*

The future development of the economy depends upon the success of the PRSP programme, together with the identification of new sources of growth in the non-traditional sectors. If the current pace of reform continues, economic growth will continue to be around 1.5 % p.a. up to 2010, should the Country rely on commodities almost exclusively. However, if the Government is more successful in reforming and in developing new sources of growth as is starting to develop, the growth rate can be expected to increase gradually up to c. 2.7 % p.a. to 2020.

To close the possible gap in the macroeconomic projections, new sources of growth in the non traditional sectors need to continue to be developed. In Guyana, these sources are seen in the development of other non-traditional sectors in agriculture<sup>2</sup>, in particular the aquaculture, beef and poultry sectors, in eco-tourism, and in information and communication technology (ICT). It is noted that some external events (such as current high fuel price levels) are adversely affecting the operations/performance of some agricultural sectors: for instance, the fishing industry.

The potential for developing these areas and thus achieving the “debt sustainability scenario” (of the World Bank/IMF) is there. However, a vigorous private sector, willing and having the means to test the opportunity windows, is necessary. In this context, the intensification of the reform framework turns to be of first importance.

During the next ten years several regional integration initiatives will open the national and regional markets. The EPA, FTAA, WTO driven tariff reductions, and above all the full Caribbean Single Market and Economy (CSME) is scheduled to come on-stream in 2008. There is also the strategic vision of physical integration of South America developed by IIRSA as submitted for discussion to Governments and Regional Organisations. Under such an opti-

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<sup>2</sup> The non-traditional crops sector has experienced very good growth in recent years, with an average growth in exports of 12.05% in recent years. The necessary animal health systems infrastructure is currently being developed to facilitate the exports of beef and poultry and potential markets in the Caribbean region have been identified. The MOA is also proactively promoting the development of the aquaculture industry in Guyana with the view to becoming a competitive exporter of this product.

mistic scenario, average growth rate increases could be slightly higher during 2006-2015 and above 4% towards 2020.

A more detailed description of the economy and its prospects, together with details of the major export industries can be found in Technical Appendices (TA) V-04 and V-05 and V-30 on download area of the Project Website.

### **Box A: Economic Development Framework**

Transport planning must take place in concert with a realistic projection of economic growth, which can provide a sound framework for assessing future traffic demand and potential transport bottlenecks. In Guyana government development planning has been effected since 2000 within the framework of the National Development Strategy (NDS) and the Poverty Reduction Strategy Programme (PRSP).

The NDS of 2000 projected GDP growth of 9 % p.a. for 2001-10, with a downside variant of 6 % p.a. Subsequently the PRSP has been developed, and progressively revised, to follow the same long-term aims as NDS, taking account of implementation costs and macro-economic constraints. The initial PRSP draft projected growth rates of 4 % p.a. for 2002-06 and 6 % thereafter, revised in the 2002 version supported by donors to 2.7 % and 5.0 % respectively. The PRSP Progress Report of 2005, issued after the January floods, now foresees negative growth for 2005, but an average rate of 2.8 % for 2006-09, as the economy achieves its expected recovery. This projection shows the annual rate rising to 3.7 % by 2009.

TA 5 of the TSS, 'Macro-Economic Outlook and Finance' on download area of the Project Website, outlined alternative growth scenarios including the base 'debt sustainability scenario' based on IMF macroeconomic projections, a 'commodity-based growth scenario' and an 'optimistic Integration Impact scenario'. In accordance with this range of scenarios, TA 13, 'Provisional Traffic Forecasts' on download area of the Project Website, developed central forecasts based on a future economic growth rate of 2.5 to 3.0 % p.a., but allowed also for alternative lower and higher growth scenarios.

## **1.1.2 Transport Sector Policy**

### **1.1.2.1 Government Policy**

The policy statement of the National Development Strategy sets out very general goals and objectives, with a view to supporting production and exports. The policy statement defined in the Poverty Reduction Strategy Paper, as it concerns transport, is geared more towards the rehabilitation and maintenance of infrastructure.

Interestingly, the specific policy priorities include:

- the study of the economic feasibility of developing a deep-water port, a container port;
- strengthening of the capacity of the Roads Administration of the Ministry of Public Works and Communications, and of the Ministry of Local Government; and
- The consideration of several options, including user fees and the contracting out of ferries to the private sector (to achieve sustenance of maintenance and reconstruction programmes).

There is an acceptance of the “user pays” principal, and a corresponding acceptance that subsidies should therefore be reduced. The strategy reflects the importance given, in practice, to rehabilitation over maintenance.

The strategy does not specifically mention any actions in respect of appropriate regulation and legislation. The remit of the Ministry of Public Works and Communications (MPW&C) includes important areas other than transport, but would be the main implementing agency for transport strategy implementation.

## 1.2 Features of the Sector

### 1.2.1 Roads and Bridges and Road Transport

The road network is very small, totalling some 2,600 km, and road network density is sparse (See Table 1-1). The main road network is formed in the shape of a ‘T’; the cross-piece of the ‘T’ runs NW-SE across the Atlantic coast, interrupted by major crossings of the Essequibo, Demerara, Berbice and Corentyne Rivers. The trunk of the ‘T’ runs southwards from Georgetown to Linden, and beyond. Almost all ‘Declared’ roads lie within the coastal area, where most people live. A sparsely populated hinterland is served by a network of tracks and trails; almost all are of gravel or earth and are generally in poor condition.

**Table 1-1: Classification of Road Network**

Class of Road	Paved/km <sup>3</sup>	%	Unpaved/km	%	Total/km	%
Primary roads	435	17	58	2	493	19
Coastal area minor roads (feeder roads)	66	3	448	17	514	20
Interior roads & trails	21	1	1549	60	1570	61
<b>Total</b>	<b>522</b>	<b>21</b>	<b>2055</b>	<b>79</b>	<b>2577</b>	<b>100</b>

\* Percentages of total road network

\* 50% of the non-paved roads are ‘all weather’ trails – ‘Proposals for Loan for Mahaica – Rosignol Road Rehabilitation, IADB, 2001’

<sup>3</sup> Paved roads are engineered roads with a wearing course of bituminous material or concrete



Road transport reportedly carried 97% of passenger traffic movements and 35% of freight traffic movements: The majority of these movements are concentrated within the most populated coastal strip. There is some uncertainty over the exact size, condition and composition of the national road network depending on which data source is reviewed. The national public road network may total some 2,600 km, comprising ‘Declared’ and ‘Undeclared’ public roads and tracks<sup>4</sup> (some 40% and 60% of the network, respectively).

This provides a road network density of 12 km/1,000 sq. km. (or alternatively 3.5 km/1,000 persons). Since most roads are located along the coastal strip<sup>5</sup>, the hinterland density is much lower. However, there are many tracks and trails in the hinterland (constructed by mining and forestry concessions and others) which are not officially recorded. MOLG&RD policies currently appear to encourage the expansion of this network. In addressing the Road density network, from a population density perspective, it may be useful to treat Guyana in two parts, firstly a coastal strip from Charity to Moleson Creek, with population bands extending up the Demerara River to Timehri, with similar bands extending up the Mahaica, Mahaicony, Berbice Rivers and secondly the rest of the country.

**Photograph 1-1: Timber Bridge on Linden - Lethem Road**



The current condition of the network is in general regarded as poor, as indicated in Table 1-2 below.

<sup>4</sup> As defined in the Schedule of Public Roads, Road Act, Chapter 51:01, Revised Laws of Guyana. Most ‘undeclared’ roads and tracks are situated in the interior.

<sup>5</sup> The ‘coastal strip’ extends from Charity to Moleson creek, with population bands extending up the Demerara to Timehri, and also up the Mahaica, Mahaicony and Berbice Rivers.

**Table 1-2: Condition of Road Network in Guyana**

Class of Road	Paved						Unpaved					
	Good		Fair		Poor		Good		Fair		Poor	
	Km	%	km	%	Km	%	km	%	km	%	km	%
Primary	152	35	185	43	98	22	-	0	-	0	58	100
Coastal area minor roads (feeder roads)	-	0	42	64	24	36	-	0	24	5	424	95
Interior roads & trails	-	0	21	100	-	0	282	18	438	28	829	54
<b>Total</b>	<b>152</b>	<b>29</b>	<b>250</b>	<b>48</b>	<b>122</b>	<b>23</b>	<b>282</b>	<b>14</b>	<b>462</b>	<b>22</b>	<b>1311</b>	<b>74</b>

The proportion of the paved primary road network in good condition is equivalent to 35%.

Most of the unpaved network is in bad condition. There is an extensive paved network in the urban areas of Georgetown, Linden and New Amsterdam. A large portion of the urban network is generally in poor condition.

#### 1.2.1.1 Traffic Volumes

Traffic volumes are generally low. The most comprehensive data are for the year 2001 and come from a Road Safety Report prepared by Dr. Budhu. These cover some two thirds of the primary network. A summary of results (including some combination of flows for adjacent sections) is given in Table 1-3. They give estimated values of annual average daily traffic (AADT). Over a total distance of 301 km, there is seen to have been an average daily flow of just over 5,000 vehicles per day (vpd). On the 70 km Soesdyke- Linden highway, traffic appears to be around 1,000 vehicles per day. On most other roads flows are much lower, often well less than 100 vpd.

**Table 1-3: Traffic Flow Data on Selected Primary Roads for 2001**

Road Section	Length (km)	AADT (2001)
Georgetown–Buxton	18	10,948
Buxton–Mahaica River	22	5,033
Mahaica River–Rosignol	65	2,185
New Amsterdam–Corriverton	71	3,990
Corriverton–Moleson Creek	18	3,930
Georgetown–Golden Group	13	13,997
Golden Group – Soesdyke	20	4,733
Soesdyke–Timehri	6	2,106
Maria's Lodge–Vreed en Hoop–Den Amstel	35	8,590
Den Amstel–Parika–Larimakabra	33	4,360
Weighted Average	(301km)	5,108

Source: 'Road Safety Report', Dr. G. Buddhu

Within the Georgetown area, flows on some streets now approach 15,000 vehicles per day and moderate congestion is experienced at some times of the day; indicated in table 1-3. A national road traffic increase of c. 3% p.a. is suggested.

#### *1.2.1.2 Road Maintenance*

MPW&C has the primary duty for maintenance of road infrastructure in the country, being responsible for all primary declared rural roads which constitute the major part of the core network. However, the city and town councils of Georgetown, New Amsterdam and Linden are responsible for most of the streets in their municipalities, while the Ministry of Local Government is responsible through the Regional Democratic Councils (RDC's) for feeder and secondary declared roads. Many undeclared roads and trails also exist, mainly in the interior, which are maintained by mining companies, forestry concessions and others. The total lengths of the declared and undeclared networks are estimated to be as follows: declared (primary) 493 km, declared (feeder and secondary) 514 km and undeclared 1,570 km.

Nearly 90% of the primary network is paved, while the proportion is below 15% for the feeder network, and virtually all the undeclared network is unpaved. Some important roads, including notably most of the Linden-Lethem road towards Brazil, are not currently part of the declared network.

MPW&C, MOLG&RD and the urban councils have all experienced chronic problems in maintaining their networks, caused by both organisational and financial problems.

Responsibilities for various administrative functions, such as issue of vehicle and driving licences, maintenance of traffic lights and signs, and enforcement of traffic rules and regulations are spread between several government bodies.

#### *1.2.1.3 Road Maintenance Organisation and Funding*

##### **Ministry of Public Works and Communications**

A major organisational change was made within MPW&C in 2001 when the Works Services Group (WSG) was established. This change occurred at the same time as implementation of an Inter-American Development Bank (IDB) programme to rehabilitate much of the coastal primary network, which has greatly improved its overall condition. This occurred at a time when a four-year programme for rehabilitation of the 70-km Soesdyke-Linden Highway (1997-2001) had also just been completed.

There has also been a substantial move since 2003 from force account operations to performance contracts, covering a reported 414 km or some 85 per cent of the primary declared network. This appears to have ensured that routine maintenance operations, essential but

widely ignored in many countries worldwide, are now being carried out on the rehabilitated roads.

### **Ministry of Local Government**

The Ministry of Local Government (MOLG&RD) is responsible, through regional democratic councils, for maintenance of feeder and secondary roads. Relatively small sums have been indicated for road maintenance expenditure by RDC's in recent reports of the Auditor-General.

### **Municipal Councils**

Road maintenance is also carried out on urban roads by Georgetown City Council and by the councils in New Amsterdam and Linden. The number of roads to be maintained by the Georgetown council is 160. Many of these roads are observed to be in very poor condition, and it is again clear that finance and technical capacity are key constraining factors. It is understood that in Georgetown MPW&C may sometimes be called upon to maintain roads which strictly are the responsibility of the city. It is also clear that maintenance of traffic lights and other road furniture is almost totally non-existent, and indeed traffic lights are reported on occasion to have been repaired by the traffic police.

#### *1.2.1.4 The Road Maintenance Funding Problem*

It is clear that the funds being made available for road maintenance are grossly inadequate. Despite the recent rehabilitation of much of the primary network, there must remain serious concern about the capacity to continue high-quality maintenance in future. This is related not to the technical capacity of the new institutional arrangements, which indeed represent a great improvement, but to the fear that funding for routine maintenance will continue to be insufficient. Current expenditure on maintenance has remained far below optimal levels, and it seems clear that it will remain difficult to secure the necessary funding in future. Maintenance is not an exciting or glamorous activity, and it may be very hard for those not directly involved in road administration (and for the general public) to appreciate the cumulative, and initially invisible, effects of failing to perform it. Hence, where there is severe overall pressure on government finances, as in Guyana, there will always be great danger that hard-pressed financial officers will drastically cut road maintenance budgets. This has happened in many countries around the world, and inevitably the eventual result is that expensive infrastructure will slowly deteriorate to the point where at best roads will require rehabilitation at a cost considerably exceeding what strictly need have been incurred, and at worst roads will break up completely so as to require complete reconstruction. In either case not only are eventual rehabilitation expenses much higher than they need have been, but vehicle operating costs will also increase, sometimes very significantly, causing a direct adverse impact on economic output and growth.

Two measures which have been widely instituted around the world in the last ten years or so are establishment of autonomous and dedicated road administrations, and the securing of dedicated finance through a road fund. Different models have been attempted in different

countries, and levels of success have been variable. In Guyana itself a consultant's report recommended establishment of a road maintenance fund (Gordon T. Bodely, 1995), but no such fund was ever implemented at the time.

Several years later, a road maintenance fund was indeed instituted, in association with a major IDB associated initiative to rehabilitate most of the core network. It appears, however, that the fund remains to be properly activated, and that it is not formally associated with the current maintenance expenditures. Indeed scrutiny of the Auditor-Generals reports for the period for 2001- 2003 which indicated that the funds were formally used for only one of those years, for a component of capital expenditure.

Adequate maintenance of the road system brings real and very substantial economic benefits, as the costs of maintenance are repaid many times over by savings in vehicle operating costs. The ownership of vehicles is widespread in Guyana, as is the knowledge of the costs that poor roads impose on vehicle owners and all who use them, whether in their own vehicles or on public transport. Unfortunately the causal connection between lack of maintenance and accelerated road deterioration is less readily appreciated.

Roads and highway authorities now exist in many countries as specialist organisations charged with maintenance and development of core road networks. Though their characteristics may vary quite widely, the typical authority will have a substantial degree of commercial and financial autonomy, and will be responsible to a Board or parent Minister to perform clearly defined functions. Funding may come from the general government budget, from earmarked funding, from user fees, or from a combination of these sources.

Creation of a roads or highway authority in Guyana would be appropriate for at least two reasons. Firstly it would reflect government policy as set out in the National Development Strategy, and promote distinction of function between MPWC as formulator of policy and strategy, and specialist agencies as performers of transport services. Secondly, it would complement the moves already initiated in the maritime and aviation sectors with the formation of MARAD, GCAA and CJIAC.

The major difference from the three other mentioned agencies would be that, while major maintenance activities require to be performed, a roads authority will have little if any direct income from the provision of services. In a low-income country with generally low traffic levels, it cannot be envisaged that significant income will be earned from user fees. While it is possible that some income could be realised directly from road tolls (for instance on the Soesdyke-Linden Highway, or at major bridges on the East Coast Demerara road), this would certainly be limited. The question of financing of road maintenance is, however, addressed in the following sub-section. It is recommended in any case that a roads authority be established, to be run by a Director-General reporting to a Board. Ideally the Board should have mixed public and private sector membership, with places reserved for key users of the road network. Key staff should have expertise in disciplines including road design, construction and maintenance, network planning and classification, traffic studies, axle load control, road safety, economic evaluation and environmental appraisal.

As mentioned elsewhere in the Study Reports, much has been achieved in the past few years with the revitalisation of maintenance activities under the Works Services Group. The new organisation should seek to absorb and build on the WSG personnel and experience which have made these achievements possible. Creation of a Roads Authority should be seen as a forward evolution of the WSG organisation, and not in any sense a return to the drawing board.

Once a decision to establish a highway authority has been confirmed, a detailed implementation study should be carried out to define detailed structure of the new authority, exact specification of duties of the organisation as a whole and of individual key staff, and sources of funding together with financial targets and obligations. This study should look in detail at all organisational aspects of road construction and maintenance, and should also specifically consider whether and how secondary and feeder roads should be brought into the same system. This will involve careful consideration of the inter-related responsibilities of MPWC, the new Roads Authority, MOLG&RD and the regional and neighbourhood development councils. The study should present a detailed plan for implementation, specifying a detailed mandate for the new organisation, setting out training needs, and including due analysis of all cost implications.

With the need for such a study, and the need also for due subsequent consideration by Government, it may be envisaged that firm decision on establishment of a Road Authority might be made by 2007, with actual implementation taking place by 2008.

