

CHAPTER 8

TRANSPORT

8.I BASIC FEATURES OF THE SECTOR

8.I.1 ROADS

**8.I.1.1 The Network**

8.I.1.1.1 The main coastal roads are, from west to east, the Essequibo Coast Road, the Parika–Vreed–en–Hoop Road, the East Coast Demerara and West Coast Berbice Roads, and the Corentyne Highway from New Amsterdam to Moleson Creek. All these roads are paved.

8.I.1.1.2 South of Georgetown the primary road is the East Bank Demerara Road, a two–lane road which runs from Georgetown to Timehri, where the Cheddi Jagan International Airport – Timehri (CJIAT) is located. In the period 1966 – 68, Soesdyke, located on the East Bank Demerara Road, was connected to Mackenzie by a modern two lane highway, now called the Soesdyke – Linden Highway. This road was constructed as a section of a highway connecting Georgetown with Lethem. In 1968 a bridge was built across the Demerara River at Linden, and in 1974 it was decided that the route to Lethem would cross the Demerara River at Linden and go south, along the watershed of the Demerara and Essequibo Rivers, through Mabura, to Kurupukari. From Kurupukari it would run parallel to the old cattle trail to Annai, and from Annai it would follow an already existing road to Lethem.

8.I.1.1.3 In the early 1970s a two–lane road with modern geometry and surfaced with laterite was built between Linden and Rockstone. This road was later connected to Mabura and Kurupukari. In 1990–91 a two–lane laterite road was constructed between Kurupukari and Annai and a vehicle ferry installed at Kurupukari. Since there was already an existing road between Mabura and Kurupukari, and between Annai and Lethem, it was now possible for vehicles to travel between Georgetown and Lethem.

8.I.1.1.4 In the period 1974–78, an attempt was made to build a road between Rockstone and Kurupung to facilitate the construction of a large hydroelectric station. From Rockstone it headed north to Suribanna, where a pontoon ferry was installed across the Essequibo River to Sherima. From Sherima the road went westward, intersecting the Bartica – Mahdia Road at Allsopp Point 19 miles from Bartica. From Allsopp Point the road followed the existing road towards Bartica and branched off 5 miles from Bartica going to Teperu in the lower reaches on the Mazaruni River. At Teperu a pontoon ferry was installed across the Mazaruni River to Itaballi. From Itaballi the road went westward to Peter’s Mine on the Puruni River. From Peter’s Mine the road continued as a penetration road to Kurupung. This road is referred to as the UMDA Road.

8.I.1.1.5 There is in addition a hinterland east – west main road system which extends from Kwakwani in the east, through Ituni, Linden, Rockstone, Sherima to Bartica in the west. Linden is therefore one of the main hubs for road transportation in the hinterland.

8.I.1.1.6 The existing road network is approximately 1,610 miles long, 19 percent of which comprises primary roads in the coastal and riverain areas serving the agricultural sector, while the road to Linden serves the mining and forestry sectors. Twenty–one percent is made up of feeder roads which link the agricultural areas along the coast to the primary road network. The remaining 60 percent is composed of interior roads and trails. Most access roads are in poor condition. However, the Central Government has targeted several of them for complete rehabilitation, and already many have been rehabilitated.

8.I.1.1.7 Outside the existing main roads there are several other interior roads and/or trails which comprise approximately 1,570 km. Most of those roads are unpaved, and will deteriorate if maintenance remains inadequate. They are found mostly in the hinterland and riverain areas and provide linkages with a number of important mining and forestry activities thus facilitating transportation between the mining and forestry communities and the more developed coastal areas. Parts of this road/trail network can be developed into an arterial road system linking the hinterland communities with each other and to the main road network. It is estimated that roads carry 80 percent of Guyana's passenger traffic and about 33 percent of its freight.

#### **8.I.1.2 Maintenance**

8.I.1.2.1 To maximise the benefits to be obtained from investment in roads it is necessary to maintain the roads. Failure to do so results in higher vehicle operating costs, increased time in moving from one point to another, serious physical discomfort, and reduced safety in travelling. Timely and continuous maintenance prolongs the intervals between rehabilitation.

8.I.1.2.2 In Guyana, the maintenance of the main road system has been woefully inadequate. In 1980 the Ministry of Works was regionalised and the maintenance of all public roads outside of Georgetown became the responsibility of the Regional Democratic Councils. This resulted in poor standards of public road maintenance throughout the country. In the late 1980s the responsibility for the maintenance of the Soesdyke–Linden Highway was returned to the Roads Administration Division (RAD). However, because of inadequate financing, the maintenance of the country's public roads continues to be extremely unsatisfactory.

#### **8.I.1.3 Major Bridges**

8.I.1.3.1 The coastal main road system is not continuous. There are gaps whenever it intersects the Essequibo, Demerara and Berbice Rivers. People and goods move across these gaps by ferry systems and, in the case of the Demerara River, by way of the Demerara Harbour Bridge (DHB).

8.I.1.3.2 The Demerara Harbour Bridge is a two-lane floating bridge, 1.2 miles long, near the mouth of the Demerara River. It is primarily a low-level bridge which possesses an elevated span with a vertical clearance of 26 feet in the middle of the river to permit small craft to pass. In addition, across the shipping channel, there are two spans which retract to permit the passage of ocean going vessels. The DHB is a toll bridge. From mid 1998 toll revenue has been credited to the account of the DHB and not to the Government of Guyana, as it was until then. This is a step towards the establishment of the DHB as an autonomous statutory authority. At present the toll revenue meets the operational and maintenance costs of the bridge.

