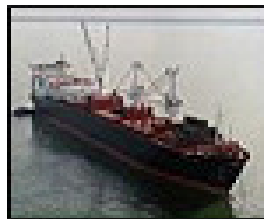




VISION 2030 JAMAICA -
National Development Plan

**TRANSPORT
SECTOR PLAN (1ST DRAFT)**



*Prepared by
The Transport Task Force
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1. Introduction

1.1 *Vision 2030 Jamaica – National Development Plan*

Background

In 2006, the Government of Jamaica (GOJ) mandated the Planning Institute of Jamaica (PIOJ) to lead the preparation of a comprehensive long-term National Development Plan (NDP) which will seek to transform Jamaica into a developed country by 2030. Development of the Plan began in January 2007 and twenty-seven Task Forces (TFs) including the Transport Task Force were established thereafter. The TFs represent sectors and areas critical to the achievement of the national goals and have been charged with responsibility for developing the relevant long-term sector plans.

The Transport Task Force through three sub-committees, viz., land, air and maritime transport, commenced the plan preparation exercise in April 2007, leading to the completion and submission of a 1st draft report for the long-term development of the transport sector in Jamaica.

This Sector Plan for Transport is one of the strategic priority areas of the *Vision 2030 Jamaica: National Development Plan* and is based on a shared vision of placing Jamaica in a position to achieve developed country status by 2030.

It is one of twenty-seven chapters that will form the foundation for the development of Vision 2030 Jamaica – a 20-year plan based on a fundamental vision to make ‘*Jamaica the place of choice to raise families, live, work and do business,*’ and on guiding principles which put the Jamaican people at the centre of the nation’s transformation. Twelve strategic priorities, one of which is Infrastructure, have been identified as critical elements in fulfilling the objectives of the plan.

The preparation of the Plan will be supported by a quantitative systems dynamics computer model – Threshold 21 (T21) – which supports comprehensive, integrated planning that would enable the consideration of a broad range of interconnected economic, social and environmental factors and will be used to project future consequences of different strategies across a wide range of indicators. In addition, it will enable planners to trace causes of changes in any variable or indicator back to the relevant assumptions and policy choices.

The first draft of this sector plan was developed using the following processes:

- Participation of Task Force Members¹ through Task Force Meetings² that were used to solicit ideas and views on transport issues and challenges facing Jamaica

¹ See Appendix 1 for List of Members of the Transport Task Force

² See Appendix 2 for Listing of Task Force Meetings

- as well as identifying a vision for transport in Jamaica, and determining key goals, objectives and strategies for the sector
- Sub-committees on land, air and maritime transport involving sector stakeholders
- Research on international best practices in transport that could be adopted in the Jamaican context
- Working group meetings between task force members and the PIOJ

This 1st Draft Sector Plan for Transport is structured in the following sections as follows:

- Situational Analysis
- SWOT Analysis
- Proposed Vision Statements
- Strategic Framework – Goals, Objectives and Strategies

1.2 *Transport and National Development*

The transport sector – land, air and maritime - represents a critical component of any country in its impact on national development. One of the most fundamental attributes of the sector is the ability to move persons, goods and services between spatial locations at the local, regional and international levels. The efficient management of the sector can provide tremendous economic and social gains to a country through indirect and direct employment as well as induced development which ultimately leads to wealth creation and growth. Studies have revealed that:

- for every US\$1.0 billion investment in highways through the Federal-Aid Programme in the United States of America, approximately 41,000 full time jobs are created
- for every one million passenger passing through an airport in Europe, 4,000 jobs are created through direct, indirect and catalytic impact on employment in the surrounding community
- the air transport industry in 2004 generated a total of 29 million jobs (direct, indirect, and induced) globally
- in many developed countries, transportation accounts between 6% and 12% of GDP³.

It has been stated that an efficient and effective transport sector is indispensable to economic progress. Other sectors such as mining, manufacturing, trade, tourism and agriculture which are critical to a nation's growth and development, like many other sectors depend upon transportation. Without adequate infrastructure to facilitate the movement of people and goods, economic and social benefits will be limited.

Jamaica transport system includes: (i) a total of 15,394 km of road network (all categories)⁴; (ii) an airport infrastructure of two international airports and four domestic

³ Rodrigue, Comtois and Slack (2006).

aerodromes; (iii) a railway network covering approximately 331 km of track as well as six privately owned mining railways lines; and (iv) a maritime transport infrastructure of fourteen major seaports.

During the period 2001-2006, Transport, Storage and Communication (TS&C) contributed on average 13.78% to Jamaica's Gross Domestic Product (GDP)⁵. In 2004/05, transport – railway, road, water and air including services allied to transport – contributed 6.7% to total GDP.⁶ The overall transport sector (including land, sea and air transport) is the largest consumer of petroleum in the Jamaican economy, accounting for 41% of the total quantity of petroleum consumption in 2006.⁷

The provision of infrastructure poses special problems in part because of the “public interest” dimensions of public utilities and the long-term nature of financial commitments. The private sector may be reluctant to invest in infrastructure, unless supported by a secure and equitable policy environment. The proper maintenance of infrastructure, once built, is dependent on the existence of an appropriate regulatory and institutional environment in which infrastructure providers (whether public or private) will operate. Consequently the efficient and equitable provision of infrastructure cannot be separated from the modernization of the state. This is especially true in the Jamaican case. For national development to be achieved efficiently, detailed planning in key strategic areas of the economy including the transport sector is a necessity.

2. Situational Analysis – Jamaica's Transport Sector

The transport sector in Jamaica may be considered to include road and rail transportation, air and maritime transportation (See Figure 1 – Appendix 6). The Ministry of Housing, Transport, Water and Works (MHTWW) has prepared a draft National Transport Policy to provide a framework for the future development of the sector.⁸

2.1 Land Transport Sub-Sector – Situational Analysis

Land transportation in Jamaica encompasses two (2) components: road and railway transportation. The bulk of commuting public in Jamaica travels via land transportation. The land transport sub-sector is the second largest consumer of petroleum, accounting for

⁴ 844 km of arterial roads, 717 km of secondary roads, 3,225 km of tertiary roads, 282 km of urban roads, 10,326 km of parochial roads and 800 bridges on main road. Source: Transport Policy.

⁵ (At constant 1996 prices), Economic and Social Survey of Jamaica, 2006

⁶ Ministry of Housing, Transport, Water and Works – Annual Transport Statistics Report 2004/05

⁷ Economic and Social Survey of Jamaica, 2006

⁸ On September 11, 2007, the MHTWW was re-organized into two (2) new Ministries, the Ministry of Transport and Works and the Ministry of Housing and Water

21% of total consumption in 2006. Land transportation is also the most affected by natural disasters such as hurricanes and tropical storms, which have caused extensive damage to infrastructure in recent years and in effect result in a significant reduction in activities of Jamaica's transportation system. As there is interdependence among the transportation sub-sectors of air, land and maritime transportation, any activity that negatively impacts on the land transportation sector, is felt in the other transportation sub-sectors, and vice versa.

(a) Road Transportation

Road transportation, being the larger component of land transportation has been affected by the variations in transportation activities in recent years. Road transport includes the road infrastructure, private motor vehicle movement, and the public transport system including buses and licensed public passenger system. Jamaica has one of the densest road networks in the world, with a total of 15,394 kilometres of road. The length of the road network in Jamaica has incurred some changes due to developments such as the realignment of main roads. There was also the addition of thirty-three kilometers (33km) to the road network due to the construction of Highway 2000 (H2K). Traffic volume has been steadily increasing over recent years. This has led to congestion problems in major towns and capitals across the island. Traffic management initiatives have been implemented in the Kingston Metropolitan Transport Region (KMTR) and proposals have been made to address congestion issues in other parishes.

Policy and Institutional Framework

Road transportation encompasses the movements of pedestrians, automobiles and cycles. There are nine (9) entities under the purview of the MHTWW⁹ that are involved in road transportation in Jamaica. These are the Island Traffic Authority (ITA), Jamaica Ultimate Tyre Company, Jamaica Urban Transit Company (JUTC), Montego Bay Metro Limited (MBM), National Road Operating and Constructing Company (NROCC), National Works Agency (NWA), Road Maintenance Fund Board (RMFB), Toll Authority and the Transport Authority (TA). In the area of public transportation the ITA, JUTC, MBM and the TA are key entities. The RMFB, NROCC and the NWA are involved in road construction and the development and maintenance of road infrastructure. There are other entities that operate with the realm of road transportation that are not portfolio entities of the Ministry. These entities include Jamaica Social Investment Fund (JSIF), Urban Development Corporation (UDC), Rural Agricultural Development Authority (RADA), Trade Board Limited, Inland Revenue Department (IRD), Parish Councils and the Kingston and St. Andrew Corporation (KSAC).

The ITA is currently part of the MHTWW structure and is responsible for issuing certificates of competence to drivers and fitness testing for road vehicles. The ITA works in partnership with the TA to certify public passenger vehicles. The TA is a regulatory

⁹ See previous footnote

agency, which allocates bus routes through an open process, monitors the operation of bus companies and provides regulation of rural stage buses, taxis, and taxi rates. The TA also has some non-regulatory responsibilities such as issuing road licences for public passenger vehicles, training of bus conductors (required for buses with 15 seats or more), conductor testing and issuing of badges to conductors. There is also responsibility for licensing and regulation of private sector passenger bus transit including taxi services and private bus transit islandwide.

The JUTC was established in 1998 and currently operates throughout the Kingston Metropolitan Transport Region (KMTR). At present, operations are undertaken at four (4) depots – Lyndhurst, Portmore, Rockfort (commenced operations January 10, 2005) and Twickenham Park. The JUTC continues to play a pivotal role in public transportation in the KMTR through the provision of efficient services to the commuting public. The MBM established operations in 1997 and has played a pivotal role in the provision of public transportation services in the Montego Bay Metropolitan Region. In order to continue operations, the MBM needs to acquire sustainable financial support.

The Toll Roads Act, 2002, established the Toll Authority to oversee the operations and maintenance of roads designed as toll roads. The NROCC, which is the implementing entity for the Highway 2000 (H2K) project, works in tandem with the Toll Authority. All work on the Causeway was completed in June 2006.

The RMFB was established in September 2002 under the Road Maintenance Fund Act, to manage a pool of funds for the specific maintenance of main roads and structures of main roads island wide. The Fund receives one third (1/3) of the motor vehicle licensing fees collected by the Inland Revenue Department. The responsibility for maintenance and management of roads and bridges islandwide is shared between the NWA, which has jurisdiction over main roads, and Parish Councils along with Kingston and St. Andrew Corporation (KSAC), which carry out works related to parochial roads. The NWA was designated as an executive agency in 2001 and assumed core functions previously undertaken by the Public Works Department (PWD). The NWA is therefore responsible for the island's main road network, and as such oversees the implementation of all main road works projects.

The Ministry of Agriculture through RADA also plays a role in the transportation sector. RADA is the authority responsible for farm roads across the island. The work of RADA in the maintenance of these key roads is limited due to unavailability of funds for roadwork activities. As such, farm roads across the island are in state of disrepair and farming communities are negatively affected. Transportation costs have greatly increased for farmers getting produce to the relative markets. Various proposals have been made to rehabilitate farm roads, and some roads have been transferred to the portfolio responsibilities of some Local Authorities, but the overall poor condition of farm roads islandwide requires immediate attention in an effort to increase and sustain the contribution to the agricultural sector.

Main Projects and Activities

The major road infrastructure projects underway in Jamaica include the Northern Coastal Highway Improvement Project (NCHIP) and the Highway 2000 Project. Segment 1 of the NCHIP from Negril to Montego Bay was completed in 2002, Segment 2 from Montego Bay to Ocho Rios is nearing completion, and Segment 3 from Ocho Rios to Fair Prospect commenced in 2005. During the 2004-2005 period under Segment 2 of the NCHIP, which is part of the Northern Jamaica Development Project (NJDP), works continued on road sections from Falmouth Bypass in Trelawny to Priory, St. Ann, including the laying of drainage pipes, construction of box culverts, asphalt paving and construction of four (4) bridge structures. Works progressed on bridge structures at Martha Brae, Pear Tree and Wakefield Interchange. There was also completion of approximately twelve kilometers (12km) of roadway which was opened to the motoring public including the Duncan's Bypass, Coopers Pen Deviation, Burwood and Braco.

The Highway 2000 Project was planned as a public-private partnership for the construction of a 230km highway running from Kingston to Montego Bay and Ocho Rios as Jamaica's first toll road. Phase 1 of the project from Kingston to Williamsfield is still underway with completion of the legs connecting Kingston, Portmore, Bushy Park and Sandy Bay. Completion of Phase 1 is projected for 2008, while completion of the entire project will be based on determination of economic feasibility following completion of Phase 1.

The RMFB has financed a number of roadwork projects in the Kingston Metropolitan Area, including the Monroe Road/Old Hope Road and the Half-Way-Tree projects. These projects were implemented by the NWA. The Fund was also involved in a number of ongoing improvement projects including the Constant Spring Road/Dunrobin Avenue intersection, Shortwood Road/Constant Spring Road intersection, Barbican Road/Russell Heights Intersection and the East King House Road bridge expansion. Improved traffic management, resulting in the reduction of traffic congestion and a consequent ease in traffic flow is expected in these areas.

