FINAL DRAFT

VISION 2030 JAMAICA

TRANSPORT

SECTOR PLAN 2009 - 2030

Transport Task Force

September 2009

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1. Introduction

1.1 Vision 2030 Jamaica – National Development Plan

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 would place Jamaica in a position to achieve developed country status by 2030. Development of the Plan began in January 2007 and thirty-one 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. Following review and stakeholder consultation, and preparation of an action plan for the sector, the Transport Sector Plan for Vision 2030 Jamaica was completed in 2009.

This Sector Plan for Transport is one of the strategic priority areas of the ***Vision 2030 Jamaica - National Development Plan***. It is one of thirty-one sector plans that form the foundation for Vision 2030 Jamaica – a 21-year plan based on a fundamental vision to make *'Jamaica the place of choice to live, work, raise families, and do business,'* and on guiding principles which put the Jamaican people at the centre of the nation's transformation.

Extensive and high-quality infrastructure is considered a pillar of international competitiveness that: enables the efficient functioning of markets for goods, services and labour; increases the productivity of economic processes; and improves decision-making by entrepreneurs and other economic actors. The Transport Sector Plan for Vision 2030 Jamaica will ensure the development of world-class transport infrastructure and services that contribute to the competitiveness of our producers and improved quality of life for our people.

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

This sector plan was developed using the following processes:

- Participation of Task Force Members[1] through Task Force Meetings[2] that were used to solicit ideas and views on transport issues and challenges facing Jamaica, 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
- Development of a detailed Action Plan with responsible agencies and time-frames for implementation

This Sector Plan for Transport is structured in the following main chapters:

- Situational Analysis
- SWOT Analysis
- Strategic Vision and Planning Framework
- Implementation, Monitoring & Evaluation Framework
- Action Plan

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; and
- in many developed countries, transportation accounts for between 6% and 12% of GDP[3].

An efficient and effective transport sector is indispensable to economic progress. Other sectors such as mining, manufacturing, trade, tourism and agriculture, which are critical

[1] See Appendix 1 for List of Members of the Transport Task Force and Sub-Committees.
[2] See Appendix 2 for Listing of Task Force Meetings.
[3] Rodrigue, Comtois and Slack (2006).

to a nation's growth and development, depend upon transportation. Without adequate infrastructure to facilitate the movement of people and goods, economic and social benefits will be limited.

Jamaica's 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 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 2004-2008, Transport, Storage and Communication (TS&C) contributed on average 11.5% to Jamaica's Gross Domestic Product (GDP)[5]. In 2008, Transport (road, railway, water and air including services allied to transport) and Storage contributed 5.6% 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 37% of the total quantity of petroleum consumption in 2008.[7]

Investment in infrastructure has been shown to have a significant effect on economic growth. The results of the Threshold 21 Jamaica (T21 Jamaica) model indicate that improvement in the physical economic infrastructure (such as roads, air and sea ports, and telecommunications networks) usually has higher payoffs in the form of higher rates of economic growth than equivalent investment in health and education over the time horizon to 2030. This is because such improvements have a faster impact on total factor productivity.

T21 JAMAICA MODEL SIMULATION

A model simulation was conducted to quantify the effect of shifting public resources toward infrastructure. The exercise suggests that a 10% proportional transfer of Government's discretionary budget in favour of infrastructure raises GDP per capita in 2030 by 20.6 %, while drawing from General Services to effect the transfer yields a 24.7 % gain.

The returns to investment in physical infrastructure tend to be high in countries at Jamaica's income level, especially considering the relative underinvestment in physical infrastructure in recent decades. These higher growth rates eventually increase the size of the economy and the levels of funding available for other services such as health and education over the medium and long term. High-quality infrastructure contributes to social and environmental goals, by improving access to public services, reducing negative environmental impacts and supporting the sustainable use of natural resources.

[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] Based on Contribution to Total Goods and Services Production in Basic Values at constant (2003) prices (PIOJ).

[6] Based on Contribution to Total Goods and Services Production in Basic Values at constant (2003) prices (PIOJ).

[7] Economic and Social Survey of Jamaica, 2008.