#### **8.I.1.4 Railways**

8.I.1.4.1 Commercial railway services for both passengers and cargo were operated until 1974 in Guyana. The two areas of operation were Vreed-en-Hoop/Parika (18.5 miles) and Georgetown/Rosignol (65 miles). With the upgrading of the West Coast Demerara/East Bank Essequibo and the East Coast Demerara/West Coast Berbice roadways, the Government decided in mid 1970s to cease operating these railway services, which were being run at a loss.

8.I.1.4.2 A railway service is still, however, operated in Linden, mainly to move bauxite ore. In addition, in the Matthews Ridge area, there is a 32-mile railway service.

### **8.I.2 AIR**

8.I.2.1 Air transport plays a vital role in the development of Guyana. Within the country, it provides a link between the coastal areas and communities in the hinterland, many of which are inaccessible by any other means of transportation. Thus, the economic and social well being of these areas and their integration into the fabric of the nation are critically dependent on the availability of air transport. Externally, passengers are moved to and from the country almost entirely by air. In addition, the potential of this mode of transport for the carriage of cargo, especially exports, continues to increase.

8.I.2.2 Although air transport in Guyana had its early beginnings in the 1920s when the first "bush" services were introduced, Government's earnest participation can be dated from 1947 when a Director of Civil Aviation was appointed to regulate the industry. In 1955, the Government purchased the British Guiana Airways, a private airline that had been operating regular internal services since 1939. However, external services continued to be supplied almost exclusively by foreign airlines until the Guyana Airways Corporation commenced regional air services in 1979. Subsequently, restrictions on the repatriation of profits in foreign exchange and other circumstances contributed to the withdrawal of services to Guyana by foreign airlines, with the exception of BWIA. Guyana Airways Corporation was therefore obliged to fill the breach by commencing jet operations to Miami, New York and Toronto. In the 1980s Guyana Airways Corporation's domestic operations started to deteriorate for a number of reasons, not least among them the unrealistically low fares it was required to charge and the lack of access to foreign exchange for imported aircraft parts and other requirements. The private sector therefore began to fill the gap and by 1991 three major domestic charter operators had emerged.

8.I.2.3 In the meantime, Guyana Airways Corporation's domestic service continued to deteriorate and, by 1993, possessed only one Twin Otter DHC-6 to service the entire country. Under new management it was revitalised and saw a partial return to its original domestic role with the reintroduction of several domestic scheduled routes, because of the addition of two Shorts Skyvan SC7 aircraft, and a second Twin Otter DHC-6 aircraft.

8.I.2.4 At present, nearly 200 airfields, of which more than 100 are in use, are located across the country. The average interior airfield is unpaved and approximately 2500 feet long. This limits the class of aircraft that can use them. Moreover, their general state is borderline, even for STOL operations. Indeed, many of them become unserviceable during the rainy seasons.

8.I.2.5 Ogle, one of the main secondary aerodromes, is located about 6 miles east of Georgetown. It is the base from which small private aircraft operate regular and chartered flights from the coastland to the hinterland and overseas.

8.I.2.6 Guyana has one international airport, the Cheddi Jagan International Airport – Timehri (CJIAT) that is located at Timehri, about 25 miles south of Georgetown. This airport has been much improved since 1996: the size of the terminal has been more than doubled and has been made more user-friendly; and a modern departure wing, with adequate check-in counters and facilities for airlines and comfortable areas for departing passengers has been added. Immigration and Departure Gate facilities have also improved. Moreover, the level of safety has risen, new runway lights have been installed and stand-by power is adequate. In addition, the Control Tower has undergone extensive rehabilitation and is now in a fair condition.

8.I.2.7 There is no approved Air Transport Policy for Guyana. Although a Civil Aviation Act was passed on 15 December 1996, the Air Navigation Regulations which were necessary to implement the Act have not yet been formulated. As a consequence, the U.K. Colonial Air Navigation Order of 1961 still administers Guyana's air transport sector.

### 8.I.3 MARINE

8.I.3.1 It is generally agreed that, for the movement of bulky low-value goods over great distances, water transport is cheapest. This is especially true where, as in Guyana at the moment, road infrastructural development is not well advanced. Moreover, with the widespread decentralisation of economic activity that is being proposed in this Strategy, and with the corresponding development of the interior regions of the country, the demand for water transport, even if the proposed road building projects are speedily implemented might, perhaps paradoxically, increase rather than diminish.

8.I.3.2 At present, virtually all our exports and imports are transported by sea.

8.I.3.3 The infrastructure that supports water transport in Guyana is located along the banks of the navigable rivers, namely, the Essequibo, Demerara and Berbice. In addition to the wharves and stellingas that provide coastal and inland linkages, there are facilities that handle both the country's overseas and local shipping requirements.

8.I.3.4 The main port of Georgetown, located at the mouth of the Demerara river, comprises several wharves, most of which are privately owned. In addition, three berths are available for oceangoing vessels at Linden.