The NWA is also responsible for the implementation of a number of roadwork programmes such as the National Road Improvement Programme (NARIP), IADB Road Rehabilitation Programme and the Kuwait/OPEC Fund Assisted Road Rehabilitation Project (KFAED). Under NARIP, the Government experienced financial difficulties that affected the project and works were suspended in the Caribbean Development Bank (CDB) programme. Plans are in place to implement a new programme called the National Road Services Improvement Programme (NARSIP), which is comprised of two (2) main components. These are the provision of institutional strengthening services, and support for the establishment of the three-year based routine maintenance programme.

The NWA has also been carrying out work in the area of overloaded heavy-duty vehicles. Over the years, there has been significant road maintenance and repairs expenditure, which is reasoned to be the result of the widespread practice of overloading heavy-duty vehicles. Spot checks were done by the NWA, at various points across the island. It was

found that the majority of heavy vehicles in the samples were carrying nearly twice their designated axle-bearing load. These activities have led to excessive damage to road surfaces in Jamaica's main road network. Given the varied responsibilities of the NWA, the successful implementation of the ongoing programmes and activities will lead to greater efficiency in addressing the growing demand on the main road network.

The construction of the Half-Way-Tree Transportation Centre is a historic venture, which was officially launched March 30, 2005 with a ground breaking ceremony. The Centre is designed to be a modern facility with two levels – one level for arriving buses and the other for departing buses. It will ultimately provide a single-terminus area for all buses traversing the Half-Way-Tree area. Adequate facilities will be in place for the commuting public and there will also be a commercial area with a number of shops and kiosks. The JUTC and TA will also have offices at the location. The Half Way Tree Transportation Centre is scheduled to be completed in November 2007.

Additional transport centres are planned for other areas of the island, although these are not directly under the Ministry's portfolio. The Urban Development Corporation (UDC) is spearheading plans for a Transport centre in Downtown Kingston. Significantly, there are also proposals by Local Government Authorities to construct municipal transportation centres in areas such as Spaldings, Clarendon and Darliston, Westmoreland.

Public Transport

Under the rationalisation of the public passenger transport system in the Kingston Metropolitan Region (KMTR), the Metropolitan Management Transport Holdings Ltd. (MMTH) was established in 1995 with responsibility for purchasing buses and building depots and terminal facilities, while the Jamaica Urban Transit Company (JUTC) was established in 1998 to operate the public passenger transportation system that had previously been provided by private operators. In 2005 there were a total of 1,749 buses licensed to operate in or from the KMTR with a total seating capacity of 435,382. In addition the Montego Bay Metro provides service on six routes with 11 buses. There were a total of 16,540 taxis licensed by the Transport Authority to provide public passenger service islandwide. The importance of the public transport system to road transport in Jamaica is highlighted by the finding of a recent survey that nearly 75% of households do not own a motor vehicle.¹⁰

Road Master Plan

The government has undertaken the preparation of a Road Master Plan with funding support from the European Union to guide the development and maintenance of the island's road network over the next ten (10) years. The main provisions of the Road Master Plan include identification of priority roads in need of periodic maintenance; estimation of preliminary maintenance and construction costs; and recommendations for funding mechanisms. While the Road Master Plan has not yet been formally adopted by

¹⁰ PIOJ and STATIN (2007) *Residential Consumer End Use Survey*

the Jamaican government, the Transport Plan for Vision 2030 seeks to ensure continuity in long-term planning for land transport in Jamaica by building on the provisions of the Road Master Plan.

(b) Railway Transportation

Railway transportation forms the second tier of land transportation, and it was one of the earliest modes of transportation to be introduced in Jamaica, dating back to the 1880s. Public railway tracks belonging to the Jamaica Railway Corporation (JRC) span three hundred thirty five kilometers (335km) across the island, traversing nine (9) of the fourteen (14) parishes of Jamaican. These are Clarendon, Kingston, Manchester, Portland, St. Ann, St. Catherine, St. Elizabeth, St. James ad St. Mary, where there are over forty (40) stations. Since the closure of the public passenger and freight transport services of the Jamaica Railway Corporation (JRC) in 1992, passenger rail transport has remained dormant and railway operations in Jamaica are currently limited to the activities of bauxite companies in the island. There are efforts underway to amend the Jamaican Railway Corporation Act, 1960 to make adequate provision for the privatization of railway operations.

A number of entities have expressed an interest in revitalizing the railway but, to date, public passenger and freight services have been not restored. In 2005 the government entered into agreement with a Chinese government company to undertake studies on the feasibility of rehabilitation of the railway service in Jamaica. Significantly, the reopening of Jamaica's public railway transport operations could serve to alleviate the problem of congestion, especially within the KMTR.

Issues and Challenges

With a dense road network and limited alternatives for internal transport Jamaica is highly dependent on road transport for personal and freight movement. The challenges of road transport therefore will be fundamental to the long-term economic development of the island, including the following considerations:

1. Funding:

Funding for road construction and maintenance will present a major challenge to the public sector, particularly given the budget constraints imposed by the requirements for debt service payments. Expenditure on road work programmes amounted to \$2.2 billion in 2006, compared with \$3.3 billion in 2005.¹¹ It will be important therefore to explore further opportunities for private sector participation and cost recovery through user fees in the construction of new roads, based on the example provided by the first phase of Highway 2000.

¹¹ ESSJ 2006

2. Rationalization and Maintenance of Road Network

Over the long term Jamaica's existing road network will have to be rationalized as it will not be possible to maintain the entire network at the same standards. Road maintenance will have to be prioritized based on economic and social criteria, including consideration of the relative costs and benefits of primary, secondary and tertiary road networks. The role of the Road Maintenance Fund that is currently targeted at road maintenance projects on main roads also should be reviewed, particularly given the cost-effectiveness of road maintenance and rehabilitation compared to new road construction. The lack of adequate funding for periodic maintenance in particular will lead to early failure of roads even if routine maintenance activities are carried out. The present approach to road repairs where regular and planned maintenance is replaced by patching of failed areas that have been previously patched is not sustainable and does not address the fundamental causes of road failure. Proper road maintenance also will result in reduced vehicle operating costs.

It will be necessary also to rationalize road construction and maintenance between the National Works Agency (NWA) for national roads and local authorities for parochial roads. The issue of ownership and jurisdiction of major drains and gullies also must be determined by Government. The impact and importance of these drainage structures on the road network must be adequately addressed, particularly as the majority of road failures are due to poor drainage of the pavement. Road maintenance also must be combined with maintenance of associated infrastructure such as drains and culverts.

3. Planning and Land Transport

Road transport is space-intensive in the sense that the road network and ancillary facilities occupy large amounts of land. This issue is particularly relevant given Jamaica's relatively dense road network. The long-term development of land transport therefore represents an important aspect of spatial planning for Jamaica. The need to minimize traveling requirements also should be incorporated into urban and regional planning, for example by developing mixed-use communities where work places are in closer proximity to residences, and by promoting tele-working and tele-commuting as a substitute for physical movement of persons. Regional planning also must consider the potential impact of improved road and public transport systems on facilitating rural to urban migration, as well as enhancing commuting of workers.

4. Traffic Management

Traffic congestion may result from a number of causes including volumes of traffic too high for road capacity, road obstructions and inefficient traffic management systems, and is characterized by slower speeds, longer trip times, and increased queueing. The negative effects of traffic congestion include the loss of productive time of motorists and passengers, increased air pollution and vehicular wear and tear, and interference with passage of emergency vehicles. Jamaica currently experiences significant traffic congestion particularly in a number of urban areas throughout the country. Over the medium and long term it will be necessary for Jamaica to consider a wide range of measures to improve traffic flows in its road transport system, including use of more efficient traffic management techniques, junction improvements, promotion of higher

vehicle occupancy, parking restrictions, intelligent transportation systems and flexible work and school hours to reduce peak traffic flows.

5. Road Safety and Access

Road safety represents an important aspect of a sustainable land transport system. While the number of road fatalities has declined over the past decade, the number of admissions to accident and emergency units of public hospitals resulting from motor vehicle accidents increased from 11,940 in 2001 to 12,678 in 2005 and jumped to 13,182 for the first nine months of 2006.¹² The Road Safety Unit of the MHTWW is involved in Public Information Campaigns and an Education in Schools Programme to promote safe use of roads in Jamaica. Long term reduction in accident and casualty rates will require effective implementation of the key approaches of the National Road Safety Policy including engineering and traffic management, education and information, enforcement and legislation, emergency response and evaluation. Access to land transport is also an issue as the existing public transport system presents access problems for a number of social groups, including the elderly and the disabled.

5. Motor Vehicle Policy

The motor vehicle import policy has seen significant increase in the number of new and used motor vehicles operating in Jamaica. The number of vehicles certified fit to operate on the island's roadways during fiscal year 2005/2006 was 319,621, an increase of 26.1% over the previous year. While the increased number of vehicles has enhanced mobility and convenience of citizens, the economic and environmental costs of importing, maintaining and fuelling such a fleet will pose long-term challenges to the sustainability of the policy. In addition the feasibility of rehabilitation of the railway as an alternative mode of transport has not yet been established. It will become increasingly important therefore to develop a sound and affordable public transport system as a long-term solution for a sustainable road transport system.

6. Inter-Modal Transport

As an island Jamaica's land transport sub-sector is entirely a domestic system, with no cross-boundary land transport issues. However the land transport sub-sector is linked to the air transport and maritime sub-sectors, which are both dominated by international transport modes. It will be important therefore to develop and strengthen the inter-modal transport linkages between land, sea and air transport modes particularly in the context of expanding Jamaica's role as an international transport hub. Within the domestic land transport system, non-motorized road transport including bicycles and pedestrian traffic may be facilitated particularly in urban areas but will only represent a supplementary mode of transportation for most purposes.

6. Environmental Issues

The main environmental issues relating to land transport include air pollution, noise, and dust. Vehicle emissions are related to the age and fuel-inefficiency of the existing motor

¹² ESSJ 2001-2006

vehicle fleet and the concentration of populations and traffic congestion in urban areas island wide. Public health impacts from the land transport system result from exposure to harmful environmental impacts and from traffic accident casualties. The land transport sub-sector also has contributed to increased consumption of imported fossil fuels and to long-term climate change. Increased paved roadway also increases surface water runoff, which tends to increase the degree of flooding resulting from hydrometeorological events. The road network also is vulnerable to damage caused by natural hazards, particularly hurricanes, tropical storms and associated rainfall and flooding, including sediment floods.

7. Sustainable Transport

The overarching concept of sustainable transport involves moving people, goods and information in ways that reduce the impact on the environment, the economy, and society, and may include using more energy-efficient transport modes, improving transport choices, using cleaner fuels and technologies, using information and communications technologies and enlightened urban and regional planning to reduce or replace physical travel, and developing sustainable transport policies.¹³ Many of these approaches are included in the issues identified above. The development of a sustainable land transport system for Jamaica also will involve reference to a range of indicators for sustainable transport, including: fixed and flexible urban transport routes, public transport priority, private motorized vehicle ownership, accessibility of public transport vehicles and infrastructure, passengers carried by public transport, investment in public transport, road safety, and the age, fuel consumption, and pollution reduction technologies of vehicles in the public transport fleet.¹⁴ It will be important to develop the framework and sources of data by which the land transport system can benchmark its progress toward sustainable transport.

2.2 Air Transport Sub-Sector – Situational Analysis

Jamaica's air transport system comprises an international system and a domestic system. The three (3) main entities in the air transport sector are the Aviation Service Providers such as airports, air traffic services, aircraft maintenance organizations, airlines and AEROTEL; Users of air transport, such as passengers and shippers, and the Regulator, the Jamaica Civil Aviation Authority (JCAA). The service providers and regulator facilitate air transportation in Jamaica in a manner that conforms with international best practices stipulated by the United Nations body responsible for civil aviation, the International Civil Aviation Organization (ICAO).

¹³ See for example <http://www.mfe.govt.nz/issues/transport/sustainable/>

¹⁴ See Transport and Travel Research Limited (2005) *Urban Transport Benchmarking Initiative Year Two: Annex A1 - Review of the Common Indicators*, and (2006) *Urban Transport Benchmarking Initiative Year Three: Annex A1 - Review of the Common Indicators*

The 1974 enactment of the Airports Authority Act transferred to the AAJ, responsibilities for the ownership, management and commercial functions of the two (2) international airports – Norman Manley International Airport (NMIA) and the Sangster International Airport (SIA). In 1997, AAJ's responsibility was expanded to incorporate the four (4) active domestic aerodromes – Boscobel, Ken Jones, Negril and the Tinson Pen. One of the primary responsibilities of the AAJ is to oversee the expansion and modernization of facilities at the island's international and domestic aerodromes. Currently, upgrading of the airside and landside facilities at NMIA is being undertaken under the Airport Reform and Improvement Programme (ARIP). The Privatization Agreement between AAJ and the new operator of SIA, MJB Airports Limited became effective on April 12, 2003. The new operator assumed full responsibility for the daily management and capital development of the airport facility. The SIA is leased to MJB Airports Limited for thirty (30) years. Terminal and airside facilities development at SIA is currently underway.

The JCAA was established in 1996 to address the safe and orderly development of air transport services in Jamaica. The Authority, which replaced the Civil Aviation Department, was to strengthen safety measures and regulation of the Jamaican air transport sector. The JCAA currently regulates all air navigation activities and matters relating to safety and security in civil aviation in Jamaica and Jamaican airspace, as stipulated by ICAO. As a member State of the ICAO, Jamaica is required to ensure that civil aviation operations are carried out in accordance with the Standards and Recommended Practices (SARPS) of the 1944 Chicago Convention on International Civil Aviation. The regulatory areas under the responsibility of the JCAA can be categorized into two (2) main areas: flight safety and economic regulation. Flight safety includes the licensing of industry personnel and continued safety and security oversight of all aviation service providers. Economic regulation relates to the regulation of airport services and charges, permits for charter flights and air transport licences to aircraft operators. Additionally the Authority provides air navigation services incorporating air traffic management, air traffic control training and aeronautical information services, as well as aeronautical communication services through its subsidiary, AEROTEL.