In the circumstances the following course of action is now suggested:

- (i) Government should commit itself to fully establishing the Road Maintenance Fund as an active component of WSG (or a future Roads Authority), with strong professional management.
- (ii) An early study should be commissioned (see above) to establish a pavement management system, and to assess foreseen routine and periodic maintenance needs for a planning period of ten years (till 2015).
- (iii) Government should commit itself to ensuring that the Road Maintenance Fund is given adequate resources, on a year-by-year basis, to carry out the foreseen maintenance requirements.
- (iv) Measures should be taken to ensure that the Fund operates effectively and transparently, that it is clearly accountable to Government, and that both financial performance of the Fund and physical performance of maintenance activities are monitored and evaluated on a regular basis.
- (v) An initial review of the system should be made after two years operation, with a second more comprehensive review of its strengths, weaknesses and overall effectiveness being made after five years of operation.

## Bridges

The Demerara Harbour Bridge is a 1.8 km pontoon crossing of the Demerara River upstream of most of the Georgetown port facilities. In 2003 DHBC was established as a public corporation, with a Board of Directors appointed by the Minister. The bridge currently makes only a small operating surplus, insufficient to cover maintenance expenses in the long term. Ideally the bridge should be operated as a self-supporting commercial operation free of price controls. If this is not possible on grounds of customers' capacity to pay, or for other political reasons, then financing responsibilities should be clearly set out, with open definition of regular subsidy arrangements if these are considered necessary.

**Photograph 1-2: Demerara Harbour Bridge aspects**



A new low level bridge is planned crossing the Berbice River near New Amsterdam

### 1.2.1.5 Vehicle Fleet

Up-to-date fleet statistics are difficult to obtain and are highly contradictory. Attempts to obtain definitive and accurate data from the responsible body, the Guyana Revenue Authority (GRA) have been unsuccessful. Total fleet in 1985 was some 54,000 vehicles, with some 51,000 vehicles reported in 2004. The growth trends are inconsistent according to official licensing data; between 1989 and 1999 there was annual growth of 4.5%, with 11.9% annual growth between 2000 and 2004. There are now believed to be some 20,000 cars and mini-buses in the country and car ownership, at 25 per 1,000 people, is low. The commercial vehicle fleet is relatively small, with only 16,000 trucks of all kinds.

### *1.2.1.6 Vehicle Weights and Dimensions*

The technical regulations on vehicle weights and dimensions (VWD) are set by the Ministry of Public Works and Communications. It is widely believed that many of the trucks operating in Guyana are overloaded and that this is a major cause of road damage, though there is no system of axle load weighing to give data to support this view. However, there is no doubt that heavy axle loads accelerate road deterioration.

Axle load legislation dates back many years. There is an allowable Goods Vehicle Weight (GVW) of 72,000 lbs (~33tons), with a maximum permissible axle-load depending upon tyre sizes upon twin or single wheels, but with a maximum load of 8 tons. This limit may be compared with current international standards: for Brazil and Venezuela of 13 T: and for Suriname of 8T (as defined in international protocols which Guyana has signed, but not yet ratified). Serious overloading of trucks is reported over and above the current international norms. There is resultant damage to road pavements, shoulders, verges and sidewalks. The existing axle-load limit in Guyana is very low by international standards. Since Guyana has signed various international agreements, it appears that these limits will be raised in future. Revision of the limit should take into account the potential for cross-border traffic, which is likely to arise as a result of closer regional cooperation and proposed construction of roads to Brazil and Venezuela.

### *1.2.1.7 Bus Operations*

In 2002, there were 6,135 buses and minibuses licensed in Guyana, according to official records from the Guyana Revenue Authority (Licensing Authority). In 2003, from Traffic Police records, about 2,800 ‘minibuses’ of various types were licensed to operate a public transport service in Guyana, (about 2,300 in the Georgetown area). Inland transport is also provided by a few carriers such as INTRASERV Inc., a transport company two or three years old, which operates large coaches for long distance passenger transport.

### *1.2.1.8 Commercial Goods Vehicles*

Companies usually possess their own trucks to carry goods for their own purpose. There is little economic regulation of commercial trucks. The business has to be registered, in the same way as other businesses, the driver must have a valid driving licence, and the vehicle must be insured.



### 1.2.1.9 Road Safety

Over the whole network, fatal accidents average about 100 p.a. (estimated at about 20 deaths per 10,000 vehicles in 2004<sup>6</sup>) with a total of c. 2,800 recorded road accidents p.a. Over the whole network, driver error is responsible for 60% of recorded accidents (21% due to excess speed, 14% to loss of control, 18% to reckless driving, and 9% to improper overtaking). Reportedly, driving under the influence of alcohol and other substances is a major accident cause. Victims typically comprise Pedestrians (37%), Cyclists (24%), Passengers (22%) and Drivers (20%).

Though not high in absolute terms, these numbers are very large relative to population and the amount of traffic. As the roads are improved, speeds will increase. Higher speeds combined with growth in the vehicle fleet means that the number of fatal accidents is bound to increase. The Georgetown – Buxton road has the worst accident rate in the country with 2.2 fatalities/year/km along this corridor (19 reported road accidents/year/km in 2000) and with the section between Mon Repos and Good Hope recording about 37 accidents p.a. (In this section, 32% of the recorded accidents involved minibuses).

### 1.2.1.10 Urban Transport

It is clear from the available traffic counts that the vast majority of traffic activity in the country is in the Georgetown area. It is also clear that many urban and peri-urban roads are, at certain times of the day, close to saturation. Traffic nuisance (noise and pollution) is nothing like as bad as in many other developing countries, but is nevertheless unnecessarily high.

Road capacity in the central area is visibly reduced by unplanned and uncontrolled parking. Most junctions do not have traffic signals; many tend to jam, as drivers force their way through. There is considerable scope for improving both traffic flow and public amenity through introduction of modern traffic management techniques.

It is stated that around 2,800 minibuses are licensed to operate as public transport. Around 2,200 of these minibuses operate from Georgetown, with 3 routes entirely within the City and a further 9 routes travelling out through the city to suburban and distant destinations. The three city routes [routes 40-41-45] have 445 authorised vehicles whilst the nine other routes from destinations beyond Georgetown have the residual 1,777 vehicles. Curiously, the three city routes comprise 9 variant destinations whilst the other 8 routes comprise 30 variant destinations. This is an unusual feature, as most cities would identify separate route numbers and route characteristics for each individual route. It is assumed that the current arrangements serve the interest of the operators in that they can individually decide which one of the variant routes is the more profitable for their hour-by-hour operations. However, this arrangement is less than helpful to passengers who need to enquire each time which variant of the route the bus will be travelling along.

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<sup>6</sup> For example, this is about 10 times worse than in most European countries.

Minibus operations begin between 06:00 and 07:00 and they operate through to around 19:00, although some minibuses operate later until around 22:00. In effect, many minibus operators work only in daylight hours and not at other times. In addition, during the middle of the day when demand reduces, some operators are not in public service. All city minibus routes and most suburban and distant minibus routes are operated by purpose-built 9 or 12 seater vehicles that have generally been locally modified to increase capacity to 12 or 15 seats respectively. Larger 19 seat minibuses with a central gangway operate services to Linden.

The three city routes operate at very high frequency during peak periods. Operations [together with those from outside the City] are distributed on the streets around the Stabroek Market area in central Georgetown. However, this area is also a major market for traders, is close to the Cross-estuary fast ferries, is shared with building trade wholesalers, and is traversed by heavy container lorries passing to and from the port. There are no purpose built passenger waiting areas nor are there orderly loading arrangements. In short, the area and facilities are far from ideal for public transport.

**Photograph 1-3: Minibuses in Georgetown**



### **Road Transport Facilities for the Development of the Tourist Industry**

The general availability of an all-weather highway network to reach the main tourist destinations is a pre-requisite for movements by road of larger groups of tourists. The 40 km highway from the international airport to Georgetown may be sufficient for domestic purposes but to attract tourists in even moderate numbers it requires safe and fast links. By 2008, over 1,000 tourists will arrive or depart the airport daily and, together with more support staff working or visiting the airport, even more person trips will also be generated. Road conditions to tourist sites outside of the Georgetown area are often poor and therefore visits to sites of interest in the hinterland can involve air travel or inland water transport. Whilst this situation remains, the capacity to expand tourism through larger size groups will not be achieved easily.

No large tourist coaches are currently available. Earlier a few minibuses were used as needed from the stock of ordinary public transport minibuses. However, the large quantity of city and inter-urban minibuses would not meet the high standards of international tourists, although they may be accepted by some [but not all] expatriate Guyanese visitors. Incoming specialist groups may be tolerant of such arrangements as they may see similar conditions in some other countries in a similar phase of development. However, tourism is a competitive market and there is an underlying demand for high standards of delivery in all tourism sub-sectors, so the continued use of such non-dedicated minibuses is not sustainable in the longer term.

There is a soft road from Georgetown via Kurupukari to Lethem to Brazil. The journey takes about 12 hours in a 4-wheel drive vehicle. Improvements have been made to many roads in recent years and travel during the rainy season is now possible. Buses travel from Boa Vista in Brazil to Lethem and from there, there is a Guyanese bus service onwards to Georgetown. The bus service is currently more suitable for adventurous tourists. There is no reliable link to Venezuela.

It is stated that on a few occasions, cruise liners have visited Georgetown for a day visit with the passengers having the opportunity for a few hours to see the sights. However, it is also understood that, with the lack of sufficient minibuses and other road vehicles, conventional port-based sightseeing day and half-day tours were not widely available, with many tourists undertaking simple walking tours of the downtown areas near to the disembarkation point,

It is understood that there are around 6,000 registered minibuses in Guyana but only a small quantity of larger sized buses. There is no dedicated fleet of minibuses or coaches especially for tourism transportation. The quantity of vehicles used by tourists is unknown, although it is likely to be very small in number. The standards and fitments to vehicles suitable for use by tourists are also unknown. However, with some advance knowledge, it is also probable that some of the newer minibuses currently used in public transport could be refurbished to provide improved standards as an interim measure and for non-intensive use. It is believed that only a handful of minibuses are used exclusively in tourism activities on a regular basis.

The three principal skill areas are the knowledge, competence and personality of tour guides and of tour drivers [sometimes rolled into one person acting as a driver-guide] and the technical skills of the staff responsible for ensuring that the transport vehicles are reliable at all times and available whenever and wherever required. These training requirements would need to be built into the overall tourism transport support.

### **Further Information**

Further information on road infrastructure can be found in TA V-01 and TA V- 25. Road maintenance financing is covered in TA V-06, while institutional issues are dealt with in TA V-08. TA V-19 deals with urban transport development. ToR for an Urban Transport Plan for Georgetown (Special Study No. 1) is provided in TA V- 22. Further information on road transport support to the Tourism industry can be found in TA V-27 on download area of the Project Website.

### 1.2.2 *Ports, Rivers, Ferries and Inland Waterways*

International shipping is handled at the ports of New Amsterdam and Everton, both on the Berbice River, and the ports of Georgetown and Linden; both on the Demerara River.

The Port of Georgetown handles general cargo, sugar, grains, petroleum products and other goods for the general population. The Port of Georgetown consists of a number of separate facilities scattered along the east bank of the Demerara River. It seems that, say thirty years ago, most of the port operators were government-owned companies, but that several of these have now been sold or privatised. Linden, some 56 nm South of Georgetown, handles import and export cargoes for the bauxite industry.

New Amsterdam on the Berbice River is the largest port in Guyana in throughput terms. The major facility there is a multi-buoy mooring (MBM) for midstream transshipment of bauxite from river barges to bulk carriers. Besides the MBM there are a number of other shore-based berths scattered along both banks of the river, handling small volumes of a variety of products. Again there is no centralised port administration, though this seems hardly necessary in this case. Navigation services, such as pilotage are provided by the MARAD. There is a permanent pilots' station in Georgetown.

#### 1.2.2.1 *The Ports of Georgetown and New Amsterdam*

The main ports are those of Georgetown and New Amsterdam. The Port of Georgetown handles general cargo, sugar, grains, petroleum products and other goods for the general population and consists of a number of separate facilities scattered along the east bank of the Demerara River. Linden, handles calcined bauxite, import cargoes are fuel oil and diesel fuel and other commodities required for the bauxite industry. The major facility at New Amsterdam is a multi-buoy mooring (MBM) for midstream transshipment of bauxite from river barges to bulk carriers. A vehicle ferry operates between Rosignol and New Amsterdam.

About 50 vessels are dispatched each month on average in Georgetown, while at New Amsterdam there are about 10 vessels per month. In Georgetown, all types of vessels were recorded; in New Amsterdam mainly vessels with bauxite were loaded and a few tankers for the petroleum product supply were discharged. It is noteworthy that the majority of vessels calling at Georgetown consist of container vessels, although there is no dedicated container terminal. The port traffic for 2003 in Georgetown Harbour amounted to some 1.0 million tonnes of exports and some 0.9 million tonnes of imports<sup>7</sup>. Containerised general cargo at

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<sup>7</sup> These figures should be regarded as broad indicators of traffic throughput. There is no Port database at present. The proposed River/ Ports Study would make detailed assessments for individual commodities.

Georgetown amounts to some 0.5 million tonnes per annum handled in c. 40,000 TEU (twenty-foot equivalent units).

**Photograph 1-4: Views of Georgetown Port**



#### 1.2.2.2 Rivers and Inland Waterways

Guyana has an extensive and very important river system, much used for north-south freight transport to the interior, particularly to provide access to the ports on the Berbice and Demerara Rivers. On each river, however, rapids and other navigational obstructions limit navigational possibilities, particularly on the Essequibo.

From East to West, Guyana has four main rivers that flow into the Atlantic Ocean, namely the Corentyne, Berbice, Demerara and Essequibo Rivers. There are many other rivers in the country; but these are navigable only for a short distance because of rapids, cataracts, islands, sandbanks and shoals. There are many canals, used mainly for water conservancy purposes and only locally for transport of sugar cane, fertilizers and produce on small craft. The total length of rivers navigable for vessels and barges drawing no more than 2.0-2.5m is about 450 nm. There is a substantial backlog of work in respect of installation rehabilitation and maintenance of Navigational Aids, and river maintenance dredging programmes should also be undertaken, if economically viable. Furthermore, a priority wreck clearance programme needs to be implemented, in order to ensure adequate maritime safety.

The following river marine craft are required in Phase 1:

1. Buoy tender with 5 t derrick, pile driving facility and mud plough similar to MARWINA,
2. Hydrographic survey vessel fully equipped, vessel similar to SAMMY LUCK; set of on-shore / office equipment for plotting and charting,
3. Mooring buoy for two midstream loading berths including chains (anchors piles available),
4. Self-powered sea-going oily waste reception and treatment barge about 300 t (converted second-hand),

5. Set of cutter head with related equipment, positioning equipment and stock of spare parts for refurbishment of trailing suction hopper dredger STEVE N, hopper capacity 800 cbm, LOA 55 m); and
6. Set of ship-to-shore communication and traffic surveillance equipment for Georgetown Harbour.

The following river marine craft are required in Phase 2:

1. Harbour and salvage tug with min. 35 t bollard pull, fire fighting and oil spill combat equipment,
2. Pilot launch (about 22.00 x 5.60 m); and
3. Patrol boat for harbours and three rivers operated in collaboration with Coast Guard

The ToR for the River Transport Development (Special Study No. 2) is provided in TA V-23 on download area of the Project Website.

#### *1.2.2.3 Essequibo- Demerara Canal*

This Canal projected between the inflow of the Makouria River at the Essequibo River and Sandhills at the Demerara River is also part of the NDS. Initial interviews with the shipping and export industry did not confirm demand for this project. The traffic volume is rather limited; also no large growth potential is seen. Crossing the sea from one estuary to the other is not seen as a navigational hazard. The problem is that larger scale transport volumes would require larger barges of say 3 – 4,000 t capacity with a draft of about 4.00 m. This again would require quite a large cross-section of the canal and thus much higher investment and maintenance costs.

#### *1.2.2.4 Ferry Services*

The width of Essequibo River mouth is such (about 40 km) that a bridge crossing is not feasible in the short or medium term. The ferry boat is obsolete and decaying, with inefficient side-loading operations. It should be replaced by one modern vessel in the short-term, and a second one in the medium-term, depending upon the traffic forecasts. Any new ferries should ideally be of the roll-on/ roll-off type (vehicles drive in and off through the stern or the bows) to offer a high level of productivity (fast loading and unloading process). Wooden stellings, themselves in an advanced state of decay, should be rebuilt to accommodate such 'Ro-Ro' vessels. Ramps are normally built in concrete.

THD runs four River Ferries across the Berbice and Essequibo River; only two ferry services consistently show profits: namely the Rosignol-New Amsterdam service and the Parika-Adventure service. For the remainder, in particular for the North-west service between

Georgetown and Mabaruma, the Government has provided a cross-subsidy funded out of the profits realised by MARAD. Ferry operations have the potential to be profitable. However, capital investment to improve physical assets is badly needed. Ultimately, key ferry links will be replaced by bridges, starting with the Rosignol - New Amsterdam link.

**Photograph 1-5: Views of Ferry stellings and Vessels**



The demand for a reliable and efficient water transport service to the outlying areas of Guyana continues to put a strain on the ageing fleet of vessels operated by the Transport and Harbours Department. For the relatively old vessels, the maintenance required to keep ferry vessels in service costs a lot and represents more than 50% of the total budget according to the General Manager of the THD. Adequate financial resources are unavailable to acquire the equipment necessary to boost or maintain an efficient and reliable ferry transport service. In addition, the weak institutional arrangements and poor financial remuneration for services rendered give rise to a resultant lack of commitment, and consequential high attrition rates, amongst staff.

There are passenger services operated by private launches and speedboats on the Demerara, Berbice and Essequibo Rivers. The fares are two or three times those applied by THD for the same destinations. These private services are, however, well patronised. A new Stelling (also a Ro-Ro type Stelling with concrete ramps) should be built at Supenaam on the West bank of Essequibo River, to shorten the river crossing (now 50 km long from Parika to Adventure)

The 'Barima' vessel provides ferry services between Parika and Bartica (68 km). This vessel, built in 1938, is obsolete and should be replaced by a more modern vessel. The EDF has been active in past support of development of these ferry services, having helped finance purchase of the vessel for the Guyana service and provision of ferry terminals on both sides of the Corentyne River.