8.I.3.5 Draught constraints limit the size of vessels using Georgetown's Harbour to 15,000 dwt. However, recent improvements in the channel in the Berbice river have made it possible for ships of up to 55,000 dwt. to dock there.

8.I.3.6 Guyana's foreign trade is handled by foreign shipping companies.

8.I.3.7 The largest bulk exports are bauxite and sugar, and the largest volume imports are petroleum and wheat flour.

8.I.3.8 Important breakbulk exports include rice and timber.

8.I.3.9 Containers are used but because they are not part of the internal transport system, they are loaded and unloaded at the ports.

8.I.3.10 Internal barge transport is important for bauxite, sugar, rice and aggregates. In the case of sugar, for example, 98 percent of exports is delivered by barge to the port of Georgetown for export. Rivers are used for moving logs and account also for a significant share of those persons who travel to the interior.

8.I.3.11 It is estimated that about 1,000 km of waterways in Guyana are utilised for commerce in Guyana. In addition, drainage canals are important transport channels for collecting sugar on the estates and for personal travel.

8.I.3.12 Ferry services link the primary roads in the coastal area, and Guyana with Suriname. The Government's Transport and Harbour Department provides scheduled ferry services in the Essequibo, Demerara and Berbice rivers. Small privately-owned river-craft supplement these services.

8.I.3.13 Only two ferry services consistently show profits: the Rosignol-New Amsterdam and the Parika-Adventure. For the remainder, in particular for the Berbice River and the North West services, the Government provides a cross-subsidy funded out of the profits that are always realised by the Harbour Branch of the Transport and Harbours Department. Nevertheless, ferry operations have the potential to be profitable, provided that capital investments are made to improve their physical assets. With the

establishment of a Maritime Administration and subsequently a National Sea Ports Authority the ferry operations must either be privatised or operated as a commercially viable autonomous agency. While some increases in rates may accompany privatisation, it is anticipated that the quality and capacity of the service would be improved.

8.I.3.14 Ultimately, key ferry links will be replaced with bridges, starting with one from Rosignol to New Amsterdam across the Berbice River.

8.I.3.15 The fleet of ferry vessels owned by the Transport and Harbours Department, at the end of 1999, comprised nine motor vessels, six of which ranged in age from 15 to 55 years. Indeed, two of the vessels were over fifty years of age, and three over 30 years, with an average age of thirty–five. Perhaps not surprisingly, they are in almost continuous need of repair.

## **8.II ISSUES AND CONSTRAINTS**

### **8.II.1 ROAD**

#### **8.II.1.1 Issues**

8.II.1.1.1 The portion of the East Bank road between the Demerara Harbour Bridge and Georgetown is extremely congested. Indeed, most of the East Bank road is likely to become even more clogged because of increasing economic and housing activity in the catchment area which it serves. It is therefore necessary both to widen the road in this area, and to construct an additional route for commuters and other citizens.

8.II.1.1.2 The area between Mahaica, Parika and Timehri is developing as a conurbation centred on Georgetown, with significant flows of commuter traffic. There is need to supply enough road space to accommodate this traffic so that commuter time may be reduced.

8.II.1.1.3 There is a conflict between vehicles and vessels for the use the space where the DHB intersects the shipping channel at high tide, which is when ocean going vessels move along the Demerara River.

8.II.1.1.4 The time taken while waiting to cross the Berbice River is inordinately long. This often leads to much anger and annoyance on the part of passengers, and to a curtailment of economic activity.

8.II.1.1.5 The road between Linden and Mabura is a health hazard. In addition, road users suffer much discomfort.

8.II.1.1.6 The hinterland east–west main road between Bartica, Linden and Kwakwani is not adequately maintained. Travel on it is rough, uncomfortable and sometimes impossible.

8.II.1.1.7 The geometry of the road between Mabura and Kurupukari, and the design of the bridges, do not meet modern highway standards and are considered dangerous.

8.II.1.1.8 The pontoon ferry at Kurupukari has limited capacity. As a result, waiting time is long if the number of vehicles arriving for a particular crossing exceeds the ferry capacity.

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- 8.II.1.1.9 The road between Annai and Good Hope is rough and stretches are subject to seasonal flooding and erosion.
- 8.II.1.1.10 Vehicles using the roads in the South Rupununi Savannas cross the creeks by fording. However, rainstorms often cause the water in the creeks to rise significantly and impede fording.
- 8.II.1.1.11 There is an insufficiency of all weather access roads connecting mining, forest and agriculture areas, in the hinterland, to the Georgetown – Lethem Road.
- 8.II.1.1.12 There are not enough disciplined forces to patrol the borders of Guyana and reliance has to be placed on the placement and development of the civilian population near the borders. Access to such areas by all weather roads is therefore vital. As important, is the fact that access roads in these regions would enable surplus agricultural products to be sold to markets in urban centres.
- 8.II.1.1.13 There is an alarming overloading of axles on the main road network.
- 8.II.1.1.14 Vehicles with containers 40 ft. long exceed the legal limits of vehicle size. A significant number of 45 ft. long containers are also in use.
- 8.II.1.1.15 Gross weights of a significant number of large vehicles exceed the design live loads of bridges. To place weight restrictions on vehicles crossing major bridges would increase the cost of transportation of goods and would require significant police resources to enforce. The bridges themselves ought, therefore, to be re-designed and strengthened.
- 8.II.1.1.16 The number of accidents, fatal and non-fatal, on all the roads in Guyana is unacceptably high.
- 8.II.1.1.17 There is inadequate maintenance of the road network.
- 8.II.1.1.18 There is encroachment on road reserves; moreover, reserves are not legally defined for roads in hinterland areas.
- 8.II.1.1.19 There is no official national highway system and no official highway policy.
- 8.II.1.1.20 There is need to establish such a system in Guyana, and connect it to the national highway systems of Brazil and Venezuela.
- 8.II.1.1.21 In case of a disaster caused by the flooding of Georgetown, there is inadequate road capacity between Georgetown and Timehri to enable the rapid transport of persons from Georgetown and its environs to higher ground.
- 8.II.1.1.22 Guyanese road builders, in general, have not yet developed modern road construction techniques.
- 8.II.1.2 Constraints
- 8.II.1.2.1 Limited institutional capacity. The existing public service entity does not have the capacity effectively to perform all the tasks required for establishing and maintaining road transport in Guyana.
- 8.II.1.2.2 Inadequate financial resources from general tax revenues.