AEROTEL was established in August 1978 for the provision of engineering and telecommunication services to the aviation sector. The entity is a subsidiary of the JCAA, and its functions include designing, installing, maintaining and operating aeronautical telecommunication facilities and systems for various entities. These include the JCAA, Meteorological Office, AAJ, Airlines and users of Jamaica's airspace, the Kingston Flight Information Region (FIR).

Extensive developments have occurred at the island's aerodromes. The international aerodromes (NMIA and SIA) have undergone significant changes including the installation of an Instrument Landing System (ILS) at both airports. The introduction of surveillance radar in air navigations has allowed both airports improved traffic management and the potential for greater capacity. The building of a cold storage facility at NMIA will allow for the increase in cargo business as the transshipment of perishable goods can now be accommodated. Activities at the international airports are further reflected in the comparisons between the 2003-2004 and 2004-2005 financial years,

which highlighted significant changes in areas such as passenger movements. Passenger movement at the NMIA in 2003- 2004 was 1,439,978 and this increased to 1,488,393 in 2004-2005, a growth of 3.4%. SIA also recorded a growth of 2.3% for the period, as passenger movement increased from 3,253,299 in 2003-2004 to 3,323,601 in 2004-2005.

The domestic aerodromes also experienced improvement works during 2004-2005. Works were undertaken at the Negril Aerodrome to rehabilitate and improve the facility and these included the extension of the existing 660m runway to create a 150m safety area. There was, however a decrease in aircraft movements at the domestic aerodromes. This was most evident at the Tinson Pen aerodrome and this is arguably linked to the reduction in aircraft movements for Air Jamaica Express, which decreased the number of flights and subsequently ceased domestic flights in April 2005.

Global Trends: Current trends in world aviation have seen the deregulation of airfares in the 1980's resulting in the demise of uncompetitive airlines and the emergence of efficiently run carriers including a plethora of low cost carriers. Also, increasingly stringent post-911 security requirements and, more recently, high fuel prices have caused all but the most efficient carriers to become unprofitable with many US carriers operating under the protection of bankruptcy protection laws. This has resulted in strategic alliances between carriers becoming the norm, with major legacy carriers providing seamless travel globally through their code-sharing partners. Non-alliance carriers have been left to compete against great odds and at great cost.

Liberalization of the global industry has seen innovative private ownership structures for airlines, airports and many other aviation service providers including providers of air navigation services. There has been steady growth in the global industry with ICAO projecting passenger operations to grow at a rate of 3% per year and cargo operations at a rate of 6% annually. A doubling of the size of the global industry is expected over the next 20 years and so effort is being made to increase global capacity to handle air traffic.

Capacity building measures include:

- Building larger aircraft (Airbus A380)
- Building super efficient aircraft (Boeing 787 Dreamliner)
- Building Very Light Jets to fly into small municipal airports for better point to point passenger service and to relieve large airports of some traffic

An airport hub strategy is now emerging as the major alliances seek to fly cargo and passengers between Major Hub airports using large aircraft, while relying on Secondary Hub airports to form catchments served by smaller aircraft of alliance partners. Secondary airports will form catchments for Secondary Hubs using commuter type aircraft. This is similar to the seaport hub strategy emerging in the maritime industry.

Local Trends:

- Increasing passenger movement (4.8 million in 2004)
- Declining air cargo movement

- Decreasing aircraft movement
- High fuel prices
- Low economies of scale creating high fees and charges for cost recovery of services
- Fiercely competitive domestic sector
- Poor domestic infrastructure
- Shortage of industry professionals
- Decreasing national fleet
- Unprofitable national carrier
- Costly local and regional fares
- Effective Regulatory Authority
- Modern but costly air navigation services
- Modern airport terminals with non-standard Class D runways and Code E Fire Fighting and Rescue Services

Issues and Challenges

1. National Carrier

The international air transport system will have to resolve the fate of Air Jamaica as part of its long term planning. The national carrier has been unprofitable for many years and has passed through phases of private and public ownership without achieving financial viability. The strategic issues involved include the limited economies of scale of small national carriers and the requirements to ensure provision of adequate airlift for Jamaica's travel and tourism industry. The options for Air Jamaica may include another attempt at privatization, rationalization and down-sizing of the airline, or consolidation or merger for example with another regional carrier such as BWIA.

2. Domestic Air Transport

The main challenges for the domestic air transport system will include maintenance and expansion of aircraft fleet and land-based infrastructure including aerodromes, and generation of economic levels of revenue from internal personal, business, tourism and freight traffic. The turnaround of the declining domestic general aviation industry will need to address the challenges of high fuel prices and low economies of scale among competing providers.

3. Regulatory Framework and Infrastructure

The international and domestic air transport systems also must maintain required standards of aviation legislation and regulation, civil aviation obligations, airport infrastructure, air navigation and traffic control, air freight and cargo handling, customs and immigration, customer service and security management. Other issues include the lack of a security regulated agent, a restricted open skies policy, a complicated fee structure and improvements needed to existing immigration and customs procedures and to the land use planning and development process.

Infrastructure issues include insufficient air cargo facilities, limited domestic aerodrome infrastructure, peak hour congestion and the fact that the existing international airports do

not have the capacity to extend runways to support long stage lengths. Infrastructure development will need to consider completion of existing upgrading projects at the two existing international airports, consideration of further expansion of the existing international airports, and the potential construction of a third international airport on the south coast, most likely at Vernam Field, to meet the long-term requirements for the growth of air transport. The expansion of the air transport infrastructure will require careful consideration of the land requirements for these developments, and reservation of required lands for the air transport sub-sector as part of long-term urban and regional planning for Jamaica.

4. Environmental Issues

Finally the air transport system also must address its impact on the environment, including the contribution to air pollution and global warming through burning of fossil fuels. The global environmental implications of the air transport sub-sector also include the potential increases in the cost of air travel through mechanisms such as taxation of jet fuel.¹⁵

2.3 Maritime Transport Sub-Sector – Situational Analysis

As an island Jamaica will continue to have an important role for maritime transport in its long-term development. It should be noted that Jamaica's water-based transport sub-sector is almost entirely represented by deep-sea maritime transport, as inland waterways and short-sea coastal shipping play insignificant roles in the island's transport sector. There is no gainsaying that Jamaica is a maritime State by virtue of its dominant regional transshipment hub, premier cruise ship terminals and other well-developed maritime transportation infrastructure. The success achieved by maritime industries is not limited to Jamaica nor is it of recent vintage. It is the direct consequence of the robust state of international trade worldwide. The role of maritime transport is enhanced by Jamaica's location astride strategic sea trade routes and by the projected increase in transshipment traffic through the Caribbean over the long term based on the planned expansion of the Panama Canal that will double its capacity by the year 2015. The preeminent issue for the maritime transport sub sector is the major commitment made to establishing Jamaica as a global transshipment and logistics hub as a part of its economic future involving significant investment in infrastructure in the Port of Kingston. It will be important therefore to maximize the return on this investment by supporting port development with adequate training and ancillary services, careful monitoring of long-term alternatives to the Panama Canal including the U.S. inter-modal system and the Suez Canal, and exploration of options to develop linkages that can leverage the investment in port facilities such as through support services, manufacturing and industrial zones.

Jamaica possesses the necessary prerequisites to have an even stronger and sustainable maritime sub-sector over the long term (See Appendix 7: Tables 1-3). The challenge, however is to replicate the formula for creating investment grade projects for

¹⁵ As is presently done in the Netherlands

containerized cargo and cruise ship passengers facilities into the other areas such as dry and liquid bulk cargoes.

Table 3 highlights in greater detail current infrastructure developments of particular relevance to the maritime sub-sector, and indicates that maritime initiatives in Jamaica are dominated by the public sector. The government of Jamaica, through its maritime agencies, the Port Authority of Jamaica and the Maritime Authority of Jamaica, is responsible for the regulation and development of Jamaica's main ports and shipping industry. The Caribbean Maritime Institute is a tertiary institution specializing in maritime education and training for the sub-sector. Apart from Kingston Wharves Ltd., private sector maritime involvement focuses on the operation of private user facilities called sufferance wharves or in the provision of support services to the ports and ships calling at our ports. Most of the sufferance wharves, with the exception of a few bauxite facilities, operate with outdated, inefficient equipment and inadequate and/or underutilized infrastructure. Inefficient ports, whether through outdated work practices, obsolete facilities or a combination of both, can stall economic development.

The demand for our maritime facilities is derived from the fact that Jamaica is strategically situated at the centre of an 800 million person market in the Western Hemisphere including the largest market in the world, the United States of America and enjoys comparative advantages in relation to the cost of labour. Jamaica possesses well developed maritime infrastructure with a total of 14 seaports including four (4) cruise ship facilities (see Tables 1-3). Jamaica accommodated 4,063 vessels in 2006, handling a record 31.6 million tons of cargo and 1.3 million passengers. The port of Kingston (Kingston Container Terminal, Kingston Wharves and the Kingston sufferance wharves) accounted for 70% of the vessels calls and 56% of tonnage handled. Major commodities handled at Jamaican ports include containerized general cargo, bauxite/ alumina, gypsum, limestone, bananas, sugar, crude oil, petroleum products and motor vehicles. There are 45 Jamaican flagged vessels totaling 200,000 gross tons trading worldwide.

How can we benchmark this performance? Reference is frequently made to the Republic of Singapore, which is regarded as the world's leading maritime centre. Singapore has the world's number one rated container port (PSA). It has not rested on its laurels and has carried that success overseas. The PSA operates 25 ports in 14 countries. In 2005 PSA handled 23.1 million TEU in Singapore and 18.9 million TEU overseas totaling 42 million TEU globally. 423 million tons of cargo pass through their port annually. Singapore supplies 23.5 million tons of bunkers per annum. There are 3200 ships under the Singapore flag totaling 33 million gross tons. The PSA alone generates US\$3.7 billion in revenue with a net profit of US\$1.058 billion in 2005.

Singapore's maritime success has been attributed to the growth in regional economies leading to increased trade and ship ownership in the Far East, the strong commitment and backing of the Singapore Government for the maritime services industry, strong partnership with the private sector, lower costs compared with those in other competing centres and a well-educated workforce.

Jamaica has most of the elements above-mentioned, however the commitment of the government to the development of the maritime services sector and the resources of the private sector needs to be harnessed and focused. The features that Jamaica possesses to enable the island to become a major logistics center for the region include:

- 1) The Port of Kingston, the largest seaport in the island comprised of
 - Kingston Container Terminal (KCT), a large and modern transshipment hub port rated 57th in the world in 2006
 - Kingston Wharves, rated the best multi-purpose port in the Caribbean
 - Petrojam Oil Refinery with a terminal for crude oil and other petroleum products.
 - Several other piers called sufferance wharves such as Texaco East Pier, Esso Bunkering pier, Shell Pier, Antilles Dock, Rapid Sheffield, Jamaica Gypsum Pier, Caribbean Cement Coal Pier and Jamaica Livestock wharf for handling liquid and dry bulk cargoes such as gypsum, cement, coal, crude oil & petroleum products, grain, fertilizer and general cargo
 - A bunkering station operated by Aegean Bunkering
 - An International Ship Registry (with Montego Bay used as the name of the port of registry)
- 2) Major port facilities at Montego Bay, Ocho Rios, Port Antonio, Port Esquivel, Port Kaiser, Port Rhoades, Rio Bueno and Rocky Point (see Appendix 7).

Whilst the expansion of the transshipment facilities in Kingston and the port facilities in Montego Bay, Ocho Rios and Port Antonio have received substantial support, it is envisioned that all existing and proposed maritime entities including the bulk and cruise terminals around the island realize their full potential and are able to exploit the opportunities that arise from the globalization of the world's economy. The island's seaports received a total of 3,767 vessel visits in 2005, up 5.4% from 3,574 visits in 2001, and handled a total of 27.6 million tonnes of cargo, of which 33% was represented by transshipment cargo at the KCT. The expansion of the KCT will develop a total capacity of 3.2 million Twenty-foot Equivalent Units (TEUs) by December 2007.

The Ministry of Housing, Transport, Water and Works has prepared a draft National Transport Policy, which outlines Government's vision for the shipping industry and provides the framework for the development of the sector. If the final policy document is to act as a roadmap for development, it must also benefit from the provisions for institutional strengthening and modernization of the public sector in areas that impact directly on the maritime sub-sector. Disadvantages faced by maritime entities in the formal business environment constrain development, including:

- Delays in the application process for land development approvals and environmental licenses and permits and the associated costs
- Complex and inefficient court system for resolution of commercial cases
- Problems in acquisition, titling and transfer of land
- Custom procedures for imported shipments, particularly capital equipment.
- Restrictive labour laws
- Inadequate land use planning and reservation for port expansions

The issue of incentives for both mainstream activities such as ports development and expansion, the registration of ships along with the need to simultaneously develop the allied services which complement the operation of terminal port facilities and the support services complementary to the registration of international and national ships should also be addressed.