### 1.2.2.5 North Western Shipping Service (Kimbia)

**Photograph 1-6: The Vessel Kimbia**



#### **Further Information**

Further information on ferry services and infrastructure development can be found in TA V-9 and TA V-21 on download area of the Project Website.

### **Transport Facilities for the Development of the Tourist Industry**

#### **Yachting Industry**

The industry is nascent. It has been suggested that navigational aids are provided at the Essequibo River, that docking facilities for pleasure craft at Bartica are studied and that port facilities be provided at Georgetown for the accommodation of passenger vessels. There are a limited number of calls experienced at present.

The key event is the Bartica Regatta. A flotilla of small marine craft and yachts meet once a year at Bartica, on the Essequibo River. The event has been held annually for the last 10 years. Bartica is not registered as a Port of Entry, which has hindered development however; there is support from the Bartica police.

**Photograph 1-7: Speedboats Bartica**





The following actions are required: navigational aids to be provided on the Essequibo River, river surveys to be carried out and navigation charts published, and docking facilities to be provided for pleasure craft at Bartica. Development of a Bartica Marina could be funded by the private sector.

### **Cruise Industry**

Guyana is a small tourist market at present. There are fewer than 10 Tour Operators, fewer than 10 key Resorts outside of Georgetown, and fewer than 10 tourist hotels located within Georgetown. The Tour Operators each offer small-scale specialist tours for independent travellers and for small specialist groups. In some CARICOM countries, including nearby Trinidad and Tobago, Barbados, and Jamaica and in more distant Bermuda, tourism development is more mature and the general and transport specific infrastructures are also more developed. However, Guyana has several features that are unique in the region. It has a large and relatively uninhabited interior that creates an unusual opportunity to develop and cater for high value specialist tourism activities, as well as more traditional adventure tourism to the more accessible sites.

Regular visits from cruise liners are a valuable income stream that positively influences the local economy and local community. However, even to attract cruise business does require that there is sufficient infrastructure in place to handle the orderly disembarkation and processing of passengers, and also the embarkation at the end of the port visit. It requires simple yet sufficient facilities for customs and immigration officials to undertake their tasks, and sufficient convenient and close parking areas for passengers to board and alight the local transport.

The Cruise Ship Industry in Guyana is nascent. There has been a request for the development of dedicated port facilities at Georgetown, for the accommodation of passenger vessels. Such vessels as the Sun Hellenic Minerva call at the port (800 passengers). On the last call, however, the vessel had a 2 inch (5 cm) clearance, being moored at John Fernandes wharf for 2 days. There may be a need to dredge the channel and turning basin for cruise ships, providing that it is economically justified.

Further information on maritime sector support to the Tourism industry can be found in TA V-27 on download area of the Project Website.

#### 1.2.2.6 Institutional Development: Ferries

At the beginning of 2003, the former THD was split into two organisations. The maritime administration was transferred to a newly created Maritime Administration Department (MARAD), while THD retained responsibility for ferry services. THD is in charge of all the ferry operations, including coastal ferries. THD does not have any other administrative functions.

When the current financial situation of THD is reviewed, only a few routes are profitable while others lose money. The reason for low productivity is a combination of political and socio economical factors, as follows:

- The Berbice crossing ferry service is the most profitable service. The Government must keep in operation other non-profitable routes, i.e. the North-west ferry service and the Parika – Bartica route. In the areas not connected to Georgetown by road, people have no other means of transport, especially for the transport of their goods and cargo of large dimensions.
- The cost of maintenance is high, because the vessels are old.
- Competition exists for passengers on other routes from the operators of speed boats;
- The fares and dues are relatively low.
- The operations of loading and unloading are not efficient and the vessels are not well adapted for the actual demand.

It is apparent that the THD is not very well organised, and does not have a strong financial structure. It is probably necessary for the THD to be restructured in due course if it is to continue to function:

#### 1.2.2.7 Institutional Development: MARAD

MARAD was newly constituted as a government-owned company with a Director answering to a statutory Board of Directors. The maritime safety functions include:

- Registration of vessels (over 500 grt/ 24 metres),
- Licensing of vessels (under 500 grt),
- Inspections,
- Issuing of discharge books,
- Accident investigations; and
- River navigation.

These functions extend in the coastal waters and up all the rivers as far as they are navigable. All vessels with an outboard motor exceeding 5 HP are required to be licensed, although small personal boats may be exempted. The largest vessel in the Guyana fleet is 1,400 grt.

The ports and harbours functions include pilotage, dredging, Hydrography and preparation of tide tables.

In the longer term it is intended that MARAD should be further formally divided into a Maritime Department and a Ports and Harbours Authority. Creation of a ports authority was recommended in a consultant's report prepared by APEC in 1995, which has not yet been implemented. Guyana's designated ports are those at Georgetown, Linden, New Amsterdam and Springlands. Unusually, there never appears to have been a unified port administration for Georgetown. A number of separate facilities are scattered along the east bank Demerara.

Some of the existing weaknesses of the institutional environment of MARAD are listed below:

- Partially outdated legislation;
- Lack of financial autonomy (lack of funds for re-investments, no cost based tariffs, subsidies to be paid from MARAD to THD, waiver from GoG to bauxite industry not to pay port dues, fees or taxes (although the provision of navigational aids and channels require charges, that are not covered by the waiver);
- Lack of administrative autonomy (e.g. to make regulations; MARAD has to follow the standard remuneration system and employment conditions, although specialist jobs are to be done such as pilotage, surveying and dredging);
- No clear split of responsibility or allocation of functions among Government agencies (Land and Surveys claims to be in charge of rivers, Customs claims responsibility for security at sea);
- There is no contractual relation between private terminals and GoG through MARAD for the use of the water front as common practice in other countries;
- There is no agreement on the use and maintenance of public wharves by public companies such as Guysuco and GPL;
- The performance of the private terminals is not monitored, but this function is vital for the assessment of any future demand; and
- There is no statistics / reporting system or common data base among the port community; there is no port users' council.

There is a clear case for MARAD to be given a greater degree of commercial and financial independence, with ability to re-invest surpluses in capital investment, and without any obligation to cross-subsidise other parts of the water transport administration.

### 1.2.2.8 *International Security Obligations*

Concern about international terrorism and smuggling of both people and goods resulted in the International Maritime Organisation (IMO) Convention on Port Security. From July 2004, all ports engaging in international trade have to put in place security systems that comply with IMO standards, or run the risk that cargo loaded at that port will be refused entry at ports in Europe and the USA. It is not yet clear how this is being implemented in Guyana. Not only must the Port ensure that security procedures are acceptable but also the installation of expensive screening and X-ray equipment is required, and this is difficult in a Port system consisting of many different private terminal operators.

#### **Further Information**

Further information on shipping services and maritime (port and river) infrastructure can be found in TA V-03, TA V-17, TA V-18 and TA V-23 on download area of the Project Website.

The financial status of the port sector is analysed in TA V-06: institutional relations are discussed in TA V-08 on download area of the Project Website.

### 1.2.3 *Air Transport*

#### 1.2.3.1 *Airports*

The main international airport is Cheddi Jagan International Airport (CJIA), situated at Timehri, south of Georgetown. The runway length is 2,270 m. Customs, immigration and security services are based at the airport.

A second airport for Georgetown is being developed at Ogle, much nearer to the city, and now leased to an operator for a minimum of 25 years from 2001. The airport has been zoned by the Government for future development and environmental impact assessments successfully completed.

By the time The President of Guyana laid a foundation stone in September 2003 to mark the commencement of the new developments there were 8 companies operating 34 aircraft. These transported annually some 50,000 passengers and 4 thousand tons of cargo.

Of more than 200 airstrips in Guyana, only 24 have frequent scheduled services. A further 73 have frequent non-scheduled services and are considered to be airports. Parts of the country's south, south west and south-east have large areas that are only accessible by air. The 24 airstrips with scheduled services are used for tourism, general aviation associated with gold mining, and to serve isolated communities in the interior.

### 1.2.3.2 Air Traffic

#### Traffic Volumes

A business plan prepared in 2000-2001 prepared a forecast of 2004 throughput at Cheddi Jagan International Airport of 5,600 flights, including some 1,000 GDF (military) flights. In comparison, Ogle airport now handles 7,500 flights p.a. to hinterland airports.

Passenger traffic at Cheddi Jagan International Airport (CJIA) may be summarised as shown in Table 1-4.

**Table 1-4: Passenger Numbers at Cheddi Jagan International Airport, 2000-2004**

('000)	2000	2001	2002	2003	2004
Arrivals	186.2	173.3	186.7	188.4	206.6
Departures	197.8	186.6	200.2	198.8	219.0
<b>Totals</b>	<b>384.0</b>	<b>359.9</b>	<b>386.8</b>	<b>387.2</b>	<b>425.6</b>

Total traffic rose at an average rate of 2.6 per cent per annum between 2000 and 2004. Passenger numbers at Ogle Airport were 47,674 in 2002, rising to 55,308 in 2003. The half-year total of 25,917 for January–June 2004 represented a 5.1 per cent increase over that of 24,671 for the first six months of 2003. Total cargo movement at Ogle Airport was 3,974 tonnes in 2002, rising to 4,204 tonnes in 2003. In both years 90 per cent of this traffic was outgoing and only 10 per cent incoming. Outgoing cargo traffic at Ogle thus exceeds the flow at CJIA.

#### Carriers at CJIA Airport

At present (2005) the air carriers flying from CJIA are:

BWIA, Universal Airlines, Blue Wings (Universal Chartered), Laparkan Airlines, North American Airlines, META, Caribbean Star, LIAT, Amerijet International, Suriname Airways (occasionally), Air Services Limited, Trans Guyana Airways, Roraima Airways, Gu-mair, Instant Security. Also there are various charters and 'occasionals'.

Between them these airlines serve the domestic, regional and intercontinental destinations. In 1997 the domestic scheduled services had the following destinations:

- Annai- Karanambu- Lethem- Karasabi
- Lethem
- Karasabi- Lethem- Annai
- Lethem-Sand Creek- Aishalton
- Mahdia
- Mahdia- Orinduik- Kato- Monkey Mountain
- Mahdia- Maikwak

- Kaitour
- Imbaidai- Kamarang
- Mabaruma- Matthew Ridge
- Matthew Ridge- Mabura- Bemichi
- Baramita- Matthew Ridge- Mabaruma.

**Photograph 1-8: CJIAC International Airport**



**Photograph 1-9: Ogle Airport**



### **Carriers at Ogle Airport**

The two main companies operating domestic flights are Trans Guyana Airways and Air Services Ltd. They mainly provide charter services to the interior. 1-5 shows the main aircraft operators and their number of aircraft.

**Table 1-5: Aircraft operators and their number of aircraft**

<b>Company</b>	<b>Number of aircraft</b>
Trans Guyana Airways/Kayman Sankar Airways	12
Air Services Ltd.	10
Nova Aviation Ltd.	1
Roraima Airways Ltd.	5
Guyana Sugar Corp (Guysuco)	4
Mekdeci Aviation Inc.	1
<b>Total</b>	<b>33</b>

### 1.2.3.3 Institutional Arrangements

The Government has been moving slowly to update its institutional arrangements, but has not yet achieved a clear separation between policy, regulation and operational activities.

#### **Cheddi Jagan International Airport**

The airport has two runways of 2,270 m and 1,525 m, respectively, both being 45 m in width. The main international airport for Guyana is now managed by a Chief Executive Officer (CEO) reporting to the MPW&C through a Board of Directors. Its remit is to be a self supporting business, although break-even is not expected to be achieved until the end of 2005. At present the Government is understood to provide a subvention.

Although the CJIA management keep thorough financial figures for incoming revenue and expenditure, it appears that the cash flow at present still follows the 'old ways'. That is, incoming revenue goes directly to the government Treasury<sup>8</sup> who in turn cover the operational expenditure (which in 2004 was less than operational income) and capital expenditure. In recent years there have been substantial upgrading and improvements at the airport as part of the IADB US\$ 30m funded '*Air Transport Reform Programme*'.

#### **Ogle and Hinterland Airports**

In late 2001 the Government leased out the management and operation of the Ogle aerodrome to Ogle Airport Inc (OAI). The lease is for a minimum period of 25 years with extension periods of 25 years on request of the lessee. The objective is to develop Ogle Aerodrome into a Regional Municipal Airport to full international standards (e.g. Security, Fire, Crash and Rescue (FCR), customs, immigration) on an 18 hour-a-day basis. A secondary objective is to act as a back up to CJIA in the event of an emergency, disaster, accident or some other un-serviceable situation.

<sup>8</sup> Except the security portion of the Departure Tax which is retained and used to cover operational expenditure.

With Ogle airport now in process of re-development, it is planned that intra-regional and domestic services will be developed and located there. This will then provide quick and easy links with other member states of the CARICOM Community, whose headquarters have been recently re-located with Georgetown to a purpose built site that is close to the airport. A privately funded airport expansion plan is in progress. Improved road access between Ogle and Timehri Airports has been suggested, in the form of a proposal to construct a road between East Coast Demerara and East Bank Demerara. These road proposals should be fully reviewed within the planned urban transport study for Georgetown.

Some lower cost investments in terminal facilities, etc. are planned at a few key rural air-strips (hubs).

### **The Civil Aviation Authority**

The CAA is organised on classic modern lines in that the Director General (DG) reports to a Board of Directors which in turn answers to the Minister for Public Works and Communications. The Chairman and Board of Directors, appointed by the Minister, must be a minimum of four and maximum of eight, and may serve for a term of two years with allowance for a possible further term. Representation is intended to cover representatives from the private sector as well as the legal and financial professions. However, no Board member should have a direct material interest in aviation. As the Civil Aviation Act requires an advisory dialogue between the DG and the Minister on any matter that concerns the government, there also is an informal connection between the two persons. The Authority applies regulation to airlines, aircraft operators, aerodrome operators, aviation training schools, fuel companies, freight forwarders, and the travelling and general public.

### **Air Navigation Services (ANS)**

The positioning of the Air Navigation Services as a Division of the GCAA also raises a number of difficult regulatory questions. Whichever structure is chosen it is important that the GCAA has sufficient funding in order to carry out their duties. The same requirement must also apply to the air navigation services. At present this service claims to need some US\$ 3.815 million, over 5 years, in order to bring the system up to international standards - which includes new technologies for meeting international obligations (e.g. Communication, Navigation and Surveillance/ Air Traffic Management (CNS/ATM)) systems.

### **'Independent' Air Transport Safety Authority'**

Although the CAA take responsibility for regulation and enforcement, there needs to be regular assessments of whether the regulation authority is sufficiently independent to monitor, check and enforce all aviation safety and security requirements in accordance with international standards<sup>9</sup>. This includes flight operations, airworthiness and personnel licensing.

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<sup>9</sup> An assessment was carried by the UKCAA when the Business Plan was completed, resulting in the current structure of the GCAA.



#### 1.2.3.4 Government Aviation Policy

Government policy has been to gradually move towards liberalisation in aviation. CAA appears reluctant to consider the possibility of allowing effective competition in regional flights<sup>10</sup>, although it must also be said that, in the current weak state of the market, there is little sign of potential new entrants. Many of the regional carriers are facing financial difficulties. Guyana Airways failed, and British West Indian Airlines (BWIA) and LIAT (Antigua) are currently in financial trouble.

Caricom Governments have recognised the problems facing the aviation industry in the region. There is a natural reluctance to commit regional air services to the care of an outside operator; the Governments are exploring the possibility of joint action, possibly in the form of an expanded regional airline, to ensure continuity of service and sufficient commercial strength to meet international competition.

It is recommended that the highest possible levels of government officials meet to identify ways in which each Ministry responsible for some aspect of Immigration/Emigration/Customs can improve passengers' passage through the International Airport at Timehri. The same conditions should apply when Ogle becomes a Regional Airport. A senior level Member of the Civil Service should be responsible to see that an approved implementation plan is implemented on time.

At the January 2005 Caricom meeting of the Ministerial Council for Trade and Economic Development (COTED) it was agreed to recommend to Caribbean Heads of Government a paper proposing a comprehensive approach to include tourism in international trade negotiations.

Further information on air transport support to the Tourism industry can be found in TA V-27 on download area of the Project Website.

#### **Further Information**

Further information on the aviation sector as a whole can be found in TA V-2, while information on the financial status of the air transport entities can be found in TA V-06. Institutional questions are discussed in TA V-08 on download area of the Project Website.

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<sup>10</sup> GCAA works in accordance with government policy and also recommends policy direction to Government.

## 1.2.4 Rail

### 1.2.4.1 Role of Railways

The ingredients of success for railways include large traffic volumes, preferably millions of tonnes of freight, or millions of passengers annually, or alternatively, high speed passenger services over distances of 200 to 500 km, between major urban centres, that can attract business passengers willing to pay the full cost of the service. There can also be a useful and socially valuable role for suburban services, when it can be shown that they divert traffic from the roads, thus reducing congestion.

#### **Railways in Guyana**

There were railway services in Guyana in the past; indeed the first railway in South America is reported to have been constructed in Georgetown in 1846. At independence in 1966 government railways ran from Georgetown east to Rosignol and from Vreed-en-Hoop west to Parika. These lines were closed completely in 1974, and there is no prospect that they will reopen. At least two private railways have also operated in the past. A narrow-gauge line was used by the Linden bauxite company to carry ore from Ituni to Linden. It is not certain that the prospective new owners will continue to use it. There was also a private mineral line in the far north-west from Port Kaituma to Matthews Ridge, which is no longer operating.