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 3 – Appendix 6). The Ministry of Transport and Works (MTW) has prepared a draft National Transport Policy to provide a framework for the future development of the sector.[8]

The planning for Vision 2030 Jamaica has taken place within the context of a global economic recession which commenced in US credit markets in 2007, and spread in 2008-2009 to affect the economies of developed and developing countries alike. The consequences for Jamaica are likely to include: reduced flows of direct investment; greater difficulty in sourcing financing from global capital markets; reduction in demand for Jamaica's exports; and a downturn in tourism earnings. The impact will limit the prospects for growth in our economy, including transport services, and reduce funds available for spending on social services in the initial years of implementation of the National Development Plan, until recovery takes place.

2.1 Land Transport Sub-Sector – Situational Analysis

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

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

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 MTW[9] 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 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.

[9] See previous footnote

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 island-wide 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 and Fisheries 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 a 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 order 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 was completed in 2007, and Segment 3 from Ocho Rios to Fair Prospect commenced in 2005 and is scheduled for completion in 2009. During 2008 work on Segment 3 continued at slower pace. In July 2008 construction work on Segment 2A extending from Montego Bay to Greenside was completed. This project included

dualisation of portions of the road between Montego Bay and Rose Hall into a four-lane carriageway. The project also involved widening and re-alignment of the corridor, construction of two underpasses, access roads from the major roadway, bus bay junctions, improved drainage and other safety features.

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. Work on the Mt. Rosser to Moneague section of the North-South link of the Highway started in 2007 and is slated to be completed in 2010. The Sandy Bay to Four Paths segment of the Sandy Bay to Williamsfield leg will commence in the second quarter of 2009. Completion of the entire project will be based on determination of economic feasibility following completion of Phase 1.

The Road Maintenance Fund (RMF) 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. In 2008, the RMF disbursed over $500 million to repair main roads islandwide. The Fund was used to repair roads damaged by Hurricane Dean in 2007 and Tropical Storm Gustav in 2008. The RMF also contributed $180 million to the GOJ/IDB National Road Services Improvement Programme[10] (NRSIP).

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 Progamme (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 also has 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

[10] NRSIP is geared towards the maintenance of main roads in five selected parishes and is scheduled to end in November 2009.

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 demands on the main road network.

The Half Way Tree Transportation Centre was opened in January 2008. The Centre is a major transport infrastructure project designed as a modern facility with two levels – one level for arriving buses and the other for departing buses. Ultimately it will provide a single-terminus area for all buses traversing the Half-Way-Tree area. Adequate facilities are in place for the commuting public, including a commercial area with a number of shops and kiosks and offices for the JUTC and TA.

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 rationalization 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 2008 there were a total of 1,648 buses licensed to operate in or from the KMTR with a total seating capacity of 39,457. In addition the Montego Bay Metro provides service on three routes with eight buses. There were a total of 19,075 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.[11]

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

[11] PIOJ and STATIN (2007) *Residential Consumer End Use Survey.*

(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 and thirty five kilometers (335km) across the island, traversing nine (9) of the fourteen (14) parishes of Jamaica. 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 not been 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 $4.2 billion in 2008, compared with $5.2 billion in 2007.[12] 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.

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 (RMF) that is currently targeted at road maintenance projects on main roads also should be reviewed, particularly given the cost-effectiveness

[12] ESSJ 2008.

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 also will be necessary 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.

The Government in 2009 introduced a special consumption tax on fuel of $8.75 per litre. Portions of this tax will go to the Road Maintenance Fund over the next three years. RMF will receive 20% of the tax for fiscal year 09/10, and 35% and 50% for FY 10/11 and FY 11/12, respectively.

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 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 13,142 for 2008.[13] The Road Safety Unit of the MTW is involved in Public Information Campaigns and an Education in Schools Programme to promote safe use of roads island-wide. 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.

6 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 2007/2008 was 420,265, an increase of 11.0% compared with FY 2006/2007. 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.

7 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.

8 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 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,

[13] ESSJ 2001-2008

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.

9 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.[14] 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 as a national 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.[15] 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 International Civil Aviation Organization (ICAO), the United Nations body responsible for civil aviation.

The 1974 enactment of the Airports Authority Act transferred to the Airports Authority of Jamaica (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 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

[14] See for example http://www.mfe.govt.nz/issues/transport/sustainable/.