Jamaica's Transport Policy, specifically as it relates to the maritime transport sub-sector, seeks to ensure sustainability and to protect any competitive advantage we may have at this time in the areas of transshipment, cruise shipping and bulk cargoes. Employment generation and gross revenues earned in the maritime services sub-sector in Jamaica is not insignificant, however the importance of the contribution of the sub-sector to national employment and the Gross Domestic Product in general has not been accurately assessed largely due to the absence of credible statistics, and leading to the general apathy of the population including the vital public service of Government. The development and implementation of this maritime development plan is guided by the above mentioned Transport Policy and is a critical staging point to maximize the opportunities in the sector.

The sustainable long-term development of the maritime transport sub-sector also will require addressing the environmental impacts of marine transport, including ship-borne waste, dumping, oil and exhaust pollution, potential introduction of aquatic invasive species through ship ballast water, and impact on coastal eco-systems from port facilities and shipping activities. While the maritime transport sub-sector has had a good track record with respect to oil spills with very few incidents recorded over the past decade, there is less data available on the performance in other areas such as ship-borne waste and introduction of aquatic invasive species. Jamaica is currently signatory to a number of relevant international agreements, including the International Convention for the Prevention of Pollution from Ships (MARPOL), Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention), and the Convention on Wetlands of International Importance (RAMSAR).

The tables below show different growth scenarios for cargo and cruise passengers. It demonstrates that if the economic growth targets required for achieving developed country status takes place in other sectors of the economy or external maritime initiatives (such as transshipment, home porting) result in the desired growth in the local economy the throughput at our ports would have increased substantially by 2030. However, for the targeted growth to materialize, the requisite maritime infrastructure would have to be established in a timely manner.

Figure 1: Projected Cargo Forecast

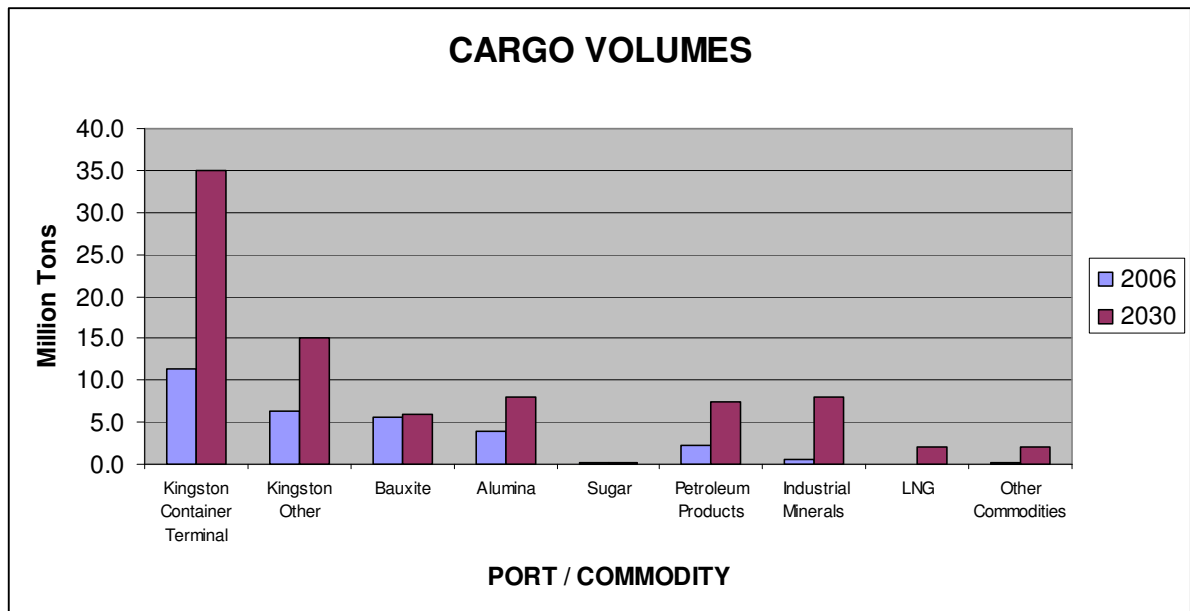
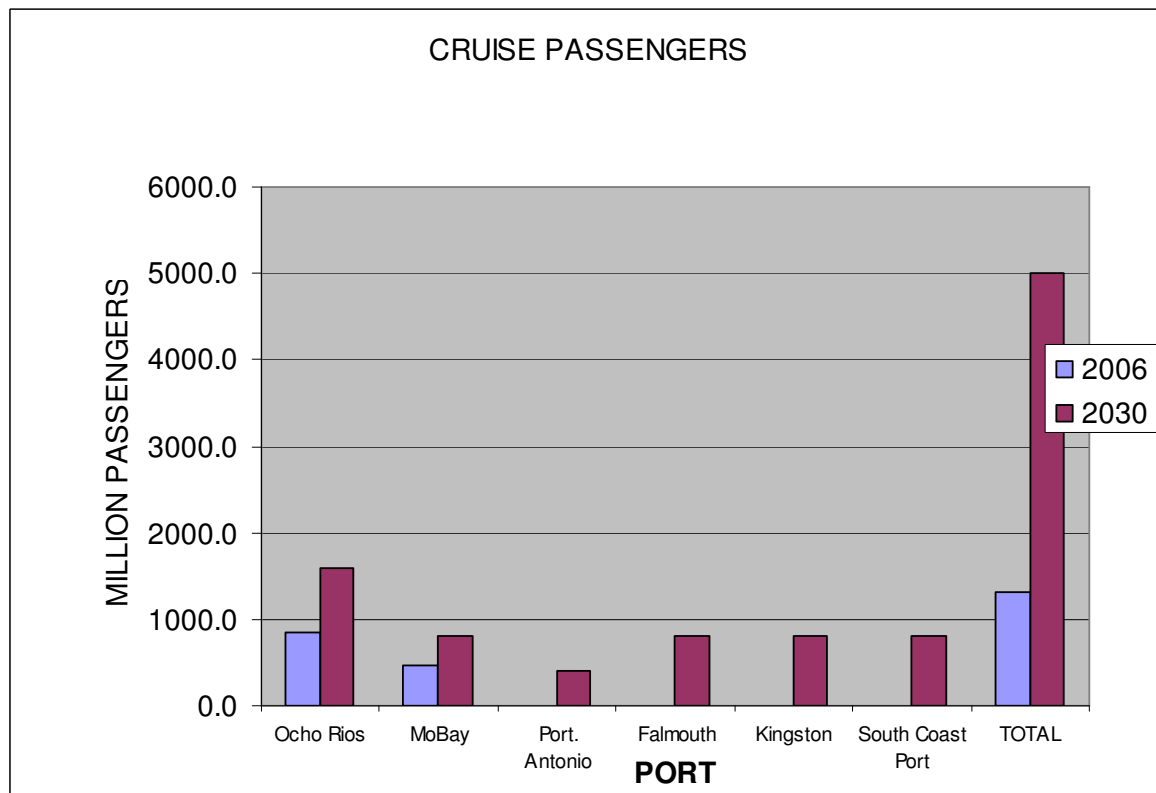


Figure 2: Projected Cruise Passenger Forecast



Issues and Challenges

1. Comprehensive Sub-Sector Development

Jamaica has made a major commitment to maritime transport including significant investment in transshipment infrastructure in the Port of Kingston. It will be important therefore to maximize the return on this investment by supporting port development with adequate training and ancillary services, diversification into dry and liquid bulk cargoes and exploration of options to develop linkages that can leverage the investment in port facilities such as through duty-free shopping, manufacturing and industrial zones.

Jamaica also can take advantage of the opportunities to be established as an integrated maritime centre including as a ship registry location and a crewing nation supplying trained maritime officers for the world shipping industry.

Jamaica will be able to realize its full potential as a major maritime transport centre based on addressing the main existing constraints in the domestic environment through:

- Adequate and modernized maritime legislation
- Improved bureaucracy and business environment
- Improved land use planning and development process
- Adequate reservation of lands for expansion of ports and supporting facilities
- Strengthened training and human resource development
- Increased integration with other economic industries and sub-sectors

2. Security and Environmental Issues

The other main issues that are relevant for the long-term development of the sub-sector are security and the environment. Security is a major concern for maritime transport, including the need to address the transnational threats of the drugs and arms trades, illegal migration and international terrorism. In addition the long-term development of the maritime transport sub-sector also will require addressing all the environmental impacts of marine transport in a sustainable manner.

3. SWOT Analysis

Transport is an essential component in the industrialization and sustainable development of nations. A standard tool of strategic analysis is SWOT analysis, which seeks to identify the main strengths, weaknesses, opportunities and threats for a given entity, ranging from a nation to a sector to an individual enterprise. For the transport sector in Jamaica the identification of strengths and weaknesses represents the internal assessment of the sector while the consideration of opportunities and threats represents the analysis of the external environment for the sector.

The SWOT analysis, along with the Situational Analysis presented above, forms the basis for identifying goals, objectives and strategies that may be employed to apply the strengths and address the weaknesses of the sector, and capitalize on the opportunities and mitigate the threats to the long-term development of the sector.

The SWOT analysis is categorized according to the following dimensions and presented in the Table below:

- Overall Transport Sector
- Land Transport
- Air Transport
- Maritime Transport

Overall Transport Sector

DIMENSION	INTERNAL ANALYSIS		EXTERNAL ANALYSIS	
	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
LOCATION	<ul style="list-style-type: none"> • Geographic location of Jamaica is asset for marine and air transport sub-sectors 	<ul style="list-style-type: none"> • Poor strategic route development plan to utilize Jamaica's location in the air sector 	<ul style="list-style-type: none"> • The potential for establishment of Jamaica as a major logistics junction for land, air and marine transport sub-sectors 	<ul style="list-style-type: none"> • Small islands are particularly vulnerable to climate change • Location in region prone to natural hazards including hurricanes
FACILITATION	<ul style="list-style-type: none"> • Jamaica is a world brand tourist and shipping location • Facilitation convention for maritime cargo to be signed 	<ul style="list-style-type: none"> • Highly bureaucratic systems • Poor quality service to transport sector by some public service entities • Complicated fee structure • Tedious immigration and customs procedures 	<ul style="list-style-type: none"> • Existence of best practices for transport sector in other countries that may be applied to Jamaica 	<ul style="list-style-type: none"> • Competition from other countries in the region in provision of transport services
ECONOMIC	<ul style="list-style-type: none"> • Performance and growth of maritime sub-sector 	<ul style="list-style-type: none"> • High costs of doing business in transport sector 	<ul style="list-style-type: none"> • Continued interest of private sector for investment in sector • Development of South-South trade 	<ul style="list-style-type: none"> • Rising capital and operating costs
MODERNIZATION	<ul style="list-style-type: none"> • All transport sub-sectors are have modernized elements 	<ul style="list-style-type: none"> • Lack of adequate investment 	<ul style="list-style-type: none"> • Availability of modern technology to establish a more efficient and financially beneficial sector 	<ul style="list-style-type: none"> • Rising capital and operating costs
FACILITIES	<ul style="list-style-type: none"> • The marine and air facilities are at globally high standards 	<ul style="list-style-type: none"> • Existing facilities do not have the needed capacity for projected growth 	<ul style="list-style-type: none"> • Potential growth of the sector provides basis for establishing responsive infrastructure 	<ul style="list-style-type: none"> • Competing destinations for investment in transport facilities
EDUCATION AND HUMAN RESOURCES	<ul style="list-style-type: none"> • Jamaica has a number of technical educational institutions 	<ul style="list-style-type: none"> • Relatively weak consultation culture • Lack of adequate multi-lingual skills 	<ul style="list-style-type: none"> • Examples of consultative culture and integrated approaches to human resource development 	<ul style="list-style-type: none"> • Brain drain of skilled persons including from transport sector

	including Caribbean Maritime Institute • Jamaica has the largest English speaking workforce in the region	• People are not being adequately trained for the job market in transport sector	which can be applied to Jamaica	
REGULATION	• Existence of established regulatory agencies	• Regulatory standards not good across all sectors	• Opportunity to integrate economic, social and environmental strategies through regulations	• Changes in international regulatory requirements

Land Transport

DIMENSION	INTERNAL ANALYSIS		EXTERNAL ANALYSIS	
	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
EXTENT OF USE	• Primary facilitator/provider of facilities for the movement of people, goods and services within Jamaica	• Insufficient opportunities for all modes of land transportation • Relatively low fuel efficiency of motor vehicles • Limited integrative planning for land transport • Growing traffic congestion particularly in urban areas	• Integration between modes of land transport – bus, rail, private cars • Potential to encourage greater public transport use	• Rising fuel prices • Competition between modes of transport
DENSITY OF ROAD NETWORK	• Extremely dense coverage and well defined paved road network	• Inflexibility of road design/layout • Inadequate road marking and signage	• Regenerative effects of the creation of roads on communities • Contribution of urban rejuvenation including in resort areas	• Existence of squatter settlements close to roads • Potential impact of natural hazards
RAIL	• Well-defined railway network	• Inadequate regulation of movements with respect to roads and railways • Deterioration of rail network	• Growth of key centers of production and habitation near to rail network	• Existence of squatter settlements close to railways • Ownership and affordability of rail infrastructure • Competing transport modes
ECONOMIC	• Successful introduction of toll road model	• Inadequate analyses with respect to the cost/benefits of land transportation	• High potential impact on economic growth and contribution to GDP • Road/Rail	• Social/Economic consequences of various alternatives • Potential impact of natural hazards

			infrastructure as a facilitator/ determinant of development	<ul style="list-style-type: none"> Limited provision of resources/financing for land transport infrastructure projects Costs associated with the delivery of land transport modes
REGULATION	<ul style="list-style-type: none"> Liberalized framework 	<ul style="list-style-type: none"> Lack of electronic surveillance devices and enabling legislation 	<ul style="list-style-type: none"> Existence of appropriate monitoring technology which can be adopted 	<ul style="list-style-type: none"> Broader lack of social discipline which affects manner in which road transport is used and maintained Lack of adequate enforcement support for road use and safety