8.II.1.2.3 Lack of a sufficient number of experienced road contractors in Guyana to provide road construction and maintenance services on a significant scale on a competitive basis under contract with road authorities.

8.II.1.2.4 Lack of sufficient cost recovery mechanisms in the sector to finance road construction and maintenance activities.

8.II.1.2.5 Lack of contact between the highway authorities of Guyana, Suriname, Brazil and Venezuela to promote development of the highway system across these countries.

## 8.II.2 AIR

8.II.2.1 Civil Aviation in Guyana is still being administered under the United Kingdom Air Navigation Order of 1961. This Order does not take into account the evolving changes in the aviation environment both internationally and locally.

8.II.2.2 The public service bureaucracy impedes the operations of Civil Aviation as it relates to the decision-making and implementation process for Air Transport Operations and Licensing.

8.II.2.3 The government's anachronistic financial and procurement systems restrict the efficient functioning of airports that are required to provide services, facilities, and air navigation systems on a 24-hour basis.

8.II.2.4 International air connections remain limited, in respect of types of aircraft and the frequency of flights. Moreover, passengers on too many international flights are forced to change services in neighbouring countries before reaching their final destination in Guyana.

8.II.2.5 Regulations for international travel are inappropriate from the viewpoint of enhancing fair competition among airlines and promoting the protection of passengers.

8.II.2.6 There are areas of conflict between national legislation and internationally accepted rules, regulations, and procedures applicable to international civil aviation.

8.II.2.7 Major international conventions on civil aviation have not been ratified.

8.II.2.8 There is no coordinated airports and air navigation plan to provide for the rehabilitation of interior airfields, to foster the development of national air navigation systems in a cohesive way, and to improve generally the airport and navigation facilities throughout the country.

8.II.2.9 There is a shortage of opportunities and facilities for the development of personnel employed within the sector.

8.II.2.10 There is no effective and fully equipped Search and Rescue Unit within the air transport sector to provide emergency services.

8.II.2.11 The dependence of the Civil Aviation Department on budgetary allocations by the government is not conducive to the development of the sector and to its adjustment to rapid changes in civil aviation.

8.II.2.12 There is an insufficiency of navigational aids and facilities for airport services within the country.

8.II.2.13 No Air Services Agreements exist between Guyana and most countries in the world. There is need, also, to regularise such Agreements even where they are already in existence, because there are often many disparities among them and they are quite frequently out-of-date.

8.II.2.14 The limited capacity and substandard quality of airfields both in the interior and on the coast restrict the type of aircraft operations and contribute to their relative costliness.

8.II.2.15 The operation of commercial air services by the Guyana Defence Force (GDF) provides unfair competition with all other operators.

8.II.2.16 The limitation as to the approval of helicopter operations by privately owned companies, unnecessarily restricts ingress to and egress from the hinterland, and reduces the efficiency of search and rescue operations.

8.II.2.17 The limited runway length at Cheddi Jagan International Airport – Timehri severely reduces the opportunities of utilising it for international flights.

8.II.2.18 The substandard physical facilities at Ogle Aerodrome, including taxiways, runways, and approach and take-off clearways inhibit its use for both internal and external flights.

### **8.II.3 MARINE**

8.II.3.1 There has been a shift in emphasis from the Demerara transshipment station to the Berbice River Deep Water facility which was created by the Aroaima Bauxite Company to facilitate the entry and exit of Panamax size ships, thereby allowing for the transshipment of great quantities of bauxite, a situation that was previously impossible. The success of the operations in this facility illustrates the necessity for the creation of full-service deep water harbours to cater for both imported and exported cargo.

8.II.3.2 The selling prices of quarry products and lumber for use in the urban centres, for road construction and in industry, are greatly increased by the high cost of transportation in Guyana. Indeed, it is because of this factor that it is sometimes argued that it might be cheaper to import some of these products, as against relying on indigenous sources of supply.

8.II.3.3 In an environment in which speed is often of the essence, a reduction in the distance of transportation in terms of nautical miles by the establishment of berthing facilities at Supenaam and Morshee might be eminently feasible. For example, the construction of a wharf at Supenaam would allow for a faster turn around of the Transport and Harbours Department vessel, thereby increasing the number of daily trips, and providing a distinct advantage to commuters.