Railways are popularly believed to be cheaper to operate than road transport (although this is not always the case, particularly where traffic volumes are low.) It is also argued that rail transport is more environmentally friendly than road transport. This raises the questions:

- Should Guyana consider reviving its long defunct railways?
- How should this be done? Should Government lead with investment, or should it facilitate private sector provision?
- Should Government be prepared to subsidise these alternative modes, if user charges do not cover operating costs?

### 1.2.4.2 Longer Term Policy

There seems no rational basis for building new railway lines unless new and substantial sources of traffic materialise. The possibility of the use of rail for bulk goods transport should be evaluated as an integral part of the associated industrial development and should be designed, built, paid for and operated by the potential users, such as mining companies. Government involvement should therefore be limited to ensuring that environmental, safety and other planning rules are observed.

Georgetown is also certainly not large enough, however to make any commuter rail network economically viable. The old services closed down in the 1970's could not easily be revitalised, since rights of way have been used for other purposes.

### 1.3 Sector Stakeholders

The whole population of Guyana is, to a greater or lesser extent, dependent on the transport system to carry the goods they consume and for personal travel, for business purposes and leisure activities. The general population is also the ultimate provider of the funds necessary to maintain and operate the system. In designing policy improvements it is the interests of this group, rather than the sectional interests of government departments or transport operators, which should be paramount.

Beyond the general population, those with a direct interest in the transport sector include:

- Transport operators and their employees,
- Government departments and their employees,
- Contractors and other suppliers of services to transport companies and to government departments concerned with transport; and
- Commercial users of transport services.

The main state owned transport companies include:

- THD – Transport and Harbours Department (Ferry Operations),
- DHBC – Demerara Harbour Bridge Corp.; and
- CJIAC – Cheddi Jagan International Airport Corp.

The private transport operators are grouped into associations, the main ones being:

- INTRASERV Inc., a transport long distance coach company,
- GPTA: the Guyana Public Transportation Association, with 240 private members (voluntary membership); and
- The ‘Speed Boat Association’.

The main private transport companies include:

- Ogle Airport Inc. is a private company that leased Ogle airport from GoG for 25 years (with extension periods of 25 years on request of the lessee); and
- Private Port Terminals Owners and Operators, the largest of which is John Fernandes Ltd, but including, GNIC, Muneshwars, GNSC, etc.

The main ministries with transport sector responsibilities are:

- Ministry of Tourism, Industry and Commerce (Public Utilities Commission (PUC)),
- Ministry of Public Works and Communications,
- Ministry of Local Government and Regional Development,

- Ministry of Amerindian Affairs,
- Ministry of Agriculture,
- Ministry of Natural Resources; and
- Ministry of Home Affairs (Traffic Police).

There are also a number of semi-autonomous agencies working in the sector:

- ANS : Air Navigation Services (parent ministry MPW&C),
- MARAD: Maritime Administration Department (MPW&C),
- GCAA: Guyana Civil Aviation Authority (PW&C),
- WSG: Work Services Group (MPW&C),
- GRA: Guyana Revenue Authority/Licensing Authority (MoF); and
- EPA: Environmental Protection Agency.

There are also a number of municipal agencies working in the sector:

- The City Council is in charge of secondary roads and traffic management, and has an advisory role in maintenance of the public transport system; and
- Traffic Police are in charge of traffic planning and implementation in conjunction with the City Council.

#### 1.4 Problems to be addressed

The transport sector is in a transition phase. The Government is gradually moving towards reducing its direct involvement in transport operations and concentrating on policy, investment and regulatory issues. There is a general acceptance that the sector needs to become more efficient. In particular, it is clear that entities such as the DHBC and the CJIAC, and some Government departments such as MARAD and the THD are failing to maintain the transport infrastructure and equipment for which they are responsible. Long-term sustainability will require greater private sector involvement in transport operations and infrastructure, and greater efficiency will require the spur of increased competition.

#### **Further Information**

The sections that follow provide an overview of transport policy sector issues. A further and more detailed discussion can be found in Technical Appendices III: Analysis of the Relevance of Sector Policy and IV: Analysis of the Policy Options. A Draft Policy Statement is included in Technical Appendix V.

### *1.4.1 Sector Strategy and Policy Directions*

The following are some of the key issues to be addressed in the general transport strategy and policy area.

#### *1.4.1.1 Regional Integration*

Increasing regional integration will require modifications to Guyanese law to facilitate road freight and passenger transport connections with neighbouring countries. Legal / institutional changes needed, could include:

- Coordination of vehicle weights and dimensions legislation;
- Modification of insurance arrangements to facilitate cross-border movements;
- Changes to customs procedures to facilitate cross-border movements, in particular transit movements; and
- Permitting foreign trucking and bus companies to operate commercially inside Guyana, either to carry passengers or cargo to neighbouring countries, or to compete directly with domestic carriers on domestic routes. (The driving direction is different in Guyana; in Brazil drivers drive on the right hand side of the road).

Improvement of border crossing facilities at Lethem is planned. The Revised Treaty of Chaguaramas, which has been both signed and ratified by Guyana but not by all signatories, envisages the creation of a regional common market in transport services. All member states are committed to preparing to remove all the obstacles to opening up the market. In particular, Guyana will need to negotiate a transport agreement with Suriname, under CARICOM auspices, to set the conditions under which Surinamese transport companies can operate in Guyana and vice-versa.

Consideration also needs to be given to a general regional customs agreement, involving Guyana, Brazil and possibly Venezuela, that will permit and facilitate transit traffic. Guyana will continue to work to promote IIRSA Group 2 and 3 corridor investments with partners from Brazil, Venezuela and Suriname.

#### *1.4.1.2 Public Service Obligations*

Government is spending substantial sums of money on providing subsidised transport services to remote areas on the grounds that the private sector might not be prepared to do so. However, the provision of such services appears to be determined on grounds of custom rather than an objective assessment of need. The lack of an explicit public service obligation (PSO) makes it difficult to establish whether the level of subsidy is justified, and whether the service could not be more efficiently provided by the private sector.

It will be necessary to develop explicit PSO's for coastal shipping services (with the Kimbia) to Region 1 and possibly for certain Essequibo River ferry operations, to counter the accessibility constraint.

#### *1.4.1.3 Future of the THD*

It is desirable that THD be established as a fully autonomous and independent entity with clearly defined responsibilities. The question of raising fares will have to be considered, and even then subsidies may have to be paid on some of the services. THD, or any succeeding operator, should be enabled to provide for normal maintenance requirements out of operating revenues as a matter of course. The practice of transferring a large element of the MARAD surplus to THD should cease, as it is ultimately harmful to both organisations.

#### *1.4.1.4 Other Issues*

##### **Urban Transport Planning for Georgetown**

The level of congestion in Georgetown is becoming unacceptable. There is a case for a comprehensive transport and traffic management study which incorporates many important cross-cutting legal and institutional issues of a strategic nature, and takes into consideration recommendations in respect of the future location of a modern container terminal and recommendations in respect of longer term solutions for the DHB.

##### **Public Transport in Georgetown**

The informal nature of current operations has served the city well for some years, but with increased traffic congestion and increased private motoring, with demand for central area parking exceeding demand throughout the working day and with higher aspirations for good service delivery, there is justified pressure for change and a better quality of transport for regular commuters, whose views should be represented.

Best practice delivery of good quality public transport is dependent on providing a network of convenient and popular transport links based on up to date knowledge of the demand for transport in the city followed by the planning of networks to meet that demand. This does not reflect the existing arrangements in Georgetown. It is a relatively small capital city and any solutions must reflect the capacities of staff and other resources available and the ways in which change can be made.

##### **Tourism Policy**

There is a need to promote tourism and to develop the necessary transport sector support to the industry through, inter alia, the enhancement of the nascent cruise shipping and yachting industries, and the encouragement of road transport services for major tourist events, such as the cricket World Cup in 2007. TA support is envisaged.

## **Rail Policy**

There seems no rational basis for building new railway lines unless new and substantial sources of traffic materialise. The possibility of the use of rail transport should be treated as an integral part of the industrial development planning, and should be designed, built, paid for and operated by the potential users, such as mining companies. Government involvement should therefore be limited to ensuring that environmental, safety and other planning rules are observed.

### **1.4.2 Transport Investment Demand**

In general terms, transport infrastructure is more or less adequate for the demands placed on it, with certain key exceptions, which can be addressed through the committed projects plus some other pipeline investments that will need to be evaluated through formal Feasibility Study.

#### **Box B: Provisional Traffic Forecasts**

Indicative traffic forecasts to 2020 have been developed for the different transport modes in WP TA-13 'Provisional Traffic Forecasts' on download area of the Project Website. These are based on the application of future growth rates to estimates of existing flows, which for some of the modes (especially ports) are based on a deficient existing data base. Traffic growth rates have generally been related to expected economic growth (see WP TA 5 on website and Box A above) through demand elasticities. In addition to central forecasts, alternative low and high projections have also been made.

The forecasts should be regarded as indicative only, since much further specialised work would be required to prepare full commodity forecasts. They do not give detailed attention to possible developments of new traffic flows, though for instance the possible development of substantial transit flows to and from Brazil, which would use both road and port facilities, is briefly mentioned in the text of the TA 5.

A short summary of the assessment of the priority investment requirements, by mode, is provided below.

#### **Roads**

Traffic flows outside Georgetown are quite low, and there is no immediate requirement for upgrading or extending the road network, although the paved network requires the introduction of a periodic maintenance programme. The Inter-American Development Bank is financing the rehabilitation of the key roads and bridges on the core network, and the main infrastructure problem thus is to ensure that adequate future financial provision is made for maintenance, including both routine and periodic operations. This is a pressing need and the most obvious problem in the road sector.

The road between Lethem and Linden will, in time, require funding for bridge replacement and road upgrading. Further studies should be undertaken to determine the possible size, timing and funding source, for such investments. The study should include a review of (any) necessary investments at the border crossings, at Takutu/Lethem. Please refer to Annex 1, WP 26 *Road Network Development* on download area of the Project Website. Bridge replacement and construction will also need to take place elsewhere on the priority corridors.

There is a problem with the urban road capacity in Georgetown, which could most probably be handled by traffic management measures in the short to medium terms, for which a detailed study is recommended<sup>11</sup>. In the medium term, attention may need to be given to the possibility of developing a ring road system to improve traffic flow and to avoid congesting the central area. The future planning requirement in respect of the City Port operations and the DHB River crossing will be investigated.

Road transport infrastructure to support the further exploitation of bauxite, gold, diamonds, and forestry, should be provided by means of a continuation of the present model of concession contracts with the principal mining and forestry companies.

### **Rural Transport Interventions**

Two main priorities are apparent, namely, to introduce cost effective rural area accessibility improvements within Hinterland areas; and to make rural transport accessibility improvements in the Coastal Strip (Secondary and Farm to Market Roads). Pilot Studies are proposed in the first component, in order to assist to assess how best to solve the problems of poor accessibility in these areas that have been widely cited. These studies should take into consideration the needs and views of local communities. A budget allocation has also been made for the development of reliable Farm to Market roads. This is necessary not only for farmers to transport their produce to market but also for the transport of inputs and heavy machinery necessary for agricultural production. It is also important to develop such roads to serve the diversification into products that currently do not have well established road links.

### **Ports**

Port capacity appears to need some enhancement. No modern and efficient container terminal has yet been constructed in Guyana. Provisional planning measures should be taken, including reservation of a potential port site or sites, to enable such a container terminal to proceed, once demand warrants it. Eventual investment funding would probably be a PPP arrangement. A modern sugar factory, distillery, and power plant (co-generation) will be constructed soon at Skeldon, adjacent to the Corentyne River. It is expected that this development would lead to some expansion of the township of Skeldon, together with increased traffic flows through the existing wharf: (bulk and bag sugar, molasses and spares for the fields and factory).

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<sup>11</sup> The Study should investigate improved road access to airports, the timing of an improved Demerara River Crossing, establishment of a modern container terminal operation, etc., etc.



In the immediate future, a second mid-stream berth is indicated on the Berbice River for bauxite operations. This will be funded by the private sector.

### **River Transport**

There is a substantial backlog of construction, rehabilitation and maintenance work in respect of Navigational Aids, and river maintenance dredging programmes should be undertaken, if economically viable. Furthermore, a priority wreck clearance programme<sup>12</sup> needs to be implemented, in order to ensure adequate maritime safety.

It is however noted that whereas the comprehensive programme for the refurbishment, overhaul and/or replacement of existing navigational aids consisting of buoys and beacons could be funded by the public sector, dredging works could be funded by the private sector, as on the Berbice River.

Decisions need to be taken in respect of the rehabilitation of the NW Coastal Service to Mabaruma, including a restructuring of the operations. Some financial provision should be made for the maintenance of existing river transport assets.

Some of the ferry services currently operated by THD may remain commercially non-viable even under good business disciplines. However, these services will still be essential for the populations served, notably on the Essequibo islands and in the far north-west. They will therefore have to be operated as social services under public service obligations (PSO's). The matter requires further detailed study within the wider framework of re-organisation of the ferry services.

Channel depth restrictions in the Demerara River and approaches limit the size of vessel which can be used for the export of calcined bauxite. It is thought to be technically feasible to dredge the channel and to maintain the depth, though maintenance dredging would need to be continuous. There is a *prima facie* case that costs of dredging *may* be recovered in savings in shipping costs, and the question should probably be subject to formal feasibility study. The major, probably the only, beneficiaries would be bauxite mining companies at Linden.

This could be an entirely private sector venture if barge transport were to be re-introduced, although the bauxite company may press for a state contribution for river dredging and navigation aids, if continued use is made of OGV's. In any event, the Government will have to decide how large a role, if any, it wishes to play in the provision of transport investment for this venture. If the project proved feasible, the Government would have to resolve whether to treat the project as a public sector or private sector venture and what contribution, if any, it would make to the costs.

The investment needs and the method of funding for this project have been investigated within the implementation phase of Special Study No. 2. The investment needs vary according to the mode of shipping selected, e.g. barge transport to Mother-ship at Georgetown versus part loaded OGV transport direct from the docks in Linden.

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<sup>12</sup> Twelve wrecks have been recommended by MARAD for removal as Highest Priority.

Terms of Reference are prepared under SS2 which will also address the economic feasibility of (any) deep water port facilities. For a further description of the options between Linden and Georgetown, see Technical Appendix V-15: Shipping Analyses on download area of the Project Website.

### **Ferry Transport**

A series of immediate operational actions are required on the Berbice to support (a) cross Berbice ferry operations in the heavily trafficked period leading up to the opening of the fixed river crossing of the Berbice, and (b) possibly the testing of a re-introduced river service between Stanleytown and Ituni.

A series of immediate operational actions are required on the Essequibo to support cross river ferry operations; these can be focussed separately on passenger and freight services. The latter measures will include new stellings for passengers at Supenaam, adaptation of stellings for Ro-Ro systems, etc.

A series of medium term investment actions are required on the Essequibo to support cross river ferry freight and passenger operations. The latter measures will include new stellings for the new Ro-Ro and passenger vessels.

A series of immediate maintenance/ rehabilitation actions are required on the existing vessels used for ferry and coastal services. These include immediate introduction of anti-fouling painting, review of fire extinction systems, provision of lifeboats, and modifications to accommodation on the Kimbia.

A series of medium term investment actions are required on the Essequibo to support cross river ferry operations. The latter measures will include purchase of up to 3 passenger vessel (s) with a capacity of 50-60 passengers and a speed of 20-25 kph. Such passenger vessels can currently be bought second hand at a very attractive price, (for example ex. Russian market); alternatively vessels could be assembled from kit forms, in Guyana.

A series of medium term investment actions are required on the Essequibo to support cross river ferry operations. The latter measures will include purchase of up to 2 Ro-Ro vessels for service on Leguan- Parika- Wakanaam- Supenaam route and the Parika-Bartica route. Crude estimates would be some 2.4 m euros per vessel. The highest priority would be for the introduction of the Ro-Ro vessel on the Leguan- Parika route.

### **Airports**

Airport capacity seems to be adequate for the medium term future. At both of the main airports, investment programmes currently under way appear adequate to cater for demand in the medium term. At CJIA Inter-American Development Bank funds have enabled improvements, whilst at Ogle private investor funds have been utilised. Some rationalisation or prioritisation / ranking of rural aerodromes is suggested.

## **Urban Transport**

Some investment in bus terminal facilities, bus parks, etc. will be necessary. The precise details would be expected to be formulated within the proposed urban transport planning study for Georgetown.

### *1.4.2.1 Public-Private Partnership*

The Government is committed to the idea of public-private partnership. Guyana has a long historical tradition of public - private partnership (PPP) in the construction and maintenance of road infrastructure, and also of river / maritime port facilities. More recently, the concept of public - private partnership by way of “concession contracts” has gained increased attention in the state machinery. The maintenance of highways or the management of airports (for instance, at Ogle) are the areas where maintenance concession contracts or management concession contracts are now quite common legal tools. Government should take steps to further enhance their commitment to working with the private sector. The entry into force in Guyana of legislation such as a “multipurpose concession law” or “model contracts” would not guarantee the passing of PPP agreements; but at least, may facilitate it.

### *1.4.3 Sustainability*

The failure to maintain key infrastructure continues to be a major public sector problem and has created a dependence on donor finance for rehabilitation. Evidence of this cycle of failure is most apparent in the road sector, but it has also affected the ferries. Required measures include the following:

- Ensure regular and adequate funding for maintenance (routine, recurrent, periodic maintenance) of the maintainable road network,
- Weighbridges installed and operational at strategic locations operated by public/ private sector,
- Revised and appropriate legislation and road traffic regulations defining permissible GVW's and axle loading (for modern axle configurations),
- Modernise vehicle weights and dimensions legislation,
- Increase taxation on heavy vehicles,
- Undertake comprehensive review of fees, user charges and subsidies, especially in road and ferry sectors,
- Bring Minibus, Ferry and Bridge crossing fares under the control of the Public Utilities Commission; and
- Establish a River Transport Authority to oversee the rehabilitation of the main River Infrastructure and the enhancement of operations, as a discrete and important division of MARAD.