Air Transport

DIMENSION	INTERNAL ANALYSIS		EXTERNAL ANALYSIS	
	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
STRATEGIC LOCATION	<ul style="list-style-type: none"> Jamaica is ideally located along strategic north-south shipping lanes and air routes with a major port facility and other potential port facilities on the south coast 	<ul style="list-style-type: none"> Inadequate strategic route development plan to utilize Jamaica's location Inadequate data to conduct proper planning for air transport 	<ul style="list-style-type: none"> The establishment of Jamaica as a major logistics hub for the hemisphere and a multimodal cargo sub-hub to Miami To develop strategic route development plan 	<ul style="list-style-type: none"> Small islands are particularly vulnerable to climate change Location in region prone to natural hazards including hurricanes
REGULATION	<ul style="list-style-type: none"> Jamaica's CAA is rated as Category 1 by the US FAA and conforms to all international standards 	<ul style="list-style-type: none"> Lack of integrated approach to planning and development Air traffic services are subject to frequent threats of industrial action No Security Regulated Agent 		<ul style="list-style-type: none"> Jamaica not maintaining the category 1 rating by the US FAA High crime rate Terrorism
FACILITATION	<ul style="list-style-type: none"> Jamaica is a world brand tourist and music destination promoting air travel to and from the island Scheduled flights to international hubs 	<ul style="list-style-type: none"> Some highly bureaucratic systems Poor quality service by some public service entities Lack of active involvement and commitment by some industry leaders Complicated fee structure Tedious immigration and customs procedures 	<ul style="list-style-type: none"> Potential for increased use of very light jet Global growth and expansion in adventure and nature tourism Gradual liberalization of open air policy/open skies. Potential for cruise ship homeporting contributing to combined sea and air 	<ul style="list-style-type: none"> Customs and Immigration Procedures not revised Maintenance of restricted open sky agreements Dominance of visitors from the US Possible downsizing of Air Jamaica affecting air transport capacity Regional crises to discourage tourism Mergers of US Legacy carriers

		<ul style="list-style-type: none"> • Restricted open skies policy • US passport requirements • No regional carrier • Declining domestic general aviation industry 	transport demand	<ul style="list-style-type: none"> • High cost of regional travel
ECONOMIC	<ul style="list-style-type: none"> • A strong financial sector with first world legislation 	<ul style="list-style-type: none"> • Jamaica suffers from low economies of scale in its aviation industry • High cost of doing business 	<ul style="list-style-type: none"> • The introduction of new technologies in reducing the cost of providing air navigation and air traffic services • Liberalization of the air transport sector for economic benefit • New income generating landside non-aeronautical developments • International aviation industry improving 	<ul style="list-style-type: none"> • Emissions Charges • Escalating cost of doing business in Jamaica • Incentives given to tourism sector compared with other sectors such as aviation.
EDUCATION AND HUMAN RESOURCES	<ul style="list-style-type: none"> • The Jamaica Defense Force provides a supply of highly qualified pilots, mechanics and other skills for the aviation industry • Jamaica has the largest English speaking workforce in the region 	<ul style="list-style-type: none"> • Poor consultation culture • Although there are a number of education and training institutions, curricula with regard to aviation are generally not present 	<ul style="list-style-type: none"> • To build consultative culture and integrated approach to development • Existing educational institutions as potential partners to design education for the future of the sector workforce 	<ul style="list-style-type: none"> • Lack of training for future development for airport hub
FACILITIES	<ul style="list-style-type: none"> • Jamaica has two ICAO Category D international airports • Airport infrastructure being expanded • Extensive road network linked to airports • Growth in hotel room stock generating increased arrivals 	<ul style="list-style-type: none"> • Existing airports do not have the capacity to extend runways to support long stage lengths • Peak hour congestion • Insufficient air cargo facilities • Limited domestic aerodrome infrastructure 	<ul style="list-style-type: none"> • New landside non-aeronautical developments • Potential for responsive infrastructure for international air traffic growth and future aircraft 	

Maritime Transport

DIMENSION	INTERNAL ANALYSIS		EXTERNAL ANALYSIS	
	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
CONTAINERS/ GENERALCARGO	<ul style="list-style-type: none"> Major transshipment hub with ongoing and planned expansion 	<ul style="list-style-type: none"> Port developments mainly funded by public sector investment 	<ul style="list-style-type: none"> Strong growth potential due to expansion of Panama Canal Growth in world trade 	<ul style="list-style-type: none"> Competing regional ports Limitations of facilitating bureaucracy
PASSENGERS	<ul style="list-style-type: none"> 3 established cruise passenger ports Ongoing port expansion and development 	<ul style="list-style-type: none"> Ocho Rios port inadequate Montego Bay and Port Antonio under capacity 	<ul style="list-style-type: none"> Continuing growth of Caribbean cruising and tourism markets 	<ul style="list-style-type: none"> Competing regional ports Harassment and crime Insufficient attractions
YACHTING	<ul style="list-style-type: none"> Location and facilities of marinas 	<ul style="list-style-type: none"> Distance from Eastern Caribbean yachting centres 	<ul style="list-style-type: none"> Opportunity to develop new nautical tourism centre in north-west Caribbean including potential opening of Cuba as destination 	<ul style="list-style-type: none"> Hurricanes and crime Lack of shore facilities
PETROLEUM	<ul style="list-style-type: none"> Local Refinery and Int'l marketing Co's 			<ul style="list-style-type: none"> Potential oil shortages and price increases
NATURAL GAS		<ul style="list-style-type: none"> No port facility 	<ul style="list-style-type: none"> Potential new energy source as catalyst for expansion in port and industrial park facilities 	<ul style="list-style-type: none"> Potential future shortages of natural gas supply
COAL	<ul style="list-style-type: none"> Use in cement plant 	<ul style="list-style-type: none"> Only cement pier handles commodity 	<ul style="list-style-type: none"> Coal fired energy plant for JPS hence greater imports of coal 	<ul style="list-style-type: none"> Emission controls
BAUXITE/ ALUMINA	<ul style="list-style-type: none"> Strong demand for aluminum 	<ul style="list-style-type: none"> Non-renewable resource 	<ul style="list-style-type: none"> Strong global demand for aluminium 	<ul style="list-style-type: none"> Non-availability of LNG for JAMALCO
INDUSTRIAL MINERALS	<ul style="list-style-type: none"> Vast domestic reserves 	<ul style="list-style-type: none"> Lack of export facilities 	<ul style="list-style-type: none"> Huge demand in US with multi-million ton export potential 	<ul style="list-style-type: none"> Competition from Mexico, Cuba
GYPSUM	<ul style="list-style-type: none"> Strong market for gypsum 	<ul style="list-style-type: none"> Out dated facility 		
CEMENT		<ul style="list-style-type: none"> Tariff on imported cement Unreliable supply Quality control 	<ul style="list-style-type: none"> Continued growth in local construction and export markets Plant expansion 	
FERTILIZER		<ul style="list-style-type: none"> Out dated facilities 	<ul style="list-style-type: none"> Staple for farming sector Expansion of farming sector leading to more imports and demand for port facilities 	<ul style="list-style-type: none"> Contraction of farming sector would reduce demand for fertilizer imports
GRAIN		<ul style="list-style-type: none"> Outdated facilities 	<ul style="list-style-type: none"> New facilities could benefit from economies of scale 	<ul style="list-style-type: none"> Shortages or higher grain prices

			<ul style="list-style-type: none"> • Staple for food and animal feed with growth in grain imports • Use in ethanol production 	
SUGAR		<ul style="list-style-type: none"> • Low production 	<ul style="list-style-type: none"> • Major export commodity • Cane replanting, production of ethanol feedstock, more exports 	<ul style="list-style-type: none"> • Potential impact of changes in EU market regime for sugar
BANANAS	<ul style="list-style-type: none"> • Exclusive export facility 	<ul style="list-style-type: none"> • Declining production 	<ul style="list-style-type: none"> • Alternate uses for Boundbrook Wharf 	<ul style="list-style-type: none"> • Containerization of commodity • Potential impact of changes in EU market regime for bananas
HUMAN RESOURCES	<ul style="list-style-type: none"> • Caribbean Maritime Institute (CMI) as IMO Accredited Institute 	<ul style="list-style-type: none"> • Underutilization of CMI facilities 	<ul style="list-style-type: none"> • Potential for technology transfer from leading nations • Demand for training other maritime personnel • Demand for seafarers 	<ul style="list-style-type: none"> • Brain drain leading to skills shortage for maritime transport
ANCILLARY SERVICES	<ul style="list-style-type: none"> • Bunkering, ship repair, legal, agency, surveying feeder service already in place 	<ul style="list-style-type: none"> • Lack of adequate ship finance, dry dock, ship management 	<ul style="list-style-type: none"> • Maritime cluster, employment creation 	<ul style="list-style-type: none"> • Relocation of shipping lines
SHIP REGISTRATION	<ul style="list-style-type: none"> • Established register with attractive incentives 	<ul style="list-style-type: none"> • Limited global presence 	<ul style="list-style-type: none"> • Potential for foreign exchange earnings 	<ul style="list-style-type: none"> • Competing registries
SHORTSEA SHIPPING			<ul style="list-style-type: none"> • Large volumes of cement, aggregates moved cross island which contributes to road damage • Absence of rail road as competing cargo transport mode 	<ul style="list-style-type: none"> • Influence of trucker lobby
SHIP OWNERSHIP	<ul style="list-style-type: none"> • Existence of ship registry 	<ul style="list-style-type: none"> • Lack of ship finance 	<ul style="list-style-type: none"> • Carriage of industrial minerals, LNG, bauxite 	<ul style="list-style-type: none"> • Competition from other jurisdictions
LEGAL AND INSTITUTIONAL FRAMEWORK	<ul style="list-style-type: none"> • The Shipping Act and other Acts • The maritime administrative institutions • Jamaica's participation in international conventions 	<ul style="list-style-type: none"> • Fragmented and lengthy bureaucratic and legal process • Conflict of interest between role of port regulator and operator 	<ul style="list-style-type: none"> • Existence of best practices in countries such as Singapore and New Zealand • Emerging market for carbon credits 	<ul style="list-style-type: none"> • Constraints to private sector involvement

POLLUTION PREVENTION	<ul style="list-style-type: none"> • Industry is highly regulated based on existing legislation 	<ul style="list-style-type: none"> • Lack of adequate legislation 	<ul style="list-style-type: none"> • Access to oil pollution fund • Requirements for reception facilities • Potential designation as special area under MARPOL 	<ul style="list-style-type: none"> • Impact of pollution incidents • Threat of ship-generated waste
ENVIRONMENT		<ul style="list-style-type: none"> • Slow approval process for environmental permits and licenses • Prohibitive fees and charges 		<ul style="list-style-type: none"> • Invasive Species • Spills and other accidents
SAFETY	<ul style="list-style-type: none"> • Port State Control inspections 	<ul style="list-style-type: none"> • Shortage of surveyors 	<ul style="list-style-type: none"> • Reduction of maritime casualties 	<ul style="list-style-type: none"> • Marine casualties
SECURITY	<ul style="list-style-type: none"> • ISPS Compliant 	<ul style="list-style-type: none"> • Absence of communications infrastructure 		<ul style="list-style-type: none"> • Potential impact of security incidents • Illegal narcotics

4. Vision Statements for Transport Sector

The long-term process of planning for the Transport Sector is guided by a Vision that describes a future for the sector that is desirable for its stakeholders and that can be achieved through their own efforts within a realistic time frame. The sector vision also contributes to the overall vision for Vision 2030 Jamaica to make “*Jamaica the place of choice to raise families, live, work and do business*”.

The Sector Plan contains an overall Vision for the Transport sector, as well as Visions for each of the main components of the sector, i.e. Land, Air and Maritime Transport. The visions as presented below are largely based on the National Transport Policy and also reflect the contributions of the stakeholders represented on the Transport Task Force during the Jamaica 2030 planning process.

4.1 Transport Sector Vision

The long-term development of the Transport Sector in Jamaica is guided by the following Vision taken from the National Transport Policy:

“Sustainable competitive safe accessible and environmentally friendly transport network providing world class Air Land Rail and Marine facilities contributing to a vibrant import, export and transshipment trade for Jamaica and the world”

However it should be noted that the Transport Task Force has suggested that this vision statement does not adequately reflect the importance of the domestic contribution of the transport sector (in addition to its cross-border contribution) or its role in the development of the social sectors and general economic activity beyond trade.