8.II.3.4 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.

8.II.3.5 The absence of a functioning coast station impedes the process of effective maritime communication; stultifies search and rescue operations; constrains the surveillance capacity of the Coast Guard; and encourages piracy, the vandalism of navigation aids, drug operations, and fish poaching in our territorial waters, and the evasion of customs duties.

8.II.3.6 The nonexistence of a buoy tender makes it very difficult to position and repair aids to navigation.

8.II.3.7 The Georgetown Harbour has a plethora of wrecks which pose a hazard to effective navigation. Unless this situation is addressed as a matter of urgency, the harbour could eventually be declared unsafe for navigation by international marine regulatory agencies. This would obviously have an adverse effect both on our exports and imports, on the performance of the economy, and on our quality of life.

8.II.3.8 The inadequacy of financial resources to acquire the requisite equipment to boost or maintain an efficient and reliable maritime transport service is an obvious constraint to the development of the sector, and to the growth of the overall economy.

8.II.3.9 The failure to grant autonomy to the Transport and Harbours Department prohibits the organisation from establishing realistic fares and tariffs for the facilitation of commercially viable port and ferry services, and limits the development of the sector. In addition, weak institutional arrangements within the Department, and the poor remuneration of employees, result in a lack of commitment and a high attrition rate.

8.II.3.10 Because of the relatively old age of the vessels maintenance costs are high, and the reliability of the services that are rendered most problematical.

8.II.3.11 The ferries, because of their own inherent inefficiencies, and because also of the low prices charged for the transport of goods, vehicles and personnel are, as we have seen, for the most part uneconomic to run and are a drain on the exchequer.

### 8.III SECTORAL OBJECTIVES

#### 8.III.1 ROAD

8.III.1.1 The overall objective of the sector is to construct a national road transport network which would provide the basis for the economic development of the entire country, and assist in the attainment of its social integration.

In particular, it would:–

- (i) provide adequate access to all the regions in Guyana to enhance their social and economic development;
- (ii) assist in the occupation of as much of the country as possible for security reasons; and
- (iii) establish road linkages with Brazil and Venezuela, and through these countries with the rest of South and Central America, and North America in order to facilitate trade.

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#### 8.III.2 AIR

8.III.2.1 The general objectives of the air transport sector are (i) to improve the standard of living and the quality of life of Guyanese by providing air access to different parts of the world and to different areas in Guyana (ii) to enhance penetration into the country's interior; (iii) to provide facilities to enable easy ingress to, and egress from, the interior in times of emergency; and (iv) to assist the tourism industry.

### **8.III.3 MARINE**

8.III.3.1 To promote reliable and efficient maritime transport in the coastal and riverain areas of the country, particularly as it relates to the major sectors of the economy.

8.III.3.2 To ensure that the facilities and services that are available at the ports and harbours of the country optimise the export and import of all types of commodities from and into Guyana.

## **8.IV THE STRATEGY**

### **8.IV.1 ROAD**

8.IV.1.1 A north–south highway, parallel to the existing East Bank road will be constructed between Eastern Mandella Avenue and Soesdyke. There will be at least four east–west roads connecting the East Bank road to the new highway.

8.IV.1.2 The road connecting Georgetown–Soesdyke–Linden–Mabura–Kurupukari, Annai–Good Hope and Lethem will be the north–south national highway.

8.IV.1.3 The road between Linden and Lethem will be improved to the same standard as the highway between Georgetown and Linden.

8.IV.1.4 The ferry at Kurupukari, on the Essequibo River, will be replaced by a bridge.

8.IV.1.5 The carriageway on the East Bank Demerara road between La Penitence and Peter’s Hall will be widened to accommodate four lanes of traffic.

8.IV.1.6 The east–west national highway, that is the road between Georgetown and Moleson Creek would be much improved. In particular the pavement and the bridges between Sheriff Street and Enmore will be strengthened to the design standards of a national highway system; and a new highway will be constructed between Enmore and the Berbice River Bridge.

8.IV.1.7 A two–lane bridge across the Demerara River, adjacent to the Demerara Harbour Bridge, with a vertical clearance over the navigational channel which would enable ocean going vessels to pass under the bridge, will be constructed. This new bridge will be connected to the East Bank Demerara Highway and the West Bank Demerara Road. It will replace the Demerara Harbour Bridge which will then be dismantled and its components used to construct bridges elsewhere.

8.IV.1.8 A two–lane bridge across the Berbice River, with a vertical clearance over the navigational channel which would enable vessels using the river to pass under the bridge, will be constructed.

8.IV.1.9 The road connecting Kwakwani, Ituni, Linden, Rockstone, Anarika, Allsopp Point and Bartica will be improved to modern standards, with a paved surface. It will cross the Essequibo River by a bridge in the vicinity of Kokerite Island.

8.IV.1.10 Bridges across the creeks on the road from Lethem to Marudi will be constructed.

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8.IV.1.11 A paved two-lane road from Parika to Makouria and Anarika, and between Patentia and Kamuni will be constructed.

8.IV.1.12 A two lane laterite road from Konawaruk southwards to the Siparuni River, to meet the road between Kurupukari and Annai, with a branch to Orinduik and other villages in the Pakaraima Mountains, will be constructed.