The achievement of sustainability will require a strong commitment on the part of the Government to providing the necessary funds, through taxation (in the case of roads) or through permitting adequate user charges for the revenue earning transport entities. It is clear that only profitable entities can ensure sufficient funds for the maintenance of infrastructure and equipment, and the managements of the entities will have to become more commercial in their approach. This will require ensuring that both the capital assets of the entity and its labour force are appropriate to the scale of activities. Private sector involvement in the bridge and ferry entities will almost certainly be required if the necessary business disciplines are to be introduced.

### **Box C: Road User Charges**

Major expenditures are incurred on construction and maintenance of roads. These generally have to be financed by Government since direct revenues from road users are very limited (including only a few bridge tolls). Yet many other taxes and charges are levied on road users; these include fuel taxes, vehicle registration and licence fees, vehicle inspection fees, transit fees for foreign vehicles etc.

It would be a useful and positive planning tool if a closer relationship could be established between all road user revenues, the costs of services directly related to those revenues, and the costs of constructing and maintaining the road network. This would firstly enable an overall comparison of revenues and costs to be made for the road sector. Secondly it would give an opportunity for tax rates to be used in effect as a road pricing agent.

In many countries a portion of the fuel tax is earmarked for use in a road fund dedicated to maintenance of the road network. This could usefully be considered for Guyana, since a road maintenance fund already exists, although it has never been fully activated.

It is recommended that a comprehensive study of road user charges (including bridge tolls and possible highway tolls) be carried out in order to give the fullest possible information base for making decisions on future development of road user charges as both a revenue source and a transport policy tool.

#### 1.4.4 *Institutional and Management Issues*

##### **Box D: Institutional Framework**

There is a growing acceptance worldwide that administrative, regulatory and operational functions of government in the transport sector should be more clearly differentiated, and if appropriate performed by specialist entities in the various transport modes. Specialist bodies already set up in Guyana include MARAD, GCAA, CJIAC and DHBC. These bodies already have a degree of commercial and financial autonomy, and it is recommended that these autonomy levels should be increased. It also appears logical to establish a Roads Authority charged with planning, administration and maintenance of the road network. In creating such an authority, a major issue would be that of maintenance funding, given the fact that the potential in Guyana for raising income directly from road user fees is very limited.

##### 1.4.4.1 *Road Maintenance Management and Funding*

It seems clear that the funds provided for road maintenance have historically been inadequate. Available data show that current expenditures on roads approximately doubled between 2001/02 and 2003/04. Even then, however, they reached only about G\$ 60 million (rather more than US\$ 300,000) per annum, a figure far below international norms for a primary network of over 400 km, and specifically well below the US\$ 4.9 million per annum formerly suggested as an appropriate target by road maintenance consultants (Bodely, 1995).

Expenditure on road maintenance is still financed from general taxation through the Consolidated Fund. While a road maintenance fund appears to have served as vehicle for some annual expenditure in recent years, it has not acted as the sole source of road maintenance funding, nor has it been operated (as is now the practice in many countries) independently of the Consolidated Fund.

From analysis of Guyana Energy Authority (GEA) data for 2004, it may be crudely estimated that road users currently pay around G\$ 7,000 million per annum in consumption tax on fuel. It is worth noting that G\$ 2,500 million (or approximately US\$ 12.5 million) per annum should be sufficient to fund routine and periodic maintenance, at an average cost of say US\$ 10,000 per annum, over a network of 625 km, corresponding quite closely to the existing 'declared' network plus the presently undeclared Linden–Lethem highway, leaving a similar annual amount for maintenance of additional 'undeclared' roads or urban roads, or for construction of new roads.

Guaranteed recurrent funding must be made available in a timely manner such that multi-annual programmes may be implemented. Failure to fund normal maintenance will lead to greatly increased future rehabilitation or reconstruction costs.

The MPW&C appears to be maintaining only a small portion of the primary network. There needs to be a means to ensure regular and adequate funding for maintenance (routine, recurrent, periodic maintenance) of the maintainable road network.

The Government should devise and introduce necessary institutional measures. In the first instance, the existing but scarcely operational fund should be activated. If this fails to ensure an adequate flow of funds, then earmarking of funds (for instance from fuel taxes), at present strongly opposed by Government, may have to be considered.

WSG should introduce an HDM-4 based pavement management system for periodic maintenance, together with necessary staff training. (This will require a firm Government commitment to ensure necessary funding continues to be made available).

#### **Box E: The Effects of Lack of Road Maintenance**

The importance of ensuring that the road network is adequately maintained, and the adverse effects of not doing so, can hardly be overemphasised. Adequate routine and periodic maintenance should typically cost only 2 to 3 per cent of initial capital per annum over a road's 15 to 20-year life. Lack of maintenance will progressively cause drainage and surface defects which will allow water to penetrate the pavement and damage the road structure.

The resulting need for 'deferred' maintenance is likely only to increase overall cost over time, and extended under-maintenance may mean that rehabilitation or even total reconstruction will eventually be required. Rehabilitation and reconstruction costs may typically equate to 20 times and 40 times annual maintenance costs respectively. Hence, if maintenance is neglected, total life-cycle maintenance and rehabilitation costs will inevitably be higher, and in some cases much higher, than under a good maintenance regime. In addition higher vehicle operating costs will also be incurred on a deteriorated road. On a road which has suffered total failure, they may be 50 per cent higher than on a well-maintained surface.

#### *1.4.4.2 Promotion of Competition*

The Government has not yet made a formal commitment to the separation of the roles of operation, regulation and policy making for all modes within the transport sector. This is a potential problem in the development of air transport, particularly domestic aerodromes, although it is understood that a private sector operator has offered to manage rural aerodromes under a concession arrangement. This is a potential problem also for ferry transport and for the DHB operations. Further, the protection of the market position of (and employment levels in) such sectors/entities is not identical to the promotion of the public interest.

State companies have formal monopoly positions in air transport, Demerara Bridge and in the ferry sector. Both the DHBC and the THD appear to be high cost operators and there is some evidence of user dissatisfaction with their services. The encouragement of competition

in these sectors could prove a valuable stimulus to improvements in commercial performance and quality of service. However, the market in Guyana is small and it may prove difficult to attract new entrants. In Air Transport it will be important to foster competition in air transport between CJIAC and Ogle by permitting market forces to prevail.

#### 1.4.4.3 *Public-Private Partnership*

The Government is committed to the idea of public-private partnership, but in practice more needs to be done. There is much to be gained from active partnership in the areas such as Ferries, Ports and Bridge Operations, and the Government should take steps to working with the private sector in these sub-sectors.

#### **Box F: Public Private Partnership (PPP); Example of River / Sea Port Terminals**

The partnership that could be set up in Guyana between a port authority and an operator may take on a variety of forms which are difficult to assemble into a neat and straightforward typology, due to the considerable distinction from one contract to the next. However, the existence of a number of international contracts for the private management of port terminal may pave the way to the preparation, in Guyana, of management contracts that would be suitable locally. At stake is the relationship between the concession-granting authority (i.e. a public authority acting as “Landlord Port” or port authority) and the Port Operator.

There are many examples of contractual arrangements between both partners which result in conferring the operations and financing of a port terminal to a private Port Operator. Their names can vary from Build Operate and Transfer (BOT), Build Operate Own (BOO), operations and maintenance contracts, concession contracts, leasing agreements, etc.... As a rule, the contracts aim at clarifying two groups of issues: namely, the “vertical” partnership between the Port Operator and the Port Authority, and the “horizontal” partnership between the Port Operator and the various stakeholders. The first partnership aims at delegating the overall management of port operations from the Port Authority to the Port Operator, whereas the second partnership is more technical and aims at ensuring the users of port facilities with efficient conditions of “global services” provided not only by the Port Operator but by a wide array of port actors.

#### 1.4.4.4 *Transport Sector Indicators*

Transport statistics are collected by the Bureau of Statistics, but have a relatively restricted scope, which makes the long-term monitoring of transport sector performance difficult. They record total volumes of international trade, by commodity, the number of air passengers arriving and departing, the number of vehicles registered and accident statistics. There are no estimates of total traffic activity (Veh-km or tonne-km), or of expenditure on transport services by individuals or companies, and no information on the ports and inland waterways

system. Unusually, no adequate statistics are prepared on port traffic in Georgetown or elsewhere, and much effort has had to be made to prepare even crude estimates (see WP no 13). This arises because of Guyana port sector structure, unusual in both the Caribbean and World context, there is no port authority and there are only a number of small private operators at various rather small areas along the waterfront.

The MPW&C (through the CTPU) should coordinate an effort to improve the collection and analysis of transport statistics and establish a computer database system, but the BS would require technical assistance to implement the new systems which should be computer based.

MPW&C may take responsibility for coordinating an effort to improve data collection and presentation. However, much depends on the effectiveness of BS. Donor assistance may be required in support of the service.

#### *1.4.4.5 Employment Practices and Human Resource Development*

Restructuring the transport operating entities such as the DHBC or the THD will inevitably involve reducing the numbers of people employed. Current practice appears to be to offer a relatively small amount of money as compensation and leave the employees to make their own arrangements for new employment. There is a significant amount of unemployment in Guyana and this practice, naturally, generates resistance on the part of the workforce. Modern practice elsewhere is to offer retraining and placement assistance, and it would be reasonable to extend such practices to the transport sector in Guyana.

There is also a lot of scope for modernisation and improvement, through the introduction of formal job descriptions and training programmes properly adapted to the commercial needs of the organisation, as well as to the needs of the individual employee.

#### *1.4.4.6 Human Resources and Institutional Development*

The Study's assessment of training practice in the public sector suggests that there is a lot of scope for modernisation and improvement, through the introduction of formal job descriptions and training programmes properly adapted to the commercial needs of the company, as well as to the needs of the individual employee.

There is also a clear need to strengthen the ability of the Government to deal with the changing economic and policy environment. Technical assistance will be required in the following areas:

- BS, the statistical service, to improve the quality of transport statistics;
- WSG to improve maintenance management;
- The Traffic Police (MHA), to improve traffic management, overloading control, and road safety skills;



- THD to restructure ferry operations and to provide Redundancy Re-training Packages;
- MARAD to institute a corporate plan;
- EPA, to institute an Environmental Impact Assessment and Monitoring;
- GCC to undertake road traffic management and Regulation of Urban Road Transport;
- CAA to enhance certain hub rural airstrips;
- MTTI to provide Regulation of Maritime Transport and to undertake a Tourism Support Programme, and to provide Fares support /PUC support:
- MPW&C to provide Human Resource Development – Processes, Mentoring Schemes and to undertake Actions to Secure Effective Implementation; and
- MoF/MPW&C to provide Legal and Regulatory Support.

#### ***1.4.5 Environmental and Socio-Cultural Issues***

It is considered important to provide support to further develop technical capacity to carry out, and evaluate, studies undertaken through implementation of the “Environmental Protection Act”. To elaborate a national law like the “Environmental Protection Act” (Act No.11, of 1996) or to sign International Conventions is one thing, the implementation and control of the Act is another. There are not enough educated staff members or technical support, especially in the EPA, and other institutions. Experience shows that road maintenance is a weak area. Inadequate maintenance or improper practices may lead directly to negative environmental impacts. Training in monitoring and inspection of transport projects for environmental and social-cultural impacts and for implementation of mitigation measures is important. It may be necessary to procure equipment, vehicles and an operational budget, to develop defined standards, and to create a special monitoring unit.

Any major transport sector investment (road, rail, port or channel dredging) would require a formal Environmental Impact Assessment (EIA). There are a number of relatively minor environmental problems associated with transport operations, notably vehicle emissions in central areas of Georgetown and problems associated with disposal of old vehicles, batteries and tyres. There is no data on the seriousness of the emissions problem, as there is no monitoring of air quality.

There are no major socio-cultural issues associated with transport infrastructure or services at present. However, it is recognised that the planning of any new road into forest areas would need to take into account the potential impact on ethnic and cultural minorities living in the project area.

## 1.4.6 *Regulatory and Operational Issues*

### 1.4.6.1 *Safety Promotion*

Improving road safety is a technical matter and is normally uncontroversial. There is a case for technical assistance to the police and MPW&C, to improve their capacity for accident analysis, road layouts, control of minibuses and traffic rule enforcement. Improving maritime safety includes replacement of missing navigation aids and markers, and ensuring that all remain in working order. A review whether additional navaids are required should be undertaken, and dangerous wrecks should be removed.

There are approximately 100 deaths a year on the roads of Guyana, which is high in relation to the number of vehicles. The introduction of legislation imposing limits on alcohol consumption by drivers could help reduce the deaths significantly. The institutional capacity of both the police and MPW to deal with safety issues could usefully be strengthened.

#### **Box G: Road Traffic Safety**

Lessons learned: Most industrialised countries are reducing road accidents. This is being achieved by a combination of elimination of accident ‘black spots’, design that is more sensitive to road safety issues, improved enforcement, better driver training and information campaigns. However, the measures are dependent upon good quality data and statistics upon which conclusions can be drawn – such data collection is often absent or of poor quality in developing countries. While it is obviously better to incorporate road safety considerations at design stage – the improvement of existing layouts combined with separation of pedestrian and vehicle movements and speed reduction can be a relatively cheap, rapid and highly effective intervention.

*The 3 ‘E’s – enforcement, education and environment:* These themes are intimately linked and all require attention in improvement of road safety, often involving many institutions and organizations (e.g. enforcement – police, traffic regulations & legislation; environment – engineers, highway authorities, design standards; education – safety campaigns & public awareness). Co-ordination of such institutions is necessary, but in developing countries institutional confusion (as noted above) is common as is lack of communication and coordination between responsible agencies. Thus, lack of enforcement may reduce safety even if attempts are made to reduce enforcement needs at design stage (e.g. high kerbs to channel vehicles) and layouts that depend upon high enforcement effort are unlikely to be successful as police resources are often insufficient. In the same way lack of signing or road markings cannot improve safety while better driver education could improve understanding of such signing as exists.

#### 1.4.6.2 *Vehicle Weights and Dimensions*

The current axle load limit of 8 tonnes is probably too low and should be reviewed, giving due attention to the need to coordinate legislation with that of neighbouring countries. Consideration should also be given to increasing taxes on heavy vehicles of certain axle configurations, to help recover the costs of the damage they cause to the roads.

#### **Box H: Control of Axle Loads and Gross Vehicle Weights**

The issue of axle load control is one of great importance for the road network, but one that causes many difficulties in practice. The central problem is that increased axle loads cause far more than proportional increases in damage to the roads – for instance the effect of doubling the load on a given axle will typically be to increase road damage by a factor of around 20. Besides damage to the roads, overloading of goods vehicles also causes damage to the vehicles, increases traffic congestion, and has an adverse effect on road safety. For Guyana as for other countries it is necessary to consider the key issues of appropriate legislation and effective enforcement.

Legislation must take account of goods traffic patterns, characteristics of the goods vehicle fleet, design and condition of existing roads, agreements with other countries, and the feasibility of effective enforcement. In Guyana current legislation permits a maximum axle load of 8 tonnes and a gross vehicle weight of 33 tonnes. These limits are well below those of neighbouring countries, and below those specified in agreements which Guyana is soon expected to ratify. However, Guyanese roads are hardly designed to carry the heavier loads which may be permitted by those agreements.

Effective enforcement can in principle be achieved by supplying fixed and mobile weighbridges, training truck operators in the need to adhere to legal limits, and ensuring vigilance by the police. In practice operators will often seek to overload for short-term commercial reasons, and may connive with the enforcement authorities to overlook such overloading. To compound the problem, the heaviest overloading may occur in roads in good condition, where the potential damage effect may be greatest.

It is recommended that a ‘best options’ study should be carried out to determine firstly the optimal legislative norms for the future, and secondly a practical programme for ensuring adequate enforcement. At the outset it may be noted that road user charges in the form of vehicle licence fees in no way reflect costs of damage done by heavy vehicles to the roads, and that penalties for overloading must be greatly increased and more regularly imposed if they are to act as an effective deterrent.

### 1.4.6.3 *International Transport and Customs Agreements*

The Revised Treaty of Chaguaramas, which has been both signed and ratified by Guyana but not by all signatories, envisages the creation of a regional common market in transport services. All member states are committed to preparing to remove all the obstacles to opening up the market. In particular, Guyana will need to negotiate a transport agreement with Suriname, under CARICOM auspices, to set the conditions under which Surinamese transport companies can operate in Guyana and vice-versa.

Consideration also needs to be given to a general regional customs agreement, involving Guyana, Brazil and possibly Venezuela, that will permit and facilitate transit traffic.

#### **Fares Regulation**

It is proposed that tariff setting for minibus and ferry fares be the responsibility of the Public Utilities Commission, which already holds generally similar powers for other utility providers. Similarly Demerara Harbour Bridge tolls would be brought under the responsibility of the Public Utilities Commission.

The objective would be to protect the interests of consumers-passengers so that tariffs remain sufficient for operators to remain viable [to cover operating costs, capital costs and a reasonable profit]; yet remain affordable and socially acceptable.

#### **Minibus Fares Regulation**

Minibus Tariff Setting – at present there was no clear mechanism to manage the tariff change process. The Ministry of Tourism, Trade and industry considered petitions to make changes but had no legal powers to amend or reject proposals. It was recognised that the current arrangements were unsatisfactory and that a standard and verifiable basis was needed to manage change.

Market and fares remain generally low when compared with other commonly consumed everyday essentials. Services are centred on Stabroek Market so intra-suburban journeys often require the use of two routes and the payment of two sets of fares plus additional waiting time at the interchange.

It is proposed that tariff setting be the responsibility of the Public Utilities Commission, which already holds generally similar powers for other utility providers. The object would be to protect the interests of consumers-passengers so that tariffs remain sufficient for operators to remain viable [to cover operating costs, capital costs and a reasonable profit]; yet remain affordable and socially acceptable.