4.2 Sub-Sector Visions

The Transport Sector Plan also contains Visions for Land, Air and Maritime Transport in Jamaica as presented below

Land Transport

“A safe, efficient and sustainable system of land transport that facilitates economic and social development through the movement of people, goods and services throughout Jamaica”

(derived from the National Transport Policy 2007)

Air Transport

“An air transport system that facilitates Jamaica as a Strategic Logistics Junction”

(developed by the Air Transport Sub-Committee)

Maritime Transport

“A safe, secure, efficient and competitive maritime transport system facilitating a strategic logistics junction, offering services of the highest standards to the local and international communities in an environmentally responsible manner”

(derived from the National Transport Policy 2006)

4.3 Strategic Vision

The strategic vision for the transport sector in Jamaica has two (2) main components:

- i) Improvement of the domestic transport system for movement of persons, goods and services within and around Jamaica
- ii) Development of Jamaica as a regional, hemispheric and global transport and logistics hub or junction

The two components of the strategic vision are linked, as the effective operation of a major transport and logistics hub requires the support of smoothly functioning internal transport systems, while the capacities of a major transport and logistics hub greatly

expand the transport opportunities available to domestic economic and social sectors. The strategic framework presented below contains the main goals, objectives and strategies required to achieve both components of the strategic vision for the transport sector in Jamaica over the planning horizon to 2030.

Domestic Transport System

The first responsibility of the nation's transport system is to meet the needs of the economy and society for the movement of persons, goods and services within and around Jamaica. The land, air and maritime transport system can make a significant contribution to economic development by facilitating efficient transportation of goods and services, by reducing transport costs in production and distribution, and by expanding the geographic range of distribution routes and markets. The transport system also can greatly increase social well-being by improving access to social and recreational services, facilitating community development and contributing to the exercise of individual rights such as freedom of movement and association.

The strategic vision seeks to achieve dramatic improvement of the domestic transport system and increase its contribution to economic and social development. This is to be done by building on the existing strengths of the land, air and maritime transport systems, and by addressing the main constraints to long-term expansion, upgrading and maintenance. The strategic vision also includes enhancement of the environmental sustainability of the domestic transport system.

Transport and Logistics Hub

A major transport and logistics hub or junction represents a particularly high level of evolution of the transport sector for any country. Logistics refers to the process of managing the flow of goods, services, people, information, energy, and other resources through the entire value chain from source to end use. Transport may be taken to refer to the movement of passengers while logistics refers to the movement of freight. A major logistics hub is used to coordinate and connect international and domestic transport and communication routes and modes on a large scale with a wide range of support services, and typically would include the following:

- International airports including a major or secondary international airport hub
- Passenger, cargo and transshipment ports
- Inter-modal linkages between air, sea, road and rail transport
- Logistics centres
- Supporting services including banking, trade facilitation, international ship centre, cold storage and warehousing

An expanded discussion on the concept of a transport and logistics hub is included as Appendix 4.

The benefits to Jamaica of becoming a major transport and logistics hub will include:

- Increased generation of primary revenue streams from transport and related facilities and services
- Increased contribution of the transport sector to Gross Domestic Product (GDP) and employment
- Opportunities for development of related economic activities throughout the logistics value chain
- Enhanced integration of inter-modal linkages between land, air and maritime transport systems
- Integration of administration for strategic planning for land, air and maritime transport

Jamaica possesses the necessary elements to become a transport and logistics hub including:

- Strategic geographic location in proximity to the main East-West shipping lanes between the Far East, Europe and Eastern North America and trade and air routes to the Americas, Europe and the Caribbean
- Opportunity to capitalize on increased trade flows from the expansion of the Panama Canal
- Well-developed transport and telecommunications infrastructure, services and institutions with foundation for main elements of major logistics hub
- Large pool of trainable labour
- Some existing elements of required policy and regulatory framework
- Potential for development and expansion of supporting services

As Jamaica does not possess international land transport linkages the international aspects of its transport and logistics will depend on its maritime and air transport systems. A number of other countries and cities have achieved the status and benefits that come from having established a major logistics hub. These include Singapore, Dubai, Hong Kong, Miami and the Netherlands. Germany has capitalized on its central geographic location and advanced infrastructure to position itself as the logistics hub of Europe.¹⁶ However Jamaica will have to undertake implementation of a number of steps over the short, medium and long term to ensure its ability to establish a transport and logistics hub successfully. The importance of timely implementation is highlighted by the consideration that the Caribbean region will not be able to support more than one major logistics hub (in addition to Miami). The country that acts decisively to take advantage of the existing window of opportunity and establish first mover advantage over competing locations will benefit by capturing the lion's share of primary revenue streams from such a position, while other countries will fail to establish a major hub or will be restricted to secondary status and limited revenue streams.

¹⁶ It is estimated that logistics is the third largest sector in Germany, employing some 2.6 million persons with annual turnover of €166 billion representing approximately 7% of German gross domestic product (Invest in Germany GmbH 2005)

The strategic framework presented below contains the main goals, objectives and strategies required to create a major transport and logistics hub in Jamaica over the planning horizon to 2030. However, in order to pre-empt other regional competitors such as the Dominican Republic, Puerto Rico and Trinidad and Tobago, Jamaica also will have to take a number of other priority actions in the short term to secure the opportunity to establish a major logistics hub or junction successfully and fulfill the long-term potential of its transport sector.

5. Strategic Framework for the Transport Sector - Goals, Objectives and Strategies

The strategic framework for the Transport Sector presents the Goals, Objectives and Strategies for the two (2) main components of the Transport Sector in Jamaica over the timeframe covered by the Vision 2030 Jamaica National Development Plan.

5.1 Domestic Transport – Goals, Objectives and Strategies

Goals	Objectives	Strategies
Land Transport		
1.Roads Infrastructure and Transport Services: Properly constructed, maintained and environmentally sustainable road network and transport services that serve the economic and social needs of the country and which all users can use safely	1.1 A road system planned, constructed and maintained which serves the transport needs of people and industry on a sustainable basis	1.1.1 Improve and rationalize road transport infrastructure to meet the needs of key economic sectors on a sustainable basis
		1.1.2 Develop the institutional capacities and capabilities of the roads authorities
		1.1.3 Encourage and facilitate greater private sector participation in the construction, management and maintenance of the road network and provision of transport services
		1.1.4 Secure a sustainable means of funding road maintenance expenditures
		1.1.5 Produce and implement a formal hazard mitigation strategy and a disaster management contingency plan for the road transport sector
	1.2 Minimization of negative environmental and social impacts of road transport	1.2.1 Encourage the use of energy-efficient transport modes
		1.2.2 Encourage the use of renewable fuels in road transport
		1.2.3 Reduce pollution from vehicles
		1.2.4 Involve stakeholder consultation in planning and development of road transport system

2. Public Transport: A safe and efficient public transportation system for the movement of people, goods and services throughout Jamaica	2.1 A safe and accessible public bus service that meets sustainable transport needs	2.1.1 Develop sustainable funding mechanisms for the public transport system
		2.1.2 Promote the use of public transport over private car travel as far as possible
		2.1.3 Maintain viable fee structure for public bus service
		2.1.4 Develop and expand public bus system to meet sustainable transport needs
		2.1.5 Ensure access to public bus system for persons with physical disabilities and other vulnerable groups
		2.1.6 Ensure appropriate public transport system for students
	2.2 Extensive and convenient taxi service	2.2.1 Regulate the taxi industry to ensure safe and effective service
		2.2.2 Extend taxi routes and licensing to meet demand of traveling public
	2.3 Efficient movement of public transport	2.3.1 Ensure that proper facilities for buses and taxis, including the necessary provision of public transport road infrastructure such as bus stops, sheds, splash guards, passenger information signage, etc. are developed at urban interchange points and other strategic points throughout the island
3. Traffic Management: Improved management of traffic on the network to make the best use of the road system	3.1 Integrated planning approach for roads and development	3.1.1 Improve the inter-institutional arrangements for the construction and management of the main and parochial road networks
		3.1.2 Develop inter-modal traffic options
		3.1.3 Integrate sustainable transport needs into urban and regional planning
	3.2 Improved road safety standards for vehicles	3.2.1 Regulate vehicle weights to ensure better quality road condition and more efficient freight vehicles
		3.2.2 Regulate the operation of modified vehicles
		3.2.3 Ensure the operation of vehicle fitness testing stations
	3.3 Improved traffic management in urban	3.3.1 Institute appropriate traffic management measures to

	centres and throughout the country to improve the flow of traffic	reduce traffic congestion in critical areas 3.3.2 Provide on-street parking management 3.3.3 Encourage the construction and operation of off-street parking facilities 3.3.4 Provide terminal development and operations
4. Non-Motorized Transport: Sharing the road infrastructure between motorized and non-motorized users	4.1 Accommodation of animal drawn carts and other non-motorized equipment	4.1.1 Certify construction and maintenance of the carts
		4.1.2 Promote health and protection of the animal
		4.1.3 Minimize pollution by animals
	4.2 Promotion of the use of bicycles while ensuring the safety of driver and rider	4.2.1 Promote the knowledge of the highway code and of basic safety measures on the part of cyclists and motor vehicle drivers
		4.2.2 Develop road systems and infrastructure to facilitate use of bicycles
		4.2.3 Promote the use of bicycles as transport mode in appropriate areas
	4.3 Safe use of road infrastructure by pedestrians and bystanders	4.3.1 Design road infrastructure with adequate sidewalks, signage and other safety features for pedestrians
		4.3.2 Carry out road safety public education programmes
		4.3.3 Promote the pedestrian transport mode in appropriate areas
	4.4 Properly coordinated approach to ensure non-motorized transport of all types can safely use the country's roads	4.4.1 Ensure education and training, improved road designs, good traffic management techniques and better enforcement for non-motorized transport
Air Transport		
5. Air Transport: Expanded domestic air transport service	5.1 Ample domestic aerodromes	5.1.1 Encourage the opening of at least one aerodrome in each Parish
		5.1.2 Resolve restrictions imposed by the Ministry of National Security on operation of domestic aerodromes
		5.1.3 Provide incentives for the operation of domestic aerodromes
	5.2 Domestic air service providers	5.2.1 Promote growth of general aviation industry in Jamaica

		5.2.2 Promote intra-island air service
Maritime Transport		
6. Maritime Transport: Short sea shipping system for coastal transport	6.1 Short sea shipping system established and promoted for coastal transport of cargo and passengers	6.1.1 Provide the necessary incentives, both legislative and financial, for local ship owners to develop short sea shipping in Jamaica

5.2 Transport and Logistics Hub – Goals, Objectives and Strategies

Goals	Objectives	Strategies
1. Road Transport network and services to support major logistics hub	1.1 Primary and secondary road infrastructure and transport services to link logistics nodes and sources of factor supplies efficiently	1.1.1 Encourage private sector participation in the improvement of key arterial roads including on the South Coast
		1.1.2 Ensure the completion of proposed high speed cross island links
		1.1.3 Integrate road construction with planning for logistics hub and inter-modal linkages
		1.1.4 Encourage private sector provision of road transport and logistics services
2. Railway system in certain critical corridors for major logistics hub	2.1 Establishment of key rail linkages to logistics nodes	2.1.1 Plan and develop modern railway linkages along key routes to facilitate inter-modal transport between logistics nodes
		2.1.2 Encourage private sector participation in the provision of rail services
	2.2 Effective use of railway assets	2.2.1 Establish a railway safety regime to facilitate the efficient and effective operation of the railway
		2.2.2 Expand and develop the rail as part of the tourism product
		2.2.3 Capitalize on non-rail assets of railway system

3. Integrated and Dynamic Policy and Institutional Framework for major logistics hub	3.1 Mechanism for value chain integration	3.1.1 Establish Sector Consultation Group to get buy-in to sector policy, plans and decisions
		3.1.2 Create procedures for consultation and rule-making
		3.1.3 Ensure ongoing coordination of value chain activities in development and operation of logistics hub
	3.2 Framework for equality of opportunity, transparency and accountability in development and operation of logistics hub	3.2.1 Formulate policies and legislation where necessary to ensure equality of opportunity, transparency and accountability
		3.2.2 Ensure participation of all relevant sectors of the economy in development of framework for logistics hub
		3.2.3 Employ best practice to develop appropriate policy, legal, regulatory, institutional and investment framework for logistics hub including maritime transport
		3.2.4 Participate in international organizations and ensure compliance with relevant conventions, agreements and treaties
		3.2.5 Adopt best practices for operation of logistics hub
	3.3 International standards for safety, security and environmental sustainability	3.3.1 Incorporate international standards in local legislation and regulations
		3.3.2 Ensure effective mechanisms for monitoring and enforcement of standards
	3.4 National platform for logistics hub	3.4.1 Establish multimodal and multi-agency working group to facilitate efficient and competitive establishment and operation of logistics hub
		3.4.2 Establish lead organization to spearhead the development of Jamaica's logistics hub
4. Physical Infrastructure for major logistics hub	4.1 A major or secondary international airport hub	4.1.1 Develop an airport to become the most efficient cargo and passenger hub in the region
		4.1.2 Ensure strategic alliances for airport development and operation
		4.1.3 Sign Open Skies Agreements with as many States where feasible/possible