8.IV.1.13 The UMDA Road between Itaballi and Kurupung will be rehabilitated and completed.

8.IV.1.14 A two-lane road between Itaballi and Eteringbang, and a bridge across the Cuyuni River to link the Guyana road system with that of Venezuela will be built.

8.IV.1.15 A two-lane branch road from the Itaballi–Eteringbang road to Towakaima and Matthews Ridge, and a two lane road from Port Kaituma to Yarakita will be constructed.

8.IV.1.16 A two-lane road from Supenaam to Towaikaima, with branch roads to Santa Rosa and Koriabo will be constructed.

8.IV.1.17 A bridge across the Takutu River at Lethem to connect the Guyana road system to that of Brazil will be built.

8.IV.1.18 A two-lane road from Kwakwani eastwards to Epira and Orealla and a two lane road northwards from Orealla to Moleson Creek will be put in place.

8.IV.1.19 A two-lane road from Marudi to Camp Jaguar, and a two lane road from Marudi to Oronoque Camp will be constructed.

8.IV.1.20 A two-lane road from Orealla to Camp Jaguar will be built.

8.IV.1.21 A two-lane road from Annai eastwards to Apoteri to meet the road from Orealla to Camp Jaguar at Lanaballi River will be constructed.

8.IV.1.22 A two-lane road from Port Kaituma to Yarakita will be built.

8.IV.1.23 The capacity of the roads and bridges between Georgetown and Parika, Georgetown and Timehri, and Georgetown and Mahaica will be increased to reduce commuting time.

**8.IV.1.24 These roads, when established, will provide a network which traverses the length and breadth of Guyana. They will connect all the Regions of the country, give access to all its economic zones and link the country with all its neighbours. They will enable easy movement within the Regions. The network will also permit Guyanese to travel by road to all parts of South America, Central America and North America.**

8.IV.1.25 An autonomous highway and bridge agency, the structure of which will include, *inter alia*, a highway division, a bridge division, a geotechnical services unit and an environmental management unit will be established. This agency will be staffed with suitably academically qualified and experienced engineers. The highway division will also have a small construction unit to enable it to develop new road construction techniques and to train Guyanese contractors in their use.

8.IV.1.26 Contracting firms owned by Guyanese nationals will be assisted through the facilitation of credit, the establishment of machinery pools, and the provision of relevant training in the undertaking of large scale

road construction projects, to enable them to compete with foreign contractors.

8.IV.1.27 Modern standards for the construction, operation and maintenance of the national highway system will be established.

**8.IV.1.28 Funds for road maintenance are currently derived from general revenue and foreign donors loans or grants. An appropriate schedule of user charges will be formulated in order to generate revenues to replace or supplement transfers from the Central Government for road maintenance.**

8.IV.1.29 An annual road maintenance budget will be prepared in which the roadways that should be maintained are identified and prioritized.

8.IV.1.30 A separate road maintenance fund will be established, with decision power on its allocations vested in a Board that includes representatives of the Ministry of Finance, the Ministry of Public Works and Communications, the Ministry of Local Government, RDCs, NDCs, and the Private Sector Commission.

8.IV.1.31 Tolls will be imposed for the use of new major bridges and new roads.

8.IV.1.32 Higher taxes will be required from vehicle owners. Indeed, the entire vehicle tax system will be periodically updated.

8.IV.1.33 The regulatory and operational functions of government will be separated.

8.IV.1.34 The policy of driving on the left hand side of the road will be reviewed *pari passu* with the establishment of road links with Venezuela and Brazil.

8.IV.1.35 Plans will be developed for a new bridge across the Demerara River, to be carried out through a build, operate and transfer ownership (BOT) arrangement. The Demerara Harbour Bridge has been rehabilitated with funding from EU. This work will extend the life of the bridge up to 2012. Work on plans for a new high level bridge will be initiated immediately, so that it may become operational before 2012. It may turn out that the only practicable way to carry out the construction, operation and maintenance of the new bridge is by a BOT arrangement, or by a build, operate, own (BOO) arrangement.

8.IV.1.36 All road-related projects will conform to the findings of environmental impact assessments.

8.IV.1.37 There is a critical shortage of skilled staff to discharge the functions and responsibilities of the RA+D. A new autonomous public works agency with the capacity to pay attractive salaries will be established, and would help in this regard.

8.IV.1.38 In addition to attractive remuneration and adequate incentive and fringe benefits packages, and the training and upgrading of the skills of the staff, prospects for long-term career development in the context of the strategies adumbrated here will also be stressed.

8.IV.1.39 Training in the Faculty of Technology at the University of Guyana will be expanded and upgraded.

8.IV.1.40 Weight controls will be enforced on all roads, along with increased frequency of inspection for weight and for observance of safety regulations. Penalties will be increased for unsafe operations of minibuses, violations of weight controls, and encroachment on road reserves.

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8.IV.1.41 Guyana can ill afford the wanton loss of lives on our roads resulting from minibus accidents. Safety measures will therefore be established and enforced to lower the accident rate. Fines for the violation of transport safety regulations will be increased and the random inspection of operating minibuses will be carried out with greater frequency.

8.IV.1.42 Stopping areas for minibuses will be identified in the towns, rural areas and the hinterlands at which public transport will be required to load and unload passengers.