The Public Utilities Commission is concerned with “public utilities” in Guyana which is defined under Section 4 of the Public Utilities Act as any person who or which owns facilities used to provide the services of electricity and communication. Section 4(c) of the said Act

provides that by Ministerial Order, other services could include: “(i) carriage of passengers, in motor buses or hire cars. Therefore there would be no need for legislative amendment.

### **Demerara Harbour Bridge Toll Regulation**

A key factor behind the marginal financial results of the DHBC has been the continued refusal to entertain requests for a toll increase, despite ever rising costs. In an evaluation of the DHB Rehabilitation Project, performed for the EC Delegation by Setec in 2000/01, the Consultants made a formal recommendation that the tolls for vehicles should be doubled, and those of ocean-going vessels increased substantially. This tariff revision was deemed necessary to ensure full coverage of maintenance and operating costs. It would not, however, be sufficient to cover full eventual bridge replacement costs. If continuing constraints on toll levels cause future deferment of desirable maintenance (as seems likely), then this will eventually cause accelerated deterioration of the structure.

Tolls are supposed by law to be determined by the Board of Directors, but must in practice be agreed by the Cabinet. Since significant cyclical maintenance expenses are expected to be required in 2006 and at three-year intervals thereafter, there is some concern that present toll rates, which have not been revised for several years, are no longer sufficient to provide for the required levels of maintenance. It would appear that Section 4(c) of the Public Utilities Act does not include bridge crossings. However, this can be cured by way of legislative amendment. Thereby, the Public Utilities Commission would have regulatory control over the bridge crossings, including the fixing of tolls, dues and fees.

### **Ferry Fares Regulation**

The reason for low productivity is a combination of political and socio economical factors. The government must keep in operation other non profitable routes, i.e. North-west ferry service and Parika – Bartica, in the areas not connected to Georgetown by road. People have no other means of transport, especially for their goods and cargo of large dimensions. The fares and dues are relatively low. It is desirable that THD be established as a fully autonomous and independent entity with clearly defined responsibilities. The question of raising fares will have to be considered, and even then subsidies may have to be paid on some of the services. THD, or any succeeding operator, should be enabled to provide for normal maintenance requirements out of operating revenues as a matter of course.

The Public Utilities Commission is concerned with “public utilities” in Guyana defined under Section 4 of the Public Utilities Act as any person who or which owns facilities used to provide the services of electricity and communication. It would appear that Section 4(c) of the Public Utilities Act does not include river ferry crossing of passengers and goods as a public utility. However, this can be cured by way of legislative amendment. Thereby, the Public Utilities Commission would have regulatory control over the Ferries body, including the fixing of tolls, dues and fees.

## 1.5 Other Interventions

Past support to the transport sector is summarised in Table 1-6 below.

**Table 1-6: Donor Support to the Transport Sub-sector**

Funding Agency	Support to Productive Sectors
EC (Lomé I–IV) EDF	Transport infrastructure: developing trans-coastal communications in the form of rehabilitating roads, ferries & bridges (NIP and RIP) EIRP (US\$ 25.9 million) included the rehabilitation of the DHB, the establishment of the ferry service between Suriname and Guyana and the upgrading of the road link from the Ferry to Corriverton
IDA/WB	IRP (US\$ 26 million) included the rehabilitation of the Essequibo Coast road
IADB	Since 1961 the IADB has extended over 40 loans to Guyana, totalling c. US\$ 800 million, in support of social needs but emphasizing the rehabilitation of infrastructure and production capacity (including SIMAP, which includes some rural road works) and including the Air Transport Sector.

Source: Consultants Estimates

Current Donor support to the *roads* sub-sector is summarised in Table 1-7 below.

**Table 1-7: Current Donor Support to the Transport Sub-sector**

Funding Agency	Support to Productive Sectors	Value/€millions
EC (9 <sup>th</sup> EDF)	Transport Sector Strategy Study	1.0
IADB	Rural access roads	12.2
	Rehabilitation of main roads	41.0 (+ 4.6 GOG)
	Rehabilitation of Mahaica – Rosignol road <sup>13</sup>	33.0 (+ 7.0 GOG)
	UDP <sup>14</sup>	20.0 (+ 5.0 GOG)
	Rehabilitation of Bridges <sup>15</sup>	48.3
IADB	CJIA Airport	
CDB	Linden Highway	11.4

Source: Consultants Estimates

<sup>13</sup> Project includes institutional strengthening of MPW&C, an axle-load control programme, rehabilitation of the Mahaica-Rosignol road and Design Studies for the Southern Approaches to Georgetown.

<sup>14</sup> Project includes Technical Assistance and institutional strengthening of urban municipalities and central government agencies and investment in urban infrastructure and services (including roads).

<sup>15</sup> Project includes bridge construction and rehabilitation on the Mahaica-Rosignol road, feasibility studies for the Berbice River crossing and approach roads, technical assistance to the WSG in the introduction of an RMMS and the establishment of a Road Safety Unit within WSG.

### **Committed Projects**

The main high value committed investments include the following:

- The improved (floating bridge) crossing of the Berbice River under a PPP or concessionary arrangement (government's investments include the approach road construction and various studies and resettlement issues);
- The construction of a new Supenaam ferry Stelling;
- The rehabilitation of the Bartica and New Amsterdam Stellings;
- The improvement of the road between New Amsterdam and Moleson creek; and
- The improvement of the road to Blackbush Polder.

#### **1.5.1 Other Donors**

It is understood that the possibility of support to the ferry sector (vessels/infrastructure) is currently under discussion with the People's Republic of China; however no firm details have been provided as yet.

#### **1.5.2 Commercial Interventions**

The Government has been approached by international contractors who, it is understood, have offered to fund some road and bridge construction projects. No details are available at present.

### **1.6 Documentation Available**

Although there are many specific studies, there was surprisingly little documentation available specifically relevant to the current key investment projects under consideration in the transport sector investment programme, such as the periodic maintenance programme in the road sector.

### **National Transport Studies**

Several national transport studies have been carried out, namely:

- The Guyana Transport Sector Study, IDB, R. D. Agosta, 2003;
- Development of a Strategic National Transport Policy, Needs Assessment, 1999;
- National Development Strategy 2001 - 2010, A Policy Framework, 2000; and
- Assessment of Priority Projects for Transportation Infrastructure 2000 – 2010, IDB, Mr. Allsopp, 2000.

## Roads

Several major road studies have been carried out including, for example:

- Study for the Upgrading and Completion of the Guyana-Brazil Road, EDF, ADK, Gibb, 2000 [IIRSA corridor IIRSA Group 2 Brazil- Guyana route (the road between Brazil, Linden and Lethem)]; and
- The Georgetown Southern Approach Roads Study<sup>16</sup>.

It is understood that the sum of US\$ 800,000 has been established for a Feasibility Study for the IIRSA Group 3 Venezuela - Guyana route (the road between Venezuela and Guyana, Bartica).

Several major bridge studies have been carried out including, for example:

- Evaluation of the DHB Rehabilitation Project, performed for the EC Delegation by Setec in 2000/01; and
- Pre-Feasibility Study for the rehabilitation of the Demerara Harbour Bridge, Kampsax 1992.

The Public Transport Study Report (N.D. Lea, September 2003) is regarded as a comprehensive reference document for public transport planning in Georgetown.

## Maritime

Studies to develop a port policy and development strategy included:

- Management Study and Masterplan, Gavan McDonnell & Co, UNDP/IBRD, 1976;
- Creation of a National Ports Authority, Phase I, Draft Report APEC, 1995;
- Examination of Major Alternatives for the Establishment of a Deep-Water Port in Guyana, IDB, A. Ashar & P. Woodbury, 1998;
- Project Identification: the Establishment of a Deep Water Port, Extract from presentation by Mr. R. Lowe, Coordinator WSG, MPW&C, 2004; and
- Pre-Feasibility Study of the Import/Export Transportation Problem, Louis Berger, USA, 1983.

There have been very few studies of river development although the 1983 Louis Berger Pre-Feasibility Study of the Import/Export Transportation Problem is regarded as a comprehensive reference document.

Studies to develop Ferry service improvements included:

- EDF funded Ferry service improvements Study, Rogan and Associates, 1989 including preliminary design of the new Stelling at Supenaam.

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<sup>16</sup> WSG has informed the TSS that serious consideration is being given by the IDB towards funding an Alternative Southern Entrance to Georgetown and that Feasibility Studies are presently being conducted (due for submission by December 10, 2005).



**Air Transport**

Key Studies to develop an airport policy and development strategy included:

- 'The Corporatisation & Institutional Strengthening of Cheddi Jagan International Airport', Business Plan 2002-2006, Leading Edge Aviation Planning Professionals, October 2001,
- 'Upgrade of the Apron at Cheddi Jagan International Airport, Sir Frederick Snow and Partners Ltd., September 2004; and
- Airport Planning at the Ogle Airport, Norconsult.

## 2 Intervention

### 2.1 Overall Objectives

The transport system is a central element of the economic and social life of the country. The current system is failing the users and those who, as taxpayers, pay for the provision of infrastructure. It is therefore important to develop a transport policy that remedies these deficiencies, while meeting overall national development objectives.

The policy outlined below has therefore been designed to meet the overall national objectives of:

- Sustainable economic growth,
- Poverty reduction,
- Good governance; and
- Equity.

The achievement of sustainable economic growth and poverty reduction firstly requires measures to improve the efficiency of the transport system, which is best achieved by reducing the direct involvement of the government in transport operations and encouraging private sector provision where possible. A second requirement is to ensure that adequate provision is made for the maintenance of the transport system, through user charges of various forms. Efficiency and equity between users will also be promoted if global subsidies to transport operators are replaced by clear and targeted public service obligations to provide services to those who need them, but cannot afford to pay the market price.

### 2.2 Project Purpose

The policy proposals are designed to provide Guyana with a modern, efficient and flexible transport system that will help the country to compete effectively in the global market place.

Accordingly, the transport strategy proposed here incorporates measures to:

- Promote competition,
- Promote transparency,
- Promote efficiency,
- Promote sustainability,
- Promote road safety,
- Protect the environment,
- Promote regional integration; and
- Construct missing network connections and upgrade outdated services.

Key elements of the strategy are:

### **2.2.1 Promotion of Competition**

- Establish modernised licensing systems for ferry transport services, and for associated infrastructure and maintenance; and
- Foster competition in air transport between CJIAC and Ogle by permitting market forces to prevail.

### **2.2.2 Transparency Measures**

- Audit and publish for the public domain annual financial data for all public transport bodies (including MARAD, THD, GCAA, CJIAC, DHBC – also Roads Authority if established), covering all major income and expenditure items; and
- Compile and publish key operational data for all transport modes, including roads, ferries, shipping, port operations and air transport.

### **2.2.3 Efficiency Measures**

- Set deadline for financial autonomy of CJIAC,
- Set deadline for implementation of Civil Aviation Act regulations,
- Define Aerodrome Public Service Obligations,
- Establish a Ports Council for Georgetown (and strengthen MARAD corporate planning, through registration under the Companies Act),
- Establish THD as more autonomous and independent entity with clearly defined responsibilities,
- Establish explicit Coastal shipping Service (Kimbria) and Ferry Public Service Obligations;
- Encourage provision of large bus services which can reduce fares on busy routes,
- Rationalise urban bus routes /terminals in Georgetown; and
- Improve enforcement of traffic regulations (leading to better road safety standards and traffic management). Introduce better signing for road safety and clearer parameters for enforcement.

#### **2.2.4 Sustainability Measures**

- Ensure regular and adequate funding for maintenance (routine, recurrent, periodic maintenance) of the maintainable road network,
- Install weighbridges and operationalise them at strategic locations operated by public/private sector,
- Revise appropriate legislation and road traffic regulations to define permissible GVW's and axle loading (for modern axle configurations),
- Modernise vehicle weights and dimensions legislation,
- Increase taxation on heavy vehicles,
- Undertake comprehensive review of fees, user charges and subsidies, especially in road and ferry sectors,
- Bring Minibus, Ferry and Bridge crossing fares under control of the Public Utilities Commission; and
- Establish River Transport Authority: Rehabilitate the main River Infrastructure and enhance operations.

#### **2.2.5 Safety Promotion**

- Introduce institutional improvements in areas of Air Transport Safety and Air Navigation Services,
- Ensure use of seat belts and limits on driver use of alcohol and drugs,
- Increase effectiveness of regular vehicle inspections,
- Increase technical capacity of police and MPW&C (including focussed support to the investigation of maritime accidents and incidents); and
- Replace missing navigation aids and markers, and ensure all are in working order. Review whether additional navaids are required. Remove dangerous wrecks.

#### **2.2.6 Environmental Protection**

- Monitor air quality in Georgetown,
- Set legal limits on vehicle emissions,
- Establish and control of environmental standards in ports,
- Reduce congestion in urban areas and improve traffic flows on roads of all categories. Regulate (reduce and control) speed limits in rural settlements,
- Organise the disposal of car wrecks and waste oil. Introduce respective legal requirements; and
- Conduct further research into alternative fuels.

### 2.2.7 *Regional Integration*

- Secure and implement international transport agreements; and
- Foster IIRSA links to Brazil, Suriname and Venezuela.

### 2.2.8 *Infrastructure Rehabilitation and Construction*

- Improve road access to airports. In particular consider alternatives for ensuring regular un-delayed access to CJIA and Ogle,
- Rehabilitate remaining parts of the main road network,
- Strengthen Road Maintenance,
- Improve crossings of Berbice and Demerara Rivers<sup>17</sup>,
- Rehabilitate parts of the Georgetown road network,
- Strengthen the ‘Concessionaire model’ for mining and forestry roads,
- Move towards establishment of a modern container terminal operation;
- Construct a Second Mid Stream Berth on Berbice River for Bauxite Operations,
- Rehabilitate Navigation Aids and implement economically viable river maintenance dredging programmes,
- Rehabilitate NW Coastal Service and Essequibo River Ferry Infrastructure; and
- Introduce new River Transport and Ferry Vessels

### **Promotion of Rural Access**

- Assess functionality of regional aerodromes and determine which should be prioritised for investment, which maintained for social development, and which closed down. Determine how best funding arrangements can be made for each of these categories. Also determine whether regional aerodromes should be maintained through CAA or through CJAC.
- Introduce Rural Area Accessibility Improvements in Hinterland Areas; and
- Introduce phased Rural Transport accessibility improvements in the coastal strip and possibly elsewhere, (Secondary and Farm-to-Market roads).

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<sup>17</sup> Feasibility Studies for a new Demerara Harbor Bridge are expected to commence in the first quarter of 2006. WSG expects that the construction will be executed under a PPP or concessionary arrangement, similar to that of the Berbice River Bridge project. A fixed link would resolve issues such as the limited alternative river crossing possibilities when the existing DHB is closed to pedestrian and vehicular traffic and passengers concerns over the safety of existing speedboat services.

**Promotion of Tourism (Transport Sector Support)**

- Enhance support to nascent cruise shipping and yachting industries through a focused TA; and
- Encourage road transport service development for events such as the 2007 Cricket World Cup.

**2.3 Project Results**

The proposed Strategy, if implemented, should result in:

- Increased transparency in decisions on rate and tariff setting,
- Greater efficiency in transport service provision,
- Sustainable operations, since higher efficiency and profitability will mean that transport entities can be self-financing,
- Reduced donor dependence in the longer term, as there may be less need for longer-term rehabilitation works; and
- Modern network of road and ferry connections on the main routes.

Table 2-1 below sets out the policy matrix, which summarises the relevance, feasibility and sustainability of each component of the Strategy.

**Further Information**

Technical Appendix IV provides an extended discussion of the policy options and the basis for recommending the policy set out here.

**2.4 Project Activities**

The principal elements of the proposed policy are changes in policy, institutional strengthening and capital investment/ maintenance programmes. Donor support activities will be concentrated on providing consultancy services and technical assistance, and funding of some necessary rehabilitation of existing infrastructure, primarily in the road system, but also construction of key infrastructure gaps and new vessels. Chapter 3 gives details of the activities needed to implement the policy programme.