[15] 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.*

Privatization Agreement between AAJ and MBJ Airports Limited, the new operator of SIA, became effective on April 12, 2003, under which the new operator assumed full responsibility for the daily management and capital development of the airport facility. The SIA is leased to MBJ 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; and the airlines and users of Jamaica's airspace, the Kingston Flight Information Region (FIR).

Extensive developments have occurred at the island's aerodromes. The international airports (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.

The Norman Manley International Airport Capital Development Programme comprises Phases 1A, 1B and 2. Phase 1A, which was completed and opened in September 2008, included the new departure building at the eastern end of the present Terminal which was integrated with the existing Ticketing Concourse. Work on Phase 1B is ongoing with completion date set for 2012. Construction on Phase 2 is scheduled for 2013 – 2023. The second and final phase of the Sangster International Airport Expansion Project is expected to be completed by mid-2009 and involves extensive renovation of the existing terminal.

Activities at the international airports are further reflected in the comparisons over the period between 2004 and 2008 financial years, which highlighted significant changes in areas such as passenger movements. Passenger movement at the NMIA in 2004 was 1,454,668 and this increased to 1,710,155 in 2008, an increase of 17.6%. SIA recorded a smaller increase of 1.9% for the same period, as passenger movement increased from 3,323,680 in 2004 to 3,385,207 in 2008.[16]

The domestic aerodromes also experienced improvement works in recent years. 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. Work commenced on extending the runway at the Boscobel Aerodrome by approximately 550 metres and upgrading the terminal and air infrastructure, with completion slated for 2010. 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); and
- 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.

[16] Source: AAJ.

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 (5.1 million in 2008)
- 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 government is pursing options for privatization of Air Jamaica based on rationalization of its operations.

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 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 Vernamfield, 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 include the potential increases in the cost of air travel through mechanisms such as taxation of jet fuel.[17]

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.

[17] As is presently done in the Netherlands.

Jamaica possesses the necessary prerequisites to have an even stronger and sustainable maritime sub-sector over the long term (See Appendix 7: Tables 4-6). The challenge, however, is to replicate the formula for creating investment grade projects for containerized cargo and cruise ship passengers facilities into the other areas such as dry and liquid bulk cargoes.

Table 6 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 4-6), and accommodated 3,586 vessels in 2008, handling 30.3 million tons of cargo and 1.09 million passengers. The port of Kingston (Kingston Container Terminal, Kingston Wharves and the Kingston sufferance wharves) accounted for 68% of the vessel calls and 54% 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. PSA International operates 25 ports in 14 countries. In 2005 PSA handled 23.1 million twenty-foot equivalent container units (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; 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 mentioned above; 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 key features that Jamaica possesses to enable the island to become a major logistics center for the region are outlined below.

1) The Port of Kingston, the largest seaport in the island comprising:
   - Kingston Container Terminal (KCT), a large and modern transshipment hub port rated 55th in the world in 2007 on the basis of container traffic;[18]
   - 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; and
   - 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).

While 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 3,586 vessel visits in 2008, up 0.34% from 3,574 visits in 2001, and handled a total of 30.3 million tonnes of cargo, of which 34% was represented by transshipment cargo at the KCT. The expansion of the KCT has developed a total capacity of 3.2 million Twenty-foot Equivalent Units (TEUs) by December 2008.

The Ministry of Transport 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 also must 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;

[18] Institute of Shipping Economics and Logistics, Shipping Statistics Yearbook 2008.

- 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; and
- inadequate land use planning and reservation for port expansions.