		4.1.4 Develop linkages with domestic air transport system
	4.2 Efficient cargo facilities	4.2.1 Implement Cargo Security Regime
		4.2.2 Promote Open Skies Cargo policy
		4.2.3 Provide incentives for the development of cargo facilities
	4.3 Inter-modal linkages	4.3.1 Develop rail and road links from seaports to hub airport and other airports
		4.3.2 Ensure appropriate customs and security regime to facilitate inter-modal transshipment of cargo
	4.4 Major logistics centers	4.4.1 Encourage establishment of logistics companies in Jamaica
		4.4.2 Encourage Fortune 2000 and multi-national companies to set up business in Jamaica
		4.4.3 Establish logistics centers to spearhead the development of Jamaica's logistics hub
	4.5 Related supporting facilities	4.5.1 Provide for the establishment of cold storage, warehousing, aircraft repair, hotels, housing, schools, commerce and all related facilities to support a logistics hub
		4.5.2 Develop industrial parks and free zones in conjunction with ports
5. Skilled Labour Force for major logistics hub	5.1 Qualified logistics value chain workers	5.1.1 Establish training institutes for value chain workers
		5.1.2 Train or import workers as needed to adequately staff key jobs in logistics hub
		5.1.3 Develop multi-lingual capacity among workers
	5.2 Conducive industrial climate	5.2.1 Involve trade unions in planning and development process
		5.2.2 Apply labour relations practices from other logistics hubs
6. Users and Markets for major logistics hub	6.1 Globally diverse customer base to cover value chain for major logistics hub	6.1.1 Market Jamaica's logistics facilities to strategic companies at regional, hemispheric and global levels
		6.1.2 Establish political links to serve Jamaica's business

		interests
		6.1.3 Encourage companies that provide value chain services to establish in Jamaica
		6.1.4 Develop linkages to enable domestic producers in Jamaica to use logistics facilities to enhance trade in goods and services
	6.2 Transshipment and distribution centers	6.2.1 Create distribution centers for transshipped and assembled goods
		6.2.2 Facilitate regional distribution and feeder air cargo network
		6.2.3 Facilitate mail hub in Jamaica
	6.3 Encouragement of private sector involvement	6.3.1 Facilitate initiatives from local and international private sector in provision of logistics facilities and services
6.3.2 Ensure international and bilateral agreements stimulate local business activities		
7. An internationally competitive, expanded, diversified, sustainable maritime transport sub-sector that contributes to economic growth in Jamaica and supports major logistics hub	7.1 Diversification of maritime developments to embrace bulk cargoes including dry bulk shipping and liquid bulk shipping	7.1.1 Encourage development of multi-use port facilities
		7.1.2 Facilitate imports of coal
		7.1.3 Facilitate exports of non-metallic minerals
		7.1.4 Facilitate import (or export) of LNG and other petroleum products
	7.2 Long-term growth and sustainability of maritime transport	7.2.1 Reserve suitable land areas for port expansion and development
		7.2.2 Encourage growth areas including transshipment, ship registration
		7.2.3 Develop human resources for maritime transport
		7.2.4 Exploit opportunities to become crewing nation due to worldwide shortage of ship's officers
		7.2.5 Provide technical capacity ashore for maritime industries
		7.2.6 Expand knowledge base of service providers, policy makers and regulators

		7.2.7 Formulate investment schemes specific to maritime sub-sector
		7.2.8 Facilitate indigenous technology development
		7.2.9 Foster technology transfer, knowledge transfer, R&D and development of skilled manpower in maritime activities to ensure greater Jamaican involvement in international shipping activities at sea and on shore
		7.2.10 Facilitate linkage activities e.g. bunkering, feeder services, logistics centers
	7.3 Creation of Maritime Center	7.3.1 Nurture ancillary and supporting services to main maritime activities to develop: <ul style="list-style-type: none"> • Ship Registry • Base for ship owners • Ship management companies • Maritime training • Ship Finance • Legal services • Ship Brokering • Marine Insurance • Bunkering • Ship Repair
		7.3.2 Facilitate home porting of cruise ships
	7.4 Development of key maritime infrastructure	7.4.1 Facilitate smooth development of strategic infrastructure for cargo and passengers in the Port of Kingston, Montego Bay, Ocho Rios, Port Antonio, Falmouth and Port Esquivel
		7.4.2 Establish infrastructure investment fund
	7.5 Growth of shipping fleet	7.5.1 Facilitate growth of Ship registry (incentives, establishment of international business companies, removal of taxation on seafarer income etc.)
		7.5.2 Expand presence of ship registry in main shipping centers

		globally
		7.5.3 Undertake integrated marketing of Registry with other shipping services e.g. ports, seafarer training, logistics providers
		7.5.4 Establish offices in key markets
		7.5.5 Encourage shipping and ship management companies to base their operations in Jamaica
		7.5.6 Expand use of Double Taxation Agreements
		7.5.7 Expand use of Bilateral and Regional Trade Agreements
		7.5.9 Establish favourable tax regime
		7.5.10 Review Shipping Incentives Act and Cargo Preference Act
		7.5.11 Encourage the financing of ships
		7.5.12 Facilitate ship finance funds similar to the German KG system
		7.5.13 Encourage the entrepreneurial exploits of trained maritime personnel
	7.6 A safe, secure and protected marine environment	7.6.1 Streamline environmental permitting process
		7.6.2 Pass marine pollution legislation to ensure the sustainable development of the shipping industry
		7.6.3 Establish integrated administrative and legal framework to carry out local and international maritime safety and security obligations of the Country
		7.6.4 Minimize negative impacts of maritime transport on the marine environment and coastal zone and users
		7.6.5 Mitigate maritime security threats
		7.6.6 Establish and maintain appropriate safety, security and environmental systems and standards at international levels

6. The Way Forward

The 1st draft of the Sector Plan for Transport will be presented to the Planning Institute of Jamaica upon completion, and then be presented to an external panel for review and comment. Comments from the PIOJ and the external reviewers will be reviewed and discussed by the Task Force and incorporated into the draft sector plan.

Some key steps in the plan development process after completion of the 1st draft of the Sector Plan include:

1. Undertake consultations of the first draft with key stakeholders to be identified by the PIOJ, the Chair and the Plan Advisory Group (PAG)
2. Development of an Action Plan – moving beyond initial strategies to the identification of actions, timelines, indicators and targets and responsibility centres
3. Application of T21¹⁷ - run scenarios with individual/combined policy variable changes with T21; identify consistencies, and commence preparation of Second Draft Sector Plans including long-term and short-term action plans; identify inconsistencies, which may be caused by: resource constraints and/or unexpected interactions between variables
4. Submission of second draft of the sector plan by October 30th, 2007

¹⁷ The application of T21 will be used where applicable and where the relevant scenarios and data exist.

7. Appendices

7.1 Appendix 1 – List of Task Force Members

Transport Task Force

Hon. Noel Hylton	Chairman, Port Authority of Jamaica
Mr. Ryan White	President, Jamaica Urban Transit Company (JUTC)
Mr. Keith Goodison	Managing Director, Transport Authority
Mr. Earl Richards	President, Airports Authority of Jamaica
Col. Torrance Lewis	Director General, Civil Aviation Authority (CAA)
Col. Oscar Derby	Deputy Director General-Regulatory Affairs, CAA
Dr. Favian Dixon	Research Officer, CAA
Mr. Paul Pennicook	Senior Vice-President, Marketing and Sales, Air Jamaica Limited
Mr. Joseph A. Matalon	Director, Computerised Systems Limited
Mr. Milton Hodlin	Chief Executive Officer, National Works Agency (NWA)
Ms. Edmarine Lowe-Ching	Manager of Special Projects, National Works Agency (NWA)
Mrs. Elsa-May Binns	Senior Director-Policy Planning & Evaluation, Ministry of Housing, Transport, Water and Works (MHTWW)
Mr. Ivan Anderson	Managing Director, National Road Operating and Construction Company (NROCC)
Mr. Grantley Stephenson	CEO, Shipping Association of Jamaica-Kingston Wharves Ltd.
Mr. Fritz Pinnock	Executive Director, Caribbean Maritime Institute
Rear Admiral Peter Brady	Director General, Maritime Authority of Jamaica (MAJ)
Mr. Eric Deans	Director of Shipping and Policy Research, MAJ
Major Richard Ridsen	Commanding Officer, 1 Engineer Regiment Jamaica Defense Force (JDF)
Mr. Lauriston Wilson	Director of Project Management and Technical Services, Ministry of Education and Youth
Mr. Maurice Charvis	Director of Analysis and Research, Office of Utilities Regulation (OUR)
Mr. Allan Blair	President, National Council of Taxi Association

Land Transport Sub-Committee

Mr. Milton Hodlin	Chief Executive Officer, National Works Agency
Mr. Andre Hylton	Andre's Auto Supplies
Mr. Paul Lalor	President, ICWI Group
Mr. Paul Morris	General Manager, KIA Motors
Ms. Jean Williams	General Manager Legal & Corporate Services, Transport Authority
Dr. Janine Dawkins	Director-Technical Services, Ministry of Housing, Transport, Water and Works
Ms. Valerie Simpson	Director of Policy, Ministry of Housing, Transport, & Works
Mr. David Minott	Director, Minott Services Ltd
Ms. Jackie Darwood	Manager-Service Planning & Network Development, Jamaica Urban Transit Company Limited
Mr. Patrick Rose	Director-Planning & Research, National Works Agency

Ms. Edmarine Lowe-Ching	Manager of Special Projects, National Works Agency
Dr. Leary Myers	Chief Executive Officer, National Environment & Planning Agency (NEPA)
Mr. Norman Shand	City Engineer, Kingston & St. Andrew Corporation
Dr. Parris Lyew-Ayee	Director- Mona GeoInformatics
Mr. Ivan Anderson	Managing Director, NROCC
Mr. E.G. Hunter	President, National Water Commission
Mr. Desmond Hall	Programme Director, Urban and Regional Planning Programme
Ms. Dorothea Clarke	Transport Planner, MHTWW
Ms. Joan Wynter	Senior Policy Officer, MHTWW
Dr. Favian Dixon	Research Officer, CAA
SSP. Ealan Powell	Commander, Police Traffic Division, Jamaica Constabulary Force

Air Transport Sub-Committee

Col. Torrance Lewis	Director General, Civil Aviation Authority (CAA)
Lt. Col. Oscar Derby	Deputy Director General-Regulatory Affairs, CAA
Dr. Favian Dixon	Research Officer, CAA
Mrs. Jacqueline Fairclough	Director-Economics Regulation, CAA
Mr. Paul Pennicook	Senior Vice President-Sales and Marketing, Air Jamaica
Col. Anthony Stern	Secretary General, Jamaican Aviators, Operators, and Pilots Association (JAOPA)
Mr. Chris Reed	Managing Director, Airways International Limited/Air Pack Express
Ms. Valerie Simpson	Director of Policy, Ministry of Housing, Transport, Water and Works (MHTWW)

Maritime Transport Sub-Committee

Rear Admiral Peter Brady	Director General, Maritime Authority of Jamaica (MAJ)
Hon. Noel Hylton	Chairman, Port Authority of Jamaica (PAJ)
Capt. Hopeton Delisser	Vice President for Harbour and Services, PAJ
Mr. William Tatham	Vice President-Cruise Shipping and Marina Services, PAJ
Mr. Fritz Pinnock	Executive Director, Caribbean Maritime Institute
Mr. Eric Deans	Director of Shipping and Policy Research, MAJ
Mr. Grantley Stephenson	CEO, Shipping Association of Jamaica-Kingston Wharves Limited
Dr. Phillip Baker	Director, Economics and Projects, Jamaica Bauxite Institute
Mr. Winston Watson	Managing Director, Petrojam Limited
Mr. Charles Johnston	Chairman, Jamaica Freight and Shipping
Mr. Chris Bicknell	CEO/Financial Manager, Tankweld Metals
Ms. Belinda Ward	AVP Government Relations, Port Authority of Jamaica
Mr. David Moss	Managing Director, Assurance Brokers Ja. Ltd.
Mrs. Elsa-May Binns	Senior Director-Policy Planning & Evaluation, Ministry of Housing, Transport, Water and Works (MHTWW)

7.2 Appendix 2 – Listing of Task Force Meetings

Transport Task Force:

- April 12th, 2007
- April 30th, 2007 (with sub-committee members)
- May 14th, 2007
- May 30th, 2007
- June 12th, 2007
- June 22nd, 2007

Land Transport Sub-Committee:

- May 8th, 2007
- May 15th, 2007
- June 5th, 2007
- July 4th, 2007

Air Transport Sub-Committee:

- May 25th, 2007
- July 18th, 2007

Maritime Transport Sub-Committee:

- May 4th, 2007
- May 21st, 2007
- June 8th, 2007
- July 5th, 2007

7.3 Appendix 3 – List of Acronyms

AAJ	Airports Authority of Jamaica
AEROTEL	Aeronautical Telecommunications Limited
ARIP	Airport Reform and Improvement Programme
CAA	Civil Aviation Authority
CMI	Caribbean Maritime Institute
GDP	Gross Domestic Product
GOJ	Government of Jamaica
ICAO	International Civil Aviation Organization
ITA	Island Traffic Authority
JDF	Jamaica Defense Force
JUTC	Jamaica Urban Transit Company
KMTR	Kingston Metropolitan Region
MAJ	Maritime Authority of Jamaica
MBM	Montego Bay Metro Limited
MHTWW	Ministry of Housing, Transport, Water and Works
MITEC	Ministry of Industry, Technology, Energy and Commerce
MMTH	Metropolitan Management Transport Holdings Ltd.

NEPA	National Environment and Planning Agency
NMIA	Norman Manley International Airport
NROCC	National Road Operating and Construction Company
NWA	National Works Agency
OUR	Office of Utilities Regulation
PAJ	Port Authority of Jamaica
PCJ	Petroleum Corporation of Jamaica
PIOJ	Planning Institute of Jamaica
RMFB	Road Maintenance Fund Board
SIA	Sangster International Airport
TA	Transport Authority
UDC	Urban Development Corporation
WTO	World Trade Organization

7.4 Appendix 4 – Definition of Transport and Logistics Hub

It is felt that Jamaica's geographic position along major trade routes makes the establishment of logistics services and inter-modal transport an attractive strategy to pursue. This is so in the case of the Ports Authority of Jamaica. Jamaica Trade and Invest is also promoting the island as a future logistics hub similar to Dubai.