**Table 2-1: Transport Policy Matrix**

No .	Measure	Policy	Relevance	Feasibility	Sustainability
<b>1</b>	<b>Measures to Promote Competition</b>				
	<b>Ferry Transport Sector Regulation</b>				
		Establish modernised licensing systems for ferry transport services, and for infrastructure and maintenance.	Good governance measure. Under licensing rules will promote effective competition and efficient services at affordable cost.	Proposal consistent with national policy.	Requires on-going commitment by Government
	<b>Air Transport Sub-sector</b>				
		Foster competition between CJIAC and Ogle by permitting market forces to prevail	More competition will improve service quality, extend the range of services and reduce costs and prices.	Proposals consistent with national policy.	Requires on-going commitment by Government
<b>2</b>	<b>Measures to Promote Transparency</b>				
	<b>All Sectors</b>				
		Audit and publish for public domain annual financial data for all public transport bodies (including MARAD, THD, GCAA, CJIAC, DHBC – also Roads Authority if established), covering all major income and expenditure items.	Essential to demonstrate good use of government resources to the public domain.	Base data are already available, but auditing and presentation procedures must now be formalised.	Requires continued commitment by Government
		Compile and publish key operational data for all transport modes, including roads, ferries, shipping, port operations and air transport.	Essential for modal and inter-modal planning purposes	Requires regular and systematic collection of data by Government	Requires continued commitment by Government
<b>3</b>	<b>Measures to Promote Efficiency</b>				
	<b>Airports</b>				
		Set deadline for financial autonomy of CJIAC	Will help reduce costs and improve quality of service.	Administrative measures: consistent with national policy	Requires on-going commitment by Government
		Set deadline for implementation of Civil Aviation Act regulations	Good governance measure to avoid conflicts of interest	Administrative measures: consistent with national policy	Requires on-going commitment by Government
		Define Aerodrome Public Service Obligations	Subsidies should be explicit and need to be reduced or kept to a minimum possible within the policy requirement	Detailed Economic and Financial Study required	Will require a decision on PSO payments for minor aerodromes
	<b>Ports</b>				
		Establishment of a Port Council for Georgetown (and strengthen MARAD corporate planning, through registration under the Companies Act)	Need for better co-ordination of port operations and development planning. Need for better liaison between MARAD and private port operators.	Should be possible on voluntary basis; otherwise administrative measure can be implemented by Government.	Requires commitment to co-operate for common good by both public and private sectors.
	<b>Ferries</b>				
		THD established as more autonomous and independent entity with clearly defined responsibilities.	THD already has financial problems, which will be exacerbated if core business of Berbice ferries is lost after proposed bridge construction	Restructuring may be expensive and ineffective, in which case contracting out of services should be considered	Private operators will need subsidy for ferry PSO. Retraining and placement assistance will be required for redundant THD workers
		Establish explicit Coastal shipping Service (Kimbria) and Ferry Public Service Obligations	Subsidies should be limited to socially necessary services	Consistent with national policy	Will require GoG commitment to pay subsidies
	<b>Public Transport</b>				
		Encourage provision of large bus services and can reduce fares on busy routes	Will promote service improvements	Administrative measures: consistent with national policy	Will require government agreement
		Rationalize urban bus routes /terminals in Georgetown	Will promote service improvements and reduce traffic congestion	Technical Plan to form part of the planned Georgetown Transport Study	Will require continuing evaluation and review
	<b>Traffic Management</b>				
		Improved enforcement of traffic regulations (leading to better road safety standards and traffic management) Better signing for road safety and clearer parameters for enforcement	Necessary to reduce accidents, congestion and delays, especially as traffic increases. Will promote road safety and minimize accident risks	Problem is one of enforcement. Controlling authority is needed: technical capacity of Police	Continued commitment required by Government

No .	Measure	Policy	Relevance	Feasibility	Sustainability
<b>4</b>	<b>Measures to Promote Sustainability of Infrastructure</b>				
	<b>Funding Road Maintenance</b>				
		Ensure regular and adequate funding for maintenance (routine, recurrent, periodic maintenance) of the maintainable road network	Guaranteed recurrent funding must be made available in a timely manner such that multi-annual programmes may be implemented. Failure to fund normal maintenance will lead to greatly increased future rehabilitation or reconstruction costs.	Devise and introduce necessary institutional measures, including consideration of special fuel levy and autonomous road fund. Introduce HDM-4 based pavement management system together with necessary staff training and extension of the RMMS	Requires firm Government commitment to ensure necessary funding continues to be made available
	<b>Control of Heavy Vehicles</b>				
		Increase taxation on heavy vehicles	Taxes do not reflect costs of road damage and encourage use of heavy vehicles. Enforcement has been poor, and requires urgent improvement	Legal measure that should attract general support	Charges should be set in real (or US\$) terms to avoid erosion by domestic inflation. Heavy fines should be designated, and be seen to be imposed, in order to ensure widespread compliance by road users'
		Weighbridges installed and operational at strategic locations operated by public/ private sector	Proposal consistent with Donor and GoG objectives	Problem is one of enforcement.	Requires GoG commitment and funding
		Revised and appropriate legislation and road traffic regulations defining permissible GVW's and axle loading (for modern axle configurations)	Proposal consistent with Donor and GoG objectives	Legal measure that should attract general support	Requires continued commitment by Government
		Modernize vehicle weights & dimensions legislation	Axle load limits inefficiently low; VWD should be coordinated with neighbouring countries	Legal measure that should attract general support	Measure only advisable if road maintenance is improved
	<b>Review of User Fees, Charges and Subsidies</b>				
		Undertake comprehensive review of fees, user charges and subsidies, especially in road and ferry sectors. Fees and user charges have not kept pace with inflation and in many cases do not cover operational, maintenance or replacement costs of the infrastructure. Government commitments to raise fees to adequate levels have not been implemented.	Many charges must be increased to ensure much greater contribution to infrastructure replacement and maintenance costs. Reductions in blanket subsidies will give capacity to maximise targeting of subsidies towards those who genuinely need them. 'User pays' principle is consistent with PSRP policy.	Detailed Economic and Financial Study required	Will require GoG commitment to raise user fees and pay subsidies
	<b>Establish River Transport Authority</b>				
		Rehabilitation of the main River Infrastructure	Rivers have been neglected; user involvement will ensure better planning and maintenance	Requires acceptance by MPW&C and Institutional and Legal measures	Sustainability will depend mainly upon fee income from river transport users
<b>5</b>	<b>Measures to Promote Transport Safety</b>				
	<b>Air Transport Sector</b>				
		Introduce institutional improvements in areas of Air Transport Safety and Air Navigation Services	Proposal consistent with CARICOM legislation and objectives	Proposal consistent with CAA objectives	Government to review regularly, and to ensure continuing consistency with Caricom, FAA and other international norms.
	<b>Road Transport Sector</b>				
	<b>Road Safety Improvements</b>				
		Ensure use of seat belts and limits on driver use of alcohol and drugs	These are measures known to be effective at reducing road casualties	Legal measure; enforcement will require training, equipment and funding	Requires GoG commitment and funding
		Increase effectiveness of regular vehicle inspections	Current inspection system requires modernisation and improved transparency	Requires training and funding	Companies licensed for inspections will have to be monitored
		Increase technical capacity of police and MPW&C	Improved capabilities should help improve enforcement, safety education and road layout	MPW&C and Police staff are able to benefit from training	Requires GoG commitment and funding
	<b>Shipping and Ferries</b>				
		Replace missing navigation aids and markers, and ensure all are in working order. Review whether additional nav aids are required.	Essential to ensure safety of navigation in maritime approaches and all navigable rivers.	It is necessary to ensure that funds are available to bring safety on all waterways up to standard.	Government must ensure that adequate funding remains available to maintain the required standards in future
<b>6</b>	<b>Measures to Protect the Environment</b>				
	<b>Environmental Monitoring and Protection</b>				
		Monitoring air quality in Georgetown	Monitoring is needed to establish effectiveness of control measures and need (if any) for more stringent limits	Technically feasible	Requires GoG commitment and funding
		Legal limits on vehicle emissions	Will improve air quality in central Georgetown	Legal measure; enforcement will require training, equipment and funding	Requires GoG commitment and funding
		Shipping: Establishment and control of environmental standards in ports	Will reduce environmental problems from handling and disposal of oils, fuels, sludge and waste	Technical capacity building and training is needed	Requires GoG commitment and funding
		Legal requirement for Environmental Impact Assessment	Need for a consistent national framework for environmental assessments	Implementation of EIA requires training and funding.	Requires GoG commitment and funding
	<b>Urban Transport and Traffic Management Improvement</b>				
		Reduced congestion in urban areas and better traffic flows on roads of all categories. Regulation (reduce and control) of speed limits in rural settlements	Will reduce road casualties and improve air quality in rural settlements as well as giving time cost savings.	Technically feasible; will require training, equipment and funding. Requires technical capabilities of police or /and local authorities	Requires GoG commitment and funding
		Organization of the disposal of car wrecks and waste oil / Introduce respective legal requirements	Will reduce damage of soils, risks for subsoil waters , health and scenic landscape	Technical capacity building and training is needed	Need of initial funding; Introducing of recycling at least partly will create economic self sustaining activities



No .	Measure	Policy	Relevance	Feasibility	Sustainability
<b>7</b>	<b>Measures to Promote Regional Integration</b>				
		Securing and implementing international transport agreements	CARICOM commitment; needed to promote regional trade	Major negotiation effort required, involving CARICOM, EU, Brazil and (possibly) Mercosur	Sustainable, once negotiated and ratified
		Foster development of links on International (IIRSA) Corridors with Brazil, Venezuela and Suriname	Needed to promote regional trade	Major negotiation effort required, involving Suriname, Venezuela and Brazil	Requires GoG commitment and regular maintenance funding
<b>8</b>	<b>Measures to Promote Infrastructure Development</b>				
	<b>Air Transport sub-sector</b>				
		Improve road access to airports. In particular consider alternatives for ensuring regular undelayed access to CJIA and Ogle	Necessary to ensure essential inter-modal efficiency	Should be technically feasible	Any investment will require subsequent associated maintenance.
	<b>Roads and Bridges</b>				
		Rehabilitation of remaining parts of the main road network	Proposal consistent with national policy.	Technically feasible. Economic feasibility has to be assessed case by case	Sustainable only if maintenance is improved
		Road maintenance strengthening	Proposal consistent with national policy. Will increase road safety / reduce accident risks	Technically feasible	Requires GoG commitment and funding
		Improve crossings of Berbice and Demerara Rivers	Proposal consistent with national policy and IIRSA objectives.	Technically feasible. Economic feasibility has to be assessed case by case	Requires GoG commitment and funding possibly through PPP arrangements
		Rehabilitation of parts of the Georgetown road network	Would reduce urban congestion		Requires GoG commitment and funding
	<b>Ports</b>				
		Move towards establishment of a modern container terminal operation	Will help reduce handling and shipping costs and will improve service. Will lead to decreased congestion on the urban road network	Technically feasible. Economic and financial feasibility should be reviewed.	Requires GoG commitment and funding possibly through PPP arrangements
		Construct a Second Mid Stream Berth on Berbice River for Bauxite Operations	Will help reduce handling and shipping costs and will improve service.	Technically feasible. Economic and financial feasibility should be reviewed.	Requires GoG commitment and funding possibly through PPP arrangements
	<b>River Transport</b>				
		Rehabilitation of Navigation Aids and implementation of economically viable river maintenance dredging programmes	Some Rivers have important irrigation and drainage functions, as well as a freight transport role.	Technically feasible. Economic and financial feasibility should be reviewed.	sustainable maintenance dredging and river safety may depend upon the formation of a River Transport Foundation
	<b>Ferries</b>				
		Rehabilitation of NW Coastal Service and Essequibo River Ferry Infrastructure/Vessels	Would reduce Poverty Gap in Regions 1 and 2 by improving transport access. Consistent with PSRP objectives.	Technically feasible. Economic and financial feasibility should be reviewed.	Full account to be taken of maintenance of vessels and stellings in determining long-term subsidy requirements
<b>9</b>	<b>Measure to Promote Rural Access</b>				
	<b>Airports</b>				
		Assess functionality of regional aerodromes and determine which should be prioritised for investment, which maintained for social development, and which closed down. Determine how best funding arrangements can be made for each of these categories. Also determine whether regional aerodromes should be maintained through CAA or through CJIAC	Can help rationalise costs and minimise overall expenditure on provision of necessary social infrastructure	Government decisions will be required	Need for essential maintenance in future. Responsibilities must be clearly defined between public sector (CAA) and private sector
	<b>Roads and Bridges</b>				
		Introduce Rural Area Accessibility Improvements in Hinterland Areas	Would reduce Poverty Gap in Regions 1, 7, 8 and 9 by improving transport access. Consistent with PSRP objectives.	Technically feasible. Social Economic Impact to be reviewed.	Requires GoG commitment and funding
		Introduce Rural Transport Accessibility Improvements in the Coastal Strip (Secondary and Farm to Market Roads)	Would reduce Poverty Levels in Regions 2, 3, 4, 5 and 6 by improving transport access. Consistent with PSRP objectives.	Technically feasible. Social Economic Impact to be reviewed.	Requires GoG commitment and funding

### **3 Assumptions**

#### **3.1 Assumptions at Different Levels**

##### **3.1.1 *Government***

It is an important assumption that the Government of Guyana will accept the general direction of the strategy and policy proposals and will take the question of implementation seriously. Initial indications are that most of the proposals are broadly in line with government strategy and should be acceptable.

##### **3.1.2 *Government Implementation Capacity***

Implementation will involve considerable amounts of technical preparation in areas where Guyana, particularly in the government sector, has no prior experience. It has been assumed that the donor community will be prepared to assist with funding the necessary technical assistance and consulting services.

##### **3.1.3 *Private Sector Involvement***

The privatisation proposals assume, naturally, that private investors would be willing to invest in transport entities such as ferries and that they would have the capacity to do so successfully. The initial indications are that, given a genuine commitment by the Government to enhance private sector participation, there could be some private sector interest within Guyana, particularly in passenger services.

#### **3.2 Risks and Flexibility**

Although the programme has been drawn up as a coherent whole, which attempts to bring a consistent direction to all aspects of transport sector strategy, the successful implementation of any of the components would, by itself, be beneficial.

## 4 Implementation

On the basis of the sectoral analyses of the different transport modes, an outline investment programme for the next ten years has been drafted, covering roads, ports, rivers, ferries, air transport and urban transport. An ‘unconstrained’ version of this programme is summarised in Table 4-1. Investments have been classified by timeframe, with short-term investments for the years 2006-10 being followed by medium and longer-term investments for the years 2011-15.

Since it is highly unlikely that the full unconstrained programme can be financed by the limited budgets of Government and development partners, ‘constrained’ versions of the programme have also been prepared.

The ‘heavily constrained budget’ programme as shown in Table 0-1 in the Executive Summary could be considered as the minimum level of investment that is needed in the sector (far below what is believed to be ideal). Costs over the ten-year planning horizon are reduced by delays in implementation, spreading of some expenditure items over longer periods, reduction in scale of certain investments, and total exclusion of some large items (including the Brazil and Venezuela roads, and the multi-purpose port facility for Georgetown).

The Moderately Constrained Scenario as shown in Table 4-2 has also been based on adjustments to the Unconstrained Scenario and here the asterisked items have been reduced in value, either by choice of a lower-cost option, or because the proposed programme will now no longer be completed by 2015.

An associated TA implementation programme consisting of 17 projects is shown in Table 0-2 and repeated in Table 4-3.

Please see WP No. 28: *Implementation Programme* on download area of the Project Website for a detailed description on how the different scenarios for the Investment and Maintenance programme were developed.

Table 4-1: Summary of Indicative Investment and Maintenance Implementation Programme (Scenario 2 - Unconstrained Budget)

Activity	Category	Sub Category	Type	Investment Funding	Steps	Potential Donor	Possible Costs Euro (Mill.)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
	<b>Roads</b>																
1		<b>Core Maintenance Programme</b>	Study	Public	Undertake HDM4 Programming of Periodic Maintenance												
2			Maintenance	Public	Implementation of Periodic Maintenance Programme		35,00										
3			Maintenance	Public	Indicative planning and execution of follow-up programme		35,00										
4		<b>Linden Lethem Highway IIRSA Group 2</b>	Construction	Government (Acrow Stockpile)	Immediate Replacement of Timber Bridges		7,00										
5			Study	Public	Research Component A Lower Cost Construction Works												
6			Study	Public	Research Component B Maintenance Practices												
7			Study	Public (together with Brazil)	FS for Road Rehabilitation/ Construction, with Safeguards												
8			Construction	Joint Funding with Private Investor	Implementation of Constuction, with Safeguards	Brazil	60,00										
9		<b>Venezuelan FS IIRSA Group 3</b>	Comments on TOR Preparation		Transport Sector Study to provide guidance		na										
10			Study	Public	Undertake FS for Road Construction	Venezuela											
11			Construction	Joint Funding with Private Investor	Implementation of Constuction, with Safeguards	Venezuela	90,00										
12		<b>Rural Transport: Amerindian Areas</b>	Study	Public	PRSP Support												
13			Construction	Public	Small Scale Interventions, on Pilot Basis		4,00										
14		<b>Farms to Market Roads: Core Areas</b>	Study	Public	PRSP Support												
15			Maintenance	Public	Small Scale Interventions on Pilot Basis		4,00										
16		<b>Development Roads: Non Core Areas</b>	Maintenance/ Construction	Private (with some Public Sector Support)	Develop Schemes led by Private Mining/Forestry Investors		na										
	<b>Ports</b>																
17		<b>Multi -purpose Terminal</b>	Study (Pre-Feasibility)	Public (with Private Sector consultation)	Evaluation of Alternative Sites and Approximate Costs												
18			Study (Full Feasibility)	Public (with Private Sector consultation)	Site Selection & Feasibility Study / Technical Support MARAD												
19			Construction	Public / Private	Implementation Infrastructure		19,50										
20			Construction	Public / Private	Implementation Superstructure and Equipment		28,00										
21		<b>Second Midstream Terminal Berbice</b>	Construction	Private	Site Selection		na										
22		<b>Transshipment/ Small Ports on Other Rivers</b>	Study	Private/ Public	Preparation and Analysis of Sites												
23			Construction	Some Private/ Some Public	Corentyne/ Essequibo/Mabaruma/Berbice (Demerara)		8,00										
	<b>Rivers</b>																
24		<b>Navigation Aids</b>	Construction	Public	Implementation		1,80										
25		<b>Wreck Clearance</b>	Construction	Public	Implementation		2,50										
26		<b>Vessels for River Transport Authority/ MARAD</b>	Construction	Public	Implementation		17,00										
	<b>Ferries</b>																
27		<b>Vessels: Essequibo Ferries and Kimbia</b>	Replacement of Old Ferries	Private	Implementation		11,00										
28		<b>Maintenance</b>	Deferred Maintenance (Immediate)	Public	Implementation		0,50										
29		<b>Stelling Infrastructure</b>	Construction	Public	Implementation		1,50										
	<b>Air Transport</b>																
30		<b>Rural Aerodromes Hub and Spoke</b>	Rehab/ Construction of Hubs	Public/ Private	Implementation		2,00										
31		<b>Provision for an upgraded runway at Timehri</b>	Construction	Public	Implementation (Indicative Timing)		8,00										
32		<b>Navigational Aids and Radar, Timehri</b>	Installation of equipment	Public	Implementation		17,50										
33		<b>Extension of Ogle Airport Runway</b>	Construction	Private	Implementation (Indicative Timing)	Private	2,10										
	<b>Urban Transport</b>																
34		<b>Provision for Traffic Management Improvement</b>	Construction	Public	Implementation		5,00										
35		<b>Minibus Terminal Areas/ Parking Areas</b>	Construction	Public	Implementation		1,00										
36		<b>Provision of Urban Roads</b>	Study	Public	Definition of roads, feasibility studies												
37			Construction	Public	Implementation		20,00										
Total Investment and Maintenance (Excluding FS) Million Euro:							380,40	Short Term Investments					Medium Term - Long Term Investments				