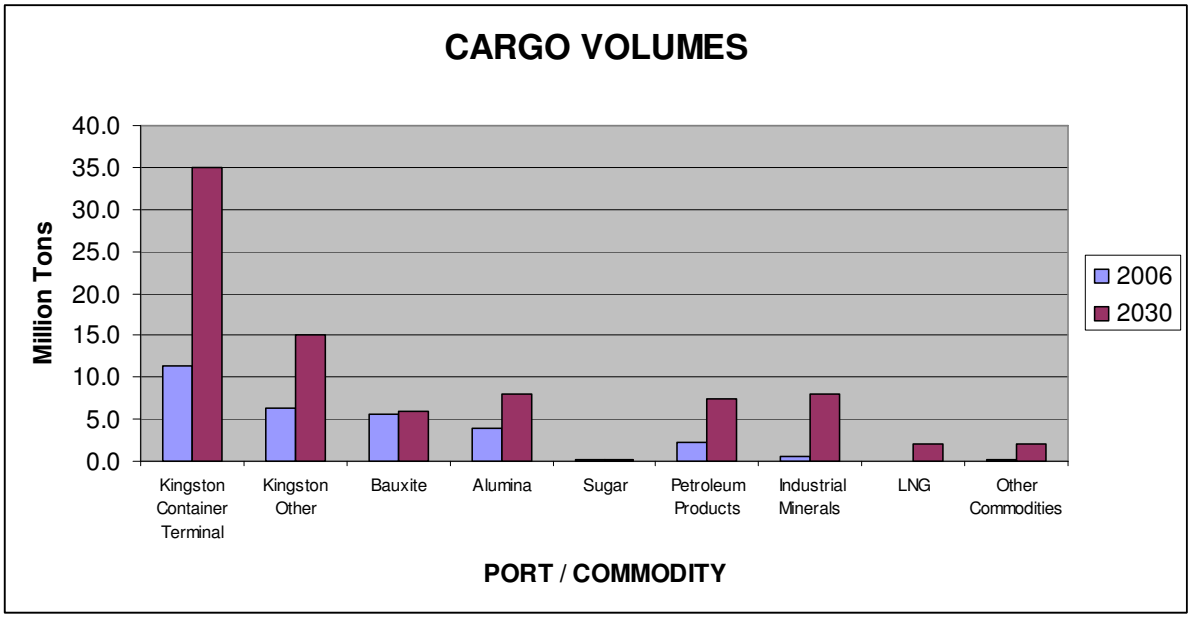
The issue of incentives for mainstream activities such as ports development and the registration of ships, along with the need to simultaneously develop the allied services which complement the operation of terminal port facilities and the support services complementary to the registration of international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

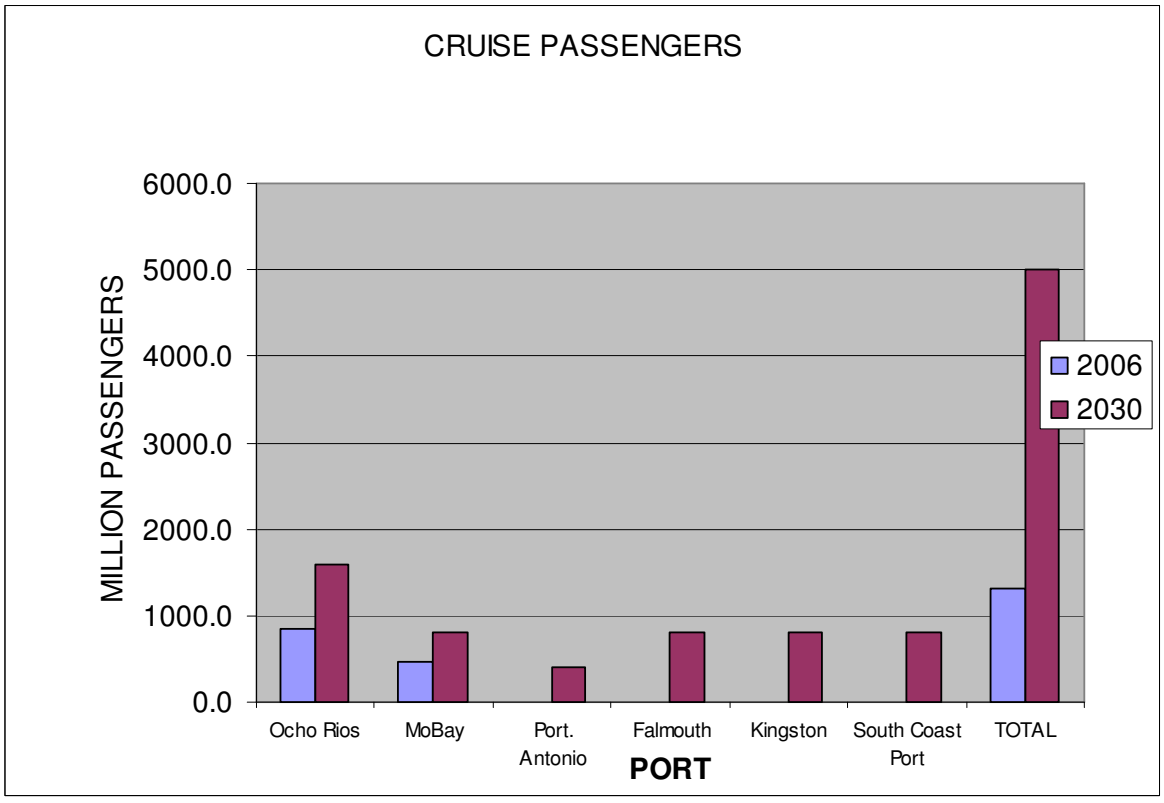
The figures below show different growth scenarios for cargo and cruise passengers. They demonstrate that if the economic growth targets required for achieving developed country status take place in other sectors of the economy, or external maritime initiatives (such as transshipment and home porting) 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