### 8.IV.1.43 Investment Strategies

8.IV.1.43.1 To date, investment in the road subsector has been largely left to the Government. However, the magnitude of the investment needed in the road transport subsector if this Strategy is to be implemented, is overwhelming. Due to limited resources, the Government is unable to undertake such investment. There is therefore scope from both local and foreign financiers, who will be encouraged by the provision of adequate incentives, to supplement the Government's effort through BOT and BOO arrangements for the construction, operation and maintenance of new transport infrastructure. The arrangements will allow for private investors to build, operate and maintain infrastructural facilities, to recoup their investment and make reasonable profits.

8.IV.1.43.2 In developing the hinterland, emphasis will be placed on core investors. If the hinterland is developed by small investors only, it would be difficult for such a strategy to produce arterial roads. Core investors would be those firms investing in large mining, forestry, agricultural or hydro-power projects in areas which require significant expenditure on roads to connect the project area to the national road system. The traffic on such roads would be traffic into and out of the project area generated by the mining, forestry or agricultural operations of the project. Incentives will be given to this type of investor, if the roads that are built conform to the national road plan, and are consonant with the national engineering specifications.

### 8.IV.2 AIR

8.IV.2.1 The physical facilities at Cheddi Jagan International Airport – Timehri including runways, taxiways, aprons, communications and navigational aids, and the air navigation system at airfields throughout the country will be improved.

8.IV.2.2 A feasibility study to lengthen the runway at Cheddi Jagan International Airport – Timehri, will be immediately undertaken.

8.IV.2.3 An autonomous Airports Authority for the management of the international airport at Timehri and other government airports will be established.

8.IV.2.4 An autonomous Civil Aviation Authority for the regulation of the Civil Aviation sector will be established.

8.IV.2.5 The 1996 Civil Aviation Act will be updated, and concomitant Air Navigation Regulations will be prepared and implemented.

8.IV.2.6 Wherever possible, Air Services Agreements will be concluded with all countries with which Guyana wishes to exchange air services.

8.IV.2.7 Where such Agreements exist, but do not meet international requirements, they will be renegotiated.

8.IV.2.8 Interior and coastal airfields will be rehabilitated and upgraded in accordance with a plan to be formulated by the government and the private sector.

8.IV.2.9 The use of military aircraft for civil commercial operations will be prohibited.

8.IV.2.10 The existing limitations on helicopter operations by privately owned companies will be removed, subject to the establishment of regulatory standards by the Civil Aviation Authority.

8.IV.2.11 Ogle Aerodrome will be developed into a Municipal and Regional Airport of Entry, and will be privatised.

8.IV.2.12 The development and expansion of privately owned airlines will be promoted and encouraged by a system of incentives.

8.IV.2.13 The frequency of international air services at both Timehri and Ogle will be increased by the upgrading of services and facilities to promote such operations.

8.IV.2.14 Systems will be put in place to improve the country's search and rescue capacity. This will entail close cooperation between the private and public sectors.

8.IV.2.15 All restrictions on Guyanese privately owned airlines, will be eliminated. Such airlines will, of course, be subject to the country's air operation laws and regulatory procedures.

### **8.IV.3 MARINE**

8.IV.3.1 wrecks which affect navigation and the smooth flow of traffic in and out of the harbours will be removed.

8.IV.3.2 Regulations will be established and implemented to ensure a high degree of safety standards on board all the vessels which ply the coastal waters of Guyana and those engaged in regional and international shipping.

8.IV.3.3 Better dredging schedules will be organised and implemented to keep open the access channels to Guyana's ports of entry and exit.

8.IV.3.4 Wharves and berths in the major ports will be upgraded so that they reflect standards in keeping with prescribed harbour and port regulations.

8.IV.3.5 All aids to navigation in the access channels in the major rivers of Guyana will be improved.

8.IV.3.6 It will be ensured that all coastal and foreign-going vessels are issued with seaworthy certificates by duly registered dockyards from the national grid as well as internationally recognised certification bodies.

8.IV.3.7 Conditions will be put in place to ensure a reliable twenty-four hour per day pilot service in the ports and harbours of the Country.

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8.IV.3.8 It will be ensured that the design of bridges be such as not to restrict the normal size of barges which enter our rivers and travel to their upper reaches.

8.IV.3.9 A canal will be dug to link the Demerara and the Essequibo Rivers in order to reduce the distance, time and costs of transportation between Essequibo and Demerara. This canal will significantly decrease the cost of transporting quarry products and lumber from the Mazaruni, Cuyuni, and Essequibo Rivers to other parts of the country.

8.IV.3.10 A comprehensive study will be conducted of the waterways in Guyana to ascertain whether the establishment of canal linkages between various rivers would be feasible, both physically and economically.

8.IV.3.11 A Maritime Administration will be established as a matter of urgency. This would allow for Port State and Flag State Control regulations to be administered and enforced. This is of particular importance since the State is now party to the Caribbean Memorandum of Understanding on Port State Control.

8.IV.3.12 The Harbours Division will be separated from the Ferries Division to facilitate a greater concentration on the development of the port. The new entity will be established as the National Ports Authority. All navigable waters, inclusive of the economic zone, which are under the jurisdiction of Guyana, will fall under the Harbours/Port Authority in terms of regulations.