Table 4-2: Summary of Indicative Investment and Maintenance Implementation Programme (Scenario 3 - Moderately Constrained Budget)

Activity	Category	Sub Category	Type	Investment Funding	Steps	Potential Donor	Possible Costs Euro (Mill.)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	
<b>Roads</b>																		
1		Core Maintenance Programme	Study	Public	Undertake HDM4 Programming of Periodic Maintenance													
2			Maintenance	Public	Implementation of Periodic Maintenance Programme		35,00											
3			Maintenance	Public	Indicative planning and execution of follow-up programme		28,00											
4		Linden Lethem Highway IIRSA Group 2	Construction	Government (Acrow Stockpile)	Immediate Replacement of Timber Bridges		7,00											
5			Study	Public	Research Component A Lower Cost Construction Works													
6			Study	Public	Research Component B Maintenance Practices													
7			Study	Public (together with Brazil)	FS for Road Rehabilitation/ Construction, with Safeguards													
8			Construction	Joint Funding with Private Investor	Implementation of Constuction, with Safeguards	Brazil	45,00											
9		Venezuelan FS IIRSA Group 3	Comments on TOR Preparation		Transport Sector Study to provide guidance		na											
10			Study	Public	Undertake FS for Road Construction	Venezuela												
11			Construction	Joint Funding with Private Investor	Implementation of Constuction, with Safeguards	Venezuela	20,00											
12		Rural Transport: Amerindian Areas	Study	Public	PRSP Support													
13			Construction	Public	Small Scale Interventions, on Pilot Basis		4,00											
14		Farms to Market Roads: Core Areas	Study	Public	PRSP Support													
15			Maintenance	Public	Small Scale Interventions on Pilot Basis		4,00											
16		Development Roads: Non Core Areas	Maintenance/ Construction	Private (with some Public Sector Support)	Develop Schemes led by Private Mining/Forestry Investors		na											
<b>Ports</b>																		
17		Multi -purpose Terminal	Study (Pre-Feasibility)	Public (with Private Sector consultation)	Evaluation of Alternative Sites and Approximate Costs													
18			Study (Full Feasibility)	Public (with Private Sector consultation)	Site Selection & Feasibility Study / Technical Support MARAD													
19			Construction	Public / Private	Implementation Infrastructure		19,50											
20			Construction	Public / Private	Implementation Superstructure and Equipment		0,00											
21		Second Midstream Terminal Berbice	Construction	Private	Site Selection		na											
22		Transshipment/ Small Ports on Other Rivers	Study	Private/ Public	Preparation and Analysis of Sites													
23			Construction	Some Private/ Some Public	Corentyne/ Essequibo/Mabaruma/Berbice (Demerara)		8,00											
<b>Rivers</b>																		
24		Navigation Aids	Construction	Public	Implementation		1,80											
25		Wreck Clearance	Construction	Public	Implementation		2,50											
26		Vessels for River Transport Authority/ MARAD	Construction	Public	Implementation		17,00											
<b>Ferries</b>																		
27		Vessels: Essequibo Ferries and Kimbia	Replacement of Old Ferries	Private	Implementation		11,00											
28		Maintenance	Deferred Maintenance (Immediate)	Public	Implementation		0,50											
29		Stelling Infrastructure	Construction	Public	Implementation		1,50											
<b>Air Transport</b>																		
30		Rural Aerodromes Hub and Spoke	Rehab/ Construction of Hubs	Public/ Private	Implementation		2,00											
31		Provision for an upgraded runway at Timehri	Construction	Public	Implementation (Indicative Timing)		0,00											
32		Navigational Aids and Radar, Timehri	Installation of equipment	Public	Implementation		17,50											
33		Extension of Ogle Airport Runway	Construction	Private	Implementation (Indicative Timing)	Private	2,10											
<b>Urban Transport</b>																		
34		Provision for Traffic Management Improvement	Construction	Public	Implementation		5,00											
35		Minibus Terminal Areas/ Parking Areas	Construction	Public	Implementation		1,00											
36		Provision of Urban Roads	Study	Public	Definition of roads, feasibility studies													
37			Construction	Public	Implementation		20,00											
(See notes in the main text)						Total Investment and Maintenance (Excluding FS) Million Euro:		252,40		Short Term Investments				Medium Term - Long Term Investments				

Some of these activities can be carried out by the Government of Guyana without assistance, while others will require the provision of outside investment, technical assistance and consulting services.

#### 4.1 Physical and Non-Physical Means

The major activities involved in the investment and maintenance implementation programme are works and supply contracts in a number of fields, including, inter alia:

- Core road Maintenance Programme,
- Linden - Lethem Highway [IIRSA Group 2],
- Rural Transport interventions in Amerindian Areas,
- River Navigation Aids,
- Wreck Clearance,
- Vessels for River Transport Authority/ MARAD/ Essequibo Ferries and Kimbia,
- Stelling Infrastructure; and
- Rural Aerodromes Investments [Hub and Spoke system].

The major activities involved in the TA implementation programme are consulting services and technical assistance in a number of fields, including, inter alia:

- Assessment of public service obligations,
- Fares and Tolls Study,
- Vehicle, weights, dimensions and taxation study,
- Drafting legislation,
- Urban Transport study,
- River Transport study,
- Rural Transport study,
- Transport (Tourism) study; and
- Institutional strengthening.

Tables 0-1; (as well as 4-1 and 4-2 for the other scenarios) identify the major inputs for each element of the Implementation Programme, while TA V-28 on download area of the Project Website provides a description of each activity.

## 4.2 Organisational and Implementation Procedures

For most of the strategy actions, MPW&C will be the lead agency, though MTI&C and the Ministry of Finance will also be involved. Details on lead agencies are given in Table 0-1 and 0-2.

**Table 4-3: Summary of Indicative TA Implementation Programme Components, Inputs and Budget**

Ref.	Description	Lead Agency	Donor Assistance	Total Cost (Euro)
1	Regulation of Public and Urban Road Transport	GCC	Y	259,520
2	Waterways development (Restructuring of THD/ MARAD Support)	THD/ MARAD	Y	2,427,000
3	Rural Transport Study	MOLG&RD/ RDC's GCAA	Y	398,500
4	Legal and Regulatory Support	MPW&C	Y	410,500
5	Transport: Tourism Support Programme	MPW&C/ MINTIC	Y	74,750
6	Demerara Harbour Bridge Study	MPW&C	Y	531,000
7	Development of Computerised Intermodal Transportation System, Planning and Data Management including hardware & software	CTPU/WSG	Y	451,750
8	Evaluation and Development of Transport Policies	CTPU/WSG	Y	236,000
9	Inter-institutional and Inter-disciplinary Coordination (Capacity Building Measures)	CTPU/WSG	Y	225,750
10	Enforcement of Road Traffic Laws and Regulations (Capacity Building Measures)	GCC GP-TD	Y	156,500
11	Flight Operations and Safety (Capacity Building Measure)	GCAA	Y	77,000
12	Redundancy Retraining Package (Capacity Building Measure)	THD	Y	21,250
13	Conceptual Urban Transport Plans for Main Cities	CTPU/WSG	Y	528,125
14	Support to Road Safety Unit	WSG	Y	662,000
15	Review of RMMS/Establishment of RA	WSG	Y	519,000
16	Support to Institutional Quality Control and Assurance Procedures	WSG	Y	102,250
17	Social and Environmental Monitoring of Investment and Maintenance Projects	WSG	Y	140,825
	<b>Total Cost (Euro)</b>			<b>7,221,720</b>

MPW&C	Ministry of Public Works and Communications
MINTIC	Ministry of Tourism, Industry and Commerce
MOLG&RD	Ministry of Local Government & Regional Development
RDC	Regional Development Council
GCC	Georgetown City Council
GP-TD	Georgetown Police: Traffic Department
GCAA	Guyana Civil Aviation Authority
WSG	Work Services Group
MARAD	Maritime Affairs Department
THD	Transport and Harbours Dept.
CTPU	Central Transport Planning Unit

#### 4.3 Time Schedule

The estimated time to complete the individual components will vary. Many of the activities can be carried out in parallel. However, some activities and the subsequent technical assistance must be carried out sequentially.

Accordingly, the programme will take a minimum of 10 years to complete, even if there are no delays in implementation.

#### 4.4 Cost Estimate and Financing Plan

Total cost is estimated to be some €160.0 million for the Heavily Constrained scenario, most of which would be suitable for donor assistance. TA is some 4.5% of the programme total.

#### 4.5 Special Conditions

The draft policy statement should be endorsed by MPW& C and by Parliament.



## **5 Factors Ensuring Sustainability**

### **5.1 Policy Support and Coordination**

The policy proposal is consistent with the general direction of Government policy on the economy and regional integration.

The assistance of the Ministry of Foreign Affairs will be required in the conclusion of negotiations of transport agreements with the neighbouring countries.

### **5.2 Regulatory and Operational Aspects**

#### **5.2.1 *Enforcement***

At present, road transport regulations are not enforced effectively. The strategy proposal contains components designed to remedy this deficiency (the LIAP programme).

#### **5.2.2 *Private Sector Engagement***

The policy proposal is specifically designed to continue to attract private sector investment in the transport system.

#### **5.2.3 *Safety Promotion***

The strategy proposal contains technical assistance to the police and MPW&C, to improve their capacity for accident analysis, road layouts, control of minibuses and traffic rule enforcement, and improving maritime safety.

#### **5.2.4 *Vehicle Weights and Dimensions***

The policy proposal is specifically designed to coordinate legislation with that of neighbouring countries and to help recover the costs of the damage heavy vehicles cause to the roads.

### **5.2.5 *International Transport and Customs Agreements***

The strategy proposal will comply with the provisions of the Revised Treaty of Chaguaramas and consideration of more general regional customs agreements to permit and facilitate transit traffic.

#### **Fares Regulation**

The policy proposal is specifically designed to protect the interests of consumers-passengers so that tariffs remain sufficient for operators to remain viable [to cover operating costs, capital costs and a reasonable profit] yet remain affordable and socially acceptable.

### **5.3 Environmental Protection**

The policy endorses the provision that any major transport sector investment (road, rail, port or channel dredging) would require a formal Environmental Impact Assessment (EIA).

### **5.4 Socio-Cultural Aspects and Gender Issues**

There are no inconsistencies between the policy proposal and cultural norms.

#### **5.4.1 *Employment Practices and Human Resource Development***

The policy is likely to lead to reductions in employment initially, such as in the THD, which is over-staffed. It will therefore be necessary to design appropriate retraining and placement programmes to lessen the impact on those made redundant. It should be remembered that, for some operating entities, the alternative to reducing staff now is continuing financial weakness, which could result in even larger numbers of redundancies in the future.

The policy proposal is specifically designed to protect numbers of unemployed people by offering retraining and placement assistance.

There is a lot of scope for modernisation and improvement, through the introduction of formal job descriptions and training programmes properly adapted to the commercial needs of the organisation, as well as to the needs of the individual employee.

There are no major socio-cultural issues associated with transport infrastructure or services at present. However, it is recognised that the planning of any new road into forest areas would need to take into account the potential impact on ethnic and cultural minorities living in the project area.

## 5.5 Institutional and Management Capacity

The policy proposal is designed to encourage public-private partnership and the engagement of private sector skills and investment in the operating entities.

The consultancy services envisaged for the implementation programme will need to be led by experienced international consultants, but there will be considerable scope for participation by local consulting companies and professionals.

### 5.5.1 *Road Maintenance Management and Funding*

The policy proposal is designed to encourage a sustained effort to ensure that existing and future road investments are protected from premature and wasteful failure. Guaranteed recurrent funding must be made available in a timely manner such that multi-annual programmes may be implemented.

### 5.5.2 *Promotion of Competition*

The policy proposal is specifically designed to provide a valuable stimulus to improvements in commercial performance and quality of service. In the Air Transport sector, it will be important to foster competition in air transport between CJIAC and Ogle by permitting market forces to prevail.

### 5.5.3 *Public-Private Partnership*

The policy proposal is specifically designed to build upon the good work already done by Government in fostering the development of public-private partnerships/financing. There is much to be gained from active partnership in the areas such as Ferries and Bridge Operations, and the Government should continue to take steps to working with the private sector in these sub-sectors. More enhanced development of PPP remains to be undertaken in the roads sector.

### 5.5.4 *Transport Sector Indicators*

The policy proposal is specifically aimed at coordinating an effort to improve the collection and analysis of transport statistics and establish a computer database system.

## 5.6 Demand, Economic and Financial Analysis

In order to plan for future transport needs effectively, a much improved transport data base is urgently required. This should be set up within MPW&C and should compile traffic and operational data on regular basis. Legislative authority may be necessary to require private sector operators to provide the data, especially in the port sector.

With the establishment of a strong database, meaningful planning of future needs will be greatly facilitated. It will then become possible to identify operational, institutional and investment needs for the short and long-terms.

When potential investment projects are identified, they must be subject to economic and financial analyses to determine their prospective feasibility.

A formal project evaluation system should be set up within MPW&C, adhering to general norms, to cover the whole evaluation process from initial project screening to final evaluation and project preparation. Both economic and financial viability must be carefully considered.

## **6 Monitoring and Evaluation**

### **6.1 Monitoring Indicators**

#### **6.1.1 *Indicators of Progress***

Details of the Implementation Programme are set out in Technical Appendix V-28. They include the passage of laws and decrees, and other actions. Each of these is a matter of public record and can readily be monitored, by the EC Delegation and Review Missions as appropriate. The lead agency could be made responsible for formally notifying the EC where appropriate.

#### **6.1.2 *Monitoring Assumptions***

As noted above, the key assumption is that the Government is fully committed to the general principles of the transport strategy. The following indicators can be used:

MPW&C issues a clear policy statement in accordance with the policy proposals/sector strategy.

The statement is then endorsed by Parliament.

Any relevant legislation embodies the principles of the sector strategy and is passed expeditiously

#### **6.1.3 *Monitoring Sustainability***

Sustainability is primarily a question of ensuring that adequate funds are available, whether raised through fuel taxation (for roads) or through commercial operations, to ensure the long-term maintenance of assets and the continuing operation of the enterprises. Indicators that operations can be sustained are thus:

Roads: adequate funds available, through the fuel levy and other sources, to the MPW&C and the MLG&RD

Public Service Obligations: adequate funds made available, from taxation, to subsidise transport services to remote communities such as the North-west.

Transport operating companies:

- Accounts should reflect the true costs of asset maintenance and replacement.
- Companies should operate profitably.

#### 6.1.4 *Monitoring Impacts*

Monitoring policy impacts is very difficult. Firstly, the outcomes of the policy changes may only be observed after many years, and secondly, outcomes are susceptible to other influences besides the policies, so it is not always possible to know which influence actually determined the outcome. In any event, careful (and possibly expensive) baseline studies are required to establish the initial basis of comparison and it is also desirable to establish a “counterfactual” case, indicating what performance could have been expected if current policies were pursued unchanged.

The list below is indicative.

- Road maintenance: road conditions do not deteriorate,
- Road rehabilitation: road conditions improve and the improvement is sustained,
- Transport Operating Companies
  - Long-run operating costs are reduced
  - Service quality improves
  - Infrastructure and equipment is maintained in good order; and
- Promotion of competition: range of services (e.g. number of private sector ferry operators) is extended and improved.

#### 6.2 Reviews and Evaluations

The review and evaluation schedules for the individual components of the Implementation Programme should be determined when the detailed ToR are drawn up.

## 7 Conclusions and Proposals

The transport sector continues to be in a transition phase. The Government is moving quite quickly towards reducing its direct involvement in transport operations and concentrating on policy and regulatory questions. However, at the same time, it appears slow to restructure or re-finance *some* state owned transport sector operators.

There is a general acceptance that the transport sector needs to become more efficient. In particular, it is clear that some transport entities, and Government departments, such as the THD, are failing to maintain the transport infrastructure and equipment for which they are responsible. Moreover, some of these entities, which occupy key positions in the transport system, are high cost operations, unresponsive to user requirements. Long-term sustainability will require greater and deeper private sector involvement in transport operations and infrastructure, and greater efficiency will require the spur of competition.

The transport strategy outlined here are designed to address the problems of the transport sector through a mixture of regulatory reform, measures to encourage competition, and measures to ensure the long-term sustainability of transport sector infrastructure and equipment. The policy also incorporates measures to reduce adverse environmental impacts of transport operations and to ease traffic congestion in Georgetown.

The proposals are in line with the general direction of government policy, but should be formally endorsed by the Parliament, and by the Ministry of Public Works and Communications. (In this respect, it is noted that MoF is currently negotiating with the IDB the capability to borrow money for infrastructure maintenance). Implementation will involve an extensive programme of institutional strengthening. The donor community can assist this process with the provision of technical assistance and consulting services.

There is also an evident need to rehabilitate some elements of the transport infrastructure and to construct some missing elements. The construction of the Berbice River Bridge is already committed, but a portion of the main road network also requires some rehabilitation and it is also necessary to carry out some Stelling infrastructure works and vessel replacement within the ferry sector. The donor community may wish to consider funding some key elements of the rehabilitation, construction and maintenance components; provided they are satisfied both that progress is made on strategy implementation and that the institutional and financial capacity to maintain the rehabilitated infrastructure is in place. Regarding the Brazil and Venezuela roads, for instance, it is understood that, while government would support studies (in the case of Venezuela to be done together with Venezuelan private sector interests next year); GoG would also expect construction of both the Brazil and Venezuela roads to be financed largely by the private sector.