Source: MAJ

Figure 2: Projected Cruise Passenger Forecast



Source: MAJ

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; and
- 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 will require addressing all the environmental impacts of maritime 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, form 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 based on a range of dimensions and presented in Table 1 for the overall transport sector; land transport; air transport; and maritime transport.

Table 1: SWOT Analysis – Transport Sector

Overall Transport Sector

DIMENSION	INTERNAL ANALYSIS		EXTERNAL ANALYSIS	
	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
LOCATION	• Geographic location of Jamaica is asset for maritime and air transport sub-sectors	• Poor strategic route development plan to utilize Jamaica's location in the air sub-sector	• The potential for establishment of Jamaica as a major logistics junction for land, air and maritime transport sub-sectors	• Small islands are particularly vulnerable to climate change • Location in region prone to natural hazards including hurricanes
FACILITATION	• Jamaica is a world brand tourist and shipping location • Facilitation convention for maritime cargo to be signed	• Highly bureaucratic systems • Poor quality service to transport sector by some public service entities • Complicated fee structure • Tedious immigration and customs procedures	• Existence of best practices for transport sector in other countries that may be applied to Jamaica	• Competition from other countries in the region in provision of transport services
ECONOMIC	• Performance and growth of maritime sub-	• High costs of doing business in transport sector	• Continued interest of private sector for investment in sector	• Rising capital and operating costs • Global economic

	sector	• High energy costs and dependence on imported petroleum	• Development of South-South trade	downturn which may reduce the demand for transport services
MODERNIZATION	• All transport sub-sectors have modernized elements	• Lack of adequate investment	• Availability of modern technology to establish a more efficient and financially beneficial sector	• Rising capital and operating costs
FACILITIES	• The maritime and air facilities are at globally high standards	• Existing facilities do not have the needed capacity for projected growth	• Potential growth of the sector provides basis for establishing responsive infrastructure	• Competing destinations for investment in transport facilities
EDUCATION AND HUMAN RESOURCES	• Jamaica has a number of technical educational institutions including the Caribbean Maritime Institute • Jamaica has the largest English speaking workforce in the region	• Relatively weak consultation culture • Lack of adequate multi-lingual skills • People are not being adequately trained for the job market in transport sector	• Examples of consultative culture and integrated approaches to human resource development which can be applied to Jamaica	• Brain drain of skilled persons including from transport sector
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 infrastructure as a facilitator/ determinant of development	• Social/Economic consequences of various alternatives • Potential impact of natural hazards • Limited provision of resources/financing for land transport infrastructure projects • Costs associated with the delivery of land transport modes
REGULATION	• Liberalized framework	• Lack of electronic surveillance devices and enabling legislation	• Existence of appropriate monitoring technology which can be adopted	• 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	• 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	• Inadequate strategic route development plan to utilize Jamaica's location • Inadequate data to conduct proper planning for air transport	• 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	• Small islands are particularly vulnerable to climate change • Location in region prone to natural hazards including hurricanes