What though, is a logistics hub?

Logistics is the art and science of managing and controlling the flow of goods, energy, information and other resources including humans. The term logistics has evolved from military planning for movement and supply, but is now widely accepted to include activities like purchasing, transport, warehousing, organizing and planning of these activities. Transport may be taken to refer to the movement of passengers while logistics refers to the movement of freight.

A major transport and logistics hub therefore may be considered in the Jamaican context as:

A system of joining all related economic activities that support management of the movement and processing of passengers, goods, energy, information, finances and other resources, to, within and from Jamaica, while contributing significantly to the economy.

Considering the potential of Jamaica, this chosen strategy emphasizing a hub and an economic center of activity is a logical choice which coincides with its future plans for long-term economic development. A related concept called "Logistics Junction" refers to an open economy in which logistics services are dominant and well balanced with other economic activities and contribute significantly to the economy as a whole.

Another related concept is Supply Chain Management (SCM), which deals with the planning and execution issues involved in managing a supply chain, with a range of components including: Demand planning; Order promising; Strategic network optimization; Production and distribution planning; Production scheduling; Transportation planning; Transportation execution; Tracking and Measuring; evaluation and reporting.

Logistics hubs may be established at strategic points where major trade routes and transport modes intersect. A trade route is the sequence of pathways and stopping places used for the

commercial transport of cargo. Trade routes can be land or water-based. Transport modes are combinations of networks, vehicles, and operations, and include walking, the road transport system, rail transport, ship transport and modern aviation.

In order to know what environment needs to be enabled by the Government it is necessary to consider some of the activities that can be expected to be concentrated in a Logistics Hub. One should expect to see major manufacturing and distribution companies with offices and or warehousing facilities as well as a plethora of Logistics Companies transacting trade related deals globally for goods and services that are either manufactured in Jamaica or elsewhere, assembled in Jamaica or elsewhere, transiting through Jamaican ports or not, warehoused in Jamaica or elsewhere; E-commerce; Value-added Logistics, Import/Export-related activity; Financial activities; Free Zone activity; Cargo hub activity; Mail hub activity; Passenger hub activity; Inter-modal transfers of passengers, cargo and mail; Education and Training; Cargo security activities; Inter-modal transport and transshipment of goods. Logistics value-added activity also may include such things as: Assembling; Processing; Packaging; Labeling; Other activities needed to get goods to the consumer in the state for final use or consumption.

The environment for logistics activities is created primarily by providing a business and social environment that attracts the firms that engage in the abovementioned activities. It is necessary to have a work force, imported or indigenous, that can fill the jobs related to the many economic activities that take place in the logistics-dominant environment. Education and training as well as infrastructure and social development and enabling legislation are some of the first-order activities for the Government to undertake in setting the stage for a future transport and logistics hub.

7.5 Appendix 5 – References

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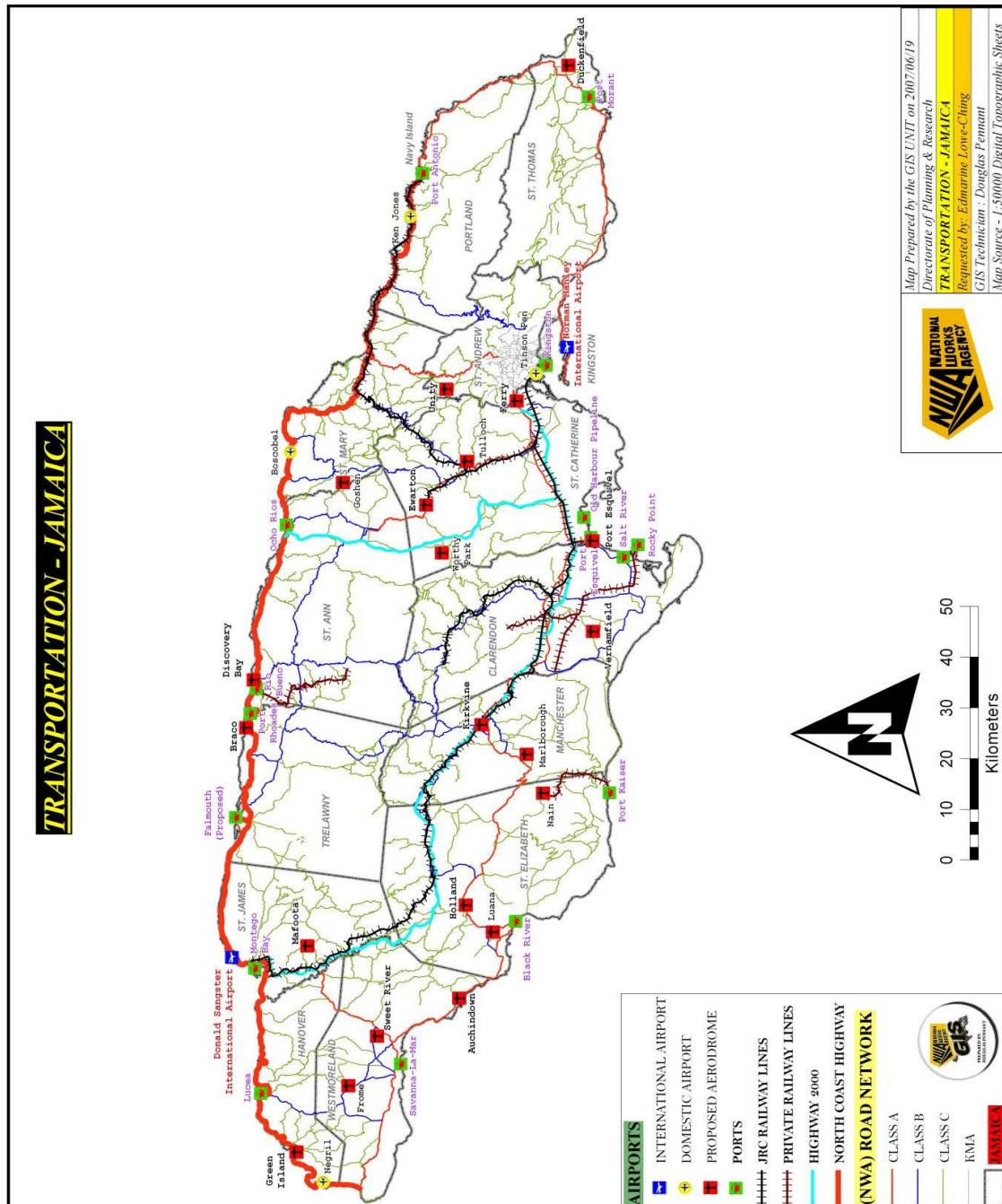
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7.6 Appendix 6 – Figure 1: Map of Transport Sector



7.7 Appendix 7 – Tables 1-3

Table 1: Public Wharves: Port Profile 2004-2005

Table 2: Kingston Sufferance Wharves and Out Ports: Port Profile 2004-2005

Table 3: Maritime Infrastructure Developments

Table 1: Public Wharves : Port Profile 2004-2005

PORT/ FACILITY	OPERATOR	FACILITY	HANDLING EQUIPMENT	CARGO
Kingston Container Terminal	APM Terminals Jamaica Ltd.	6 Lateral Berths	14 Ship-to-Shore Gantry Cranes 5 Post Panamax Ship-to- Shore Cranes 8 Super Post Panamax Cranes 12 Mobile RTG Granes 50 Straddle Carriers 82 Hectares of Paved Terminal Yard	Containerized General Cargo
Kingston Wharves Ltd.	Kingston Wharves Ltd.	9 Lateral Berths & 1 Ro/Ro Ramp	3 Gottwald 100 ton Cranes	Containerized General Cargo, Bulk and Breakbulk
Port of Montego Bay	Port Handlers Ltd.	2 Cruise Ship Berths 1 Ro/Ro Ramp 3 General Cargo Berths	Shore Cranes Fork Trucks	Containerized General Cargo and Breakbulk, Cruise passengers

Source: Ministry of Transport and Works: Annual Transport Statistics Report: Jamaica in Figures 2004-2005

Table 2: Kingston Sufferance Wharves and Out Ports: Port Profile 2004-2005

PORT/FACILITY	OPERATOR	DOCKING FACILITY TYPE	STRUCTURE TYPE	HANDLING EQUIPMENT	PRINCIPAL ACTIVITY	LIMITATION OF USE
Port of Ocho Rios (Cruise Ship Piers 1 & 2)	Lannaman & Morris (Port Authority of Jamaica)	Two L-Shaped Piers	Concrete / Steel	Walk On / Walk off	Cruise Passengers	
Port of Ocho Rios (Reynolds Pier)	Jamaica Bauxite Mining Ltd.	Alongside	Concrete / Steel		Sugar, Bauxite, Bulk Cargo, Cruise Passengers	Loading of sugar, Bauxite, Bulk Cargo, and handling of Cruise Passengers
Old Harbour Pipeline	North American Energy Services (Ja.) Ltd. [Jamaica Energy Partners Ltd.		Pipeline	Pipeline	Heavy Fuel oil	Renewable one year permit
Port Antonio (Boundbrook)	Jamaica Livestock Association Ltd.	Alongside	Concrete & Steel	Conveyor Belt	Banana	Export of Fresh Fruit
Port Antonio (Ken Wright Pier)	Petroleum Corporation of Jamaica	'T' – Type Pier	Concrete & Steel	Walk On / Walk off	Cruise Passengers	
Port Esquivel	WINDALCO	Finger Pier & Alongside	Concrete & Steel	Crane, Conveyor Belt and Pipelines	Alumina, Oil, Caustic Soda, Molasses and General Cargo	Loading alumina; unloading Soya beans, grain, rice, fuel, molasses, sulphuric acid, fuel, oil, and raw materials for plant
Port of Lucea	Shell Company WI Ltd. (JF Mills) (Jamaica Ethanol Processing)	'T' Finger Type Pier		Ship's Gear	Molasses, Bulk Rum	Loading of molasses
Port Kaiser	Alumina Partners of Jamaica	Finger Pier	Steel	Conveyor Belt-Air Slide System	Alumina	Loading of bauxite and alumina; loading and unloading of supplies, equipment and machinery in connection with the company's operations.
Port Rhoades	Newport Mills Limited	Alongside	Concrete & Steel	Conveyor belt, Crane	Bauxite, Containerized cargo and Fuel Marine Diesel	Loading of bauxite and alumina; loading and unloading of supplies, equipment and machinery in connection with the company's operations.
Rio Bueno	[TankWeld]	L-Type pier	Concrete & Steel	Conveyor Belt	Corn, Soya	Loading and unloading of Crude asphalt, empty drums and asphaltic emulsions; unloading grain
Rocky Point	JAMALCO	'T', 'L' (Dolphins)	Concrete & Steel	Conveyor Belt	Alumina, Fuel Oil, Caustic Soda, & Heavy Duty Equipment	Loading of Sugar, molasses and alumina; unloading equipment, machinery and supplies

Source: Ministry of Transport and Works: Annual Transport Statistics Report: Jamaica in Figures 2004-2005

Table 3: Maritime Infrastructure Developments

Programme	Description	Timeline	Entity Responsible	Remarks
Kingston Container Terminal Development	<p>Phase 5 - procurement of equipment and civil works to increase terminal capacity to</p> <ul style="list-style-type: none"> Phase 5A- 2,500,000 TEUs. <p>Phase 5B- 3,200,000 TEUs</p> <p>Projected cost: US\$103,400,000</p> <p>Phase 6 - N/A</p> <p>Phase 7 - N/A</p>	April 2007 - October 2009	Port Authority of Jamaica	Project is underway
Kingston Wharves Infrastructure Development	<p>Rebuilding and expansion of Berths 8&9</p> <p>Projected Cost : US\$26,600,000</p>	May 2006 – August 2007	Kingston Wharves Ltd.	Project is underway
Petrojam	Rehabilitation of Esso Bunkering Terminal	2010	Petrojam	
Ocho Rios Cruise Ship Terminal Development	<p>Expansion to increase cruise ship-berthing capacity to four 4th generation vessels (31 1m).</p> <p>Projected cost: US\$43,000,000</p>	April 2008 - October 2010	Port Authority of Jamaica	Project is at feasibility stage

Programme	Description	Timeline	Entity Responsible	Remarks
Montego Bay Cruise Ship Terminal Development	Development to increase the cruise ship berthing capacity and the terminal building to accommodate two 4 th generation vessels and to facilitate home porting. Projected cost: US\$67,000,000	November 2007 – February 2009	Port Authority of Jamaica	Project is at design stage
Port of Lucea	Development of a cruise ship terminal	CANCELLED	Port Authority of Jamaica	Project is not being undertaken due to construction of a new hotel at the site for which this development was being planned.
Port of Falmouth	Development of a cruise ship terminal		Port Authority of Jamaica	Project is at feasibility stage.
Port Antonio	Development of a cruise ship terminal in East Harbour		Port Authority of Jamaica	Project is at feasibility stage.
Kingston Cruise Ship Terminal	Development of a cruise ship terminal in Kingston or Port Royal		Port Authority of Jamaica	Project is at feasibility stage.
Salt River	Development of aggregate export facility		(Rinker)	
Esquivel Development Project	Multi-port facility including LNG Terminal, bulk minerals, general cargo and Industrial	10 year	(Esquivel Development Company Ltd.)	US\$2.3 Billion
Rio Bueno	Steel, Lumber and Cement facility Cost : US\$ 18.6 Million		TankWeld	Project is underway