8.IV.3.13 Given the fact that Guyana has acceded to a significant number of key International Maritime Conventions, provision will be made for these to be incorporated into comprehensive new national legislation to guarantee full compliance.

8.IV.3.14 As a flag State, Guyana will ensure that the requisite provisions are in place to provide continuous training for its seafarers, at least at the deck ratings level. With the enforcement of the International Regulations pertaining to Standards of Training and Certification of Watchkeeping Officers (STCW) 1995, Guyanese seafarers are finding it extremely difficult to keep their places on board foreign vessels because they are not certified in keeping with the STCW 95 Convention.

8.IV.3.15 The Coast Station will be upgraded to offer an effective service to the maritime community. This would include 24 hours per day VHF and HF services to facilitate, *inter alia* Search and Rescue Operations. At the present time this facility, for which the Guyana Telephone and Telegraph Company is responsible, is non-functional.

8.IV.3.16 Deep Water Harbour:

8.IV.3.16.1 It is projected that the development of road links between Brazil and Guyana, and Guyana and Venezuela, would give Guyana a strategic advantage, if such a facility was utilised as a hub for cargo destined for areas in these two neighboring States where easy access by sea is not practicable. A deep water facility will therefore be established on the West Bank of the Demerara River within two miles of the Transport and Harbours Department Stelling at Vreed-en-Hoop. This area is easily accessible from the main ships' channel, and could be easily connected to the West Demerara Highway.

8.IV.3.16.2 The Berbice River deep water facility will continue to be dredged and maintained.

8.IV.3.16.3 Consideration will be given to the use of small gas turbine shallow displacement vessels to gain access to the interior regions of the country thereby enhancing eco-tourism development.

8.IV.3.16.4 Standards will be established for horizontal and vertical clearances under new bridges across rivers such as the Mahaica and Mahaicony. The horizontal clearance will be 120 feet and the vertical

clearance 7 feet, above mean high water level.

## 8.V PRELIMINARY INVESTMENT PROGRAMME

### 8.V.1 ROAD

8.V.1.1 The following projects are identified for investment over the next five year period:

- (i) Completion of the Essequibo Coast Road Rehabilitation Project.
- (ii) Completion of the Main Road Rehabilitation Programme Phase 1 – Timehri to Mahaica.
- (iii) Completion of the Main Road Rehabilitation Programme Phase 11 – Bridge Rehabilitation.
- (iv) Rehabilitation of the ECD Road from Mahaica to Abary, and the WCB Road from Abary to Blairmont.
- (v) Improvement of the stretches of the Linden – Lethem Road between Mabura and Kurupukari and between Annai and Lethem to modern two lane geometric standard with laterite surface, and construction of a bridge across the Essequibo River at Kurupukari to replace the ferry.
- (vi) Reconstruction of the East Bank Demerara Road between La Penitence and Peter’s Hall as a four lane highway.
- (vii) Construction of a bridge across the Berbice River, with its access roads.
- (viii) Construction of a new highway between Georgetown and Soesdyke.
- (ix) Construction of a road between Parika and Suribanna and between Patentia and Kamuni.
- (x) Rehabilitation of the Corentyne Highway.
- (xi) Paving the Linden – Mabura stretch of the Linden – Lethem Road.
- (xii) Improvement of the road between Linden and Bartica to enable cars to travel on it, and construction of a bridge in the vicinity of Kokerite Island to replace the ferry between Suribanna and Sherima.
- (xiii) Improvement of the road between Linden and Kwakwani to enable cars to travel on it.
- (xiv) Construction of bridges over creeks on the road between Lethem and Marudi.
- (xv) Construction of a two lane road between Moleson Creek and Orealla.
- (xvi) Execution of a feasibility study for a high level bridge across the Demerara River to replace the DHB.
- (xvii) Improvement of the roads connecting Bartica, Mahdia and Issano.
- (xviii) Construction of a network of roads connecting the villages and towns in Regions 8 and 9.

(xix) Construction of a network of roads in the Intermediate savannahs.

(xx) Construction of a bridge over the Berbice River.

#### 8.V.2 AIR

8.V.2.1 The following projects are identified for investment over a five–year period:

Safety and security would be given priority in the following long–term programme.

(i) Cheddi Jagan International Airport, Timehri:

- ◆ Extension of the main runway (subject to results of the feasibility study)
- ◆ Resurfacing of the runways
- ◆ Apron Expansion
- ◆ Rehabilitating and improving runway approach lights
- ◆ Construction of a cargo complex, including freezer facilities
- ◆ Upgrading the crash/fire rescue service
- ◆ Implementing the CNS/ATM system, inclusive of equipment modernisation in the air navigation and DGPS systems

(ii) Implementation of the preliminary master plan for Timehri and Ogle airports prepared under UNDP/ICAO Project (1993) updated to reflect current trends and needs.

(iii) Development of Ogle Municipal and Regional Airport:

- ◆ Construction of new runway and taxiways
- ◆ Construction of new Terminal Building
- ◆ Improvement of Navigational and Telecommunication Aids
- ◆ Construction and Improvement of Air Traffic Control Tower
- ◆ Improvement of Fire Hall and CFR Equipment

(iv) Upgrading and Rehabilitation of Interior and Coastal Airfields

(v) Provision of modern Search and Rescue resources to the Civil Aviation Authority.