REGULATION	• Jamaica's CAA is rated as Category 1 by the US FAA and conforms to all international standards	• Lack of integrated approach to planning and development • Air traffic services are subject to frequent threats of industrial action • No Security Regulated Agent		• Jamaica not maintaining the category 1 rating by the US FAA • High crime rate • Terrorism
FACILITATION	• Jamaica is a world brand tourist and music destination promoting air travel to and from the island • Scheduled flights to international hubs	• 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 • Restricted open skies policy • US passport requirements • No regional carrier • Declining domestic general aviation industry	• 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 transport demand	• 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 • High cost of regional travel
ECONOMIC	• A strong financial sector with first world legislation	• Jamaica suffers from low economies of scale in its aviation industry • High cost of doing business	• 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	• 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	• The Jamaica Defense Force provides a supply of highly qualified pilots, mechanics and other skills for	• Poor consultation culture • Although there are a number of education and training institutions, curricula with regard	• To build consultative culture and integrated approach to development • Existing educational institutions as	• Lack of training for future development for airport hub

	the aviation industry • Jamaica has the largest English speaking workforce in the region	to aviation are generally not present	potential partners to design education for the future of the sector workforce	
FACILITIES	• 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	• 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	• 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/ GENERAL CARGO	• Major transshipment hub with ongoing and planned expansion	• Port developments mainly funded by public sector investment	• Strong growth potential due to expansion of Panama Canal • Growth in world trade	• Competing regional ports • Limitations of facilitating bureaucracy
PASSENGERS	• 3 established cruise passenger ports • Ongoing port expansion and development	• Ocho Rios port inadequate • Montego Bay and Port Antonio under capacity	• Continuing growth of Caribbean cruising and tourism markets	• Competing regional ports • Harassment and crime • Insufficient attractions
YACHTING	• Location and facilities of marinas	• Distance from Eastern Caribbean yachting centres	• Opportunity to develop new nautical tourism centre in north-west Caribbean including potential opening of Cuba as destination	• Hurricanes and crime • Lack of shore facilities
PETROLEUM	• Local Refinery and Int'l marketing Co's			• Potential oil shortages and price increases
NATURAL GAS		• No port facility	• Potential new energy source as catalyst for expansion in port and industrial park facilities	• Potential future shortages of natural gas supply

COAL	• Use in cement plant	• Only cement pier handles commodity	• Coal fired energy plant for JPS hence greater imports of coal	• Emission controls
BAUXITE/ ALUMINA	• Strong demand for aluminum	• Non-renewable resource • High energy costs reduce competitiveness	• Strong global demand for aluminium	• Non-availability of LNG for JAMALCO • Global economic downturn which may reduce the demand for bauxite and alumina
INDUSTRIAL MINERALS	• Vast domestic reserves	• Lack of export facilities	• Huge demand in US with multi-million ton export potential	• Competition from Mexico, Cuba
GYPSUM	• Strong market for gypsum	• Outdated facility		
CEMENT		• Tariff on imported cement • Unreliable supply • Quality control	• Continued growth in local construction and export markets • Plant expansion	
FERTILIZER		• Outdated facilities	• Staple for farming sector • Expansion of farming sector leading to more imports and demand for port facilities	• Contraction of farming sector would reduce demand for fertilizer imports
GRAIN		• Outdated facilities	• New facilities could benefit from economies of scale • Staple for food and animal feed with growth in grain imports • Use in ethanol production	• Shortages or higher grain prices
SUGAR		• Low production	• Major export commodity • Cane replanting, production of ethanol feedstock, more exports	• Potential impact of changes in EU market regime for sugar
BANANAS	• Exclusive export facility	• Declining production	• Alternate uses for Boundbrook Wharf	• Containerization of commodity • Potential impact of changes in EU market regime for bananas
HUMAN RESOURCES	• Caribbean Maritime Institute (CMI) as IMO Accredited Institute	• Underutilization of CMI facilities	• Potential for technology transfer from leading nations • Demand for training other maritime personnel • Demand for seafarers	• Brain drain leading to skills shortage for maritime transport
ANCILLARY SERVICES	• Bunkering, ship repair, legal	• Lack of adequate ship finance, dry	• Maritime cluster, employment creation	• Relocation of shipping lines

	services, agency, surveying feeder service already in place	dock, ship management		
SHIP REGISTRATION	• Established register with attractive incentives	• Limited global presence	• Potential for foreign exchange earnings	• Competing registries
SHORT SEA SHIPPING			• Large volumes of cement, aggregates moved cross island which contribute to road damage • Absence of rail road as competing cargo transport mode	• Influence of trucker lobby
SHIP OWNERSHIP	• Existence of ship registry	• Lack of ship finance	• Carriage of industrial minerals, LNG, bauxite	• Competition from other jurisdictions
LEGAL AND INSTITUTIONAL FRAMEWORK	• The Shipping Act and other Acts • The maritime administrative institutions • Jamaica's participation in international conventions	• Fragmented and lengthy bureaucratic and legal process • Conflict of interest between role of port regulator and operator	• Existence of best practices in countries such as Singapore and New Zealand • Emerging market for carbon credits	• Constraints to private sector involvement
POLLUTION PREVENTION	• Industry is highly regulated based on existing legislation	• Lack of adequate legislation	• Access to oil pollution fund • Requirements for reception facilities • Potential designation as special area under MARPOL	• Impact of pollution incidents • Threat of ship-generated waste
ENVIRONMENT		• Slow approval process for environmental permits and licenses • Prohibitive fees and charges		• Invasive Species • Spills and other accidents
SAFETY	• Port State Control inspections	• Shortage of surveyors	• Reduction of maritime casualties	• Maritime casualties
SECURITY	• ISPS Compliant	• Absence of communications infrastructure		• Potential impact of security incidents • Illegal narcotics

4. Strategic Vision and Planning Framework

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 live, work, raise families, 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 Vision 2030 Jamaica 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 draft National Transport Policy (2007):

> "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 draft National Transport Policy 2007)

Air Transport

> "An air transport system that facilitates Jamaica as a strategic passenger and logistics hub"
> (developed by the Air Transport Sub-Committee)

Maritime Transport

> "A safe, secure, efficient and competitive maritime transport system facilitating a strategic logistics hub, offering services of the highest standards to the local and international communities in an environmentally responsible manner"
> (developed by the Maritime Transport Sub-Committee)

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; and

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.

4.4 Strategic Planning Framework

4.4.1 Strategic Approach

Strategic planning for Jamaica's Transport sector is based on the premise that transport infrastructure and services will be central to the growth and development of the Jamaican economy and society throughout the timeframe covered by Vision 2030 Jamaica. The Plan seeks to expand and modernize the transport sector to support the development of value-added production in a range of economic sectors and industries where competitive

advantages already exist or may be built in the future, and to enhance access to domestic, regional and international markets.

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. The development of a modernized public transport system will be a priority.

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 as listed below.

- 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 the island 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.[19] 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.

[19] 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 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.

Jamaica also will have to upgrade its logistics capacity, which currently compares unfavourably with international competitors. The Logistics Performance Index for 2007 ranked Jamaica 118th out of 150 countries for its overall logistics performance across a range of dimensions.[20] This compares with rankings of 1st for Singapore, 54th for Panama, and 96th for the Dominican Republic. The most problematic aspects of our logistics performance included infrastructure, handling of international shipments, logistics competence, tracking and tracing, and timeliness. However, Jamaica ranked 5th in the world on domestic logistics costs.

4.4.2 Goals and Outcomes

The seven (7) main goals and associated outcomes of the Transport Sector Plan are presented below. These goals represent the ultimate desired state of the Transport Sector through which we realize the Sector Vision. The Sector Outcomes represent the desired results which we seek to achieve under each goal. A range of indicators and targets aligned to the Sector Outcomes provide quantitative milestones against which progress in implementing the Transport Sector Plan over time may be measured.

Table 2: Transport Sector Goals and Outcomes

GOALS	OUTCOMES
1.0:- A sustainable road transport system that serves the economic and social needs of the country	1.1:- Properly constructed and maintained road network
	1.2:- A public transportation system that facilitates the movement of people, goods and services throughout Jamaica in a safe and efficient manner
	1.3:- Improved management of traffic on the road network
	1.4:- A road transport system which accommodates non-motorized transport
	1.5:- Increased provision and efficiency of road transport services

[20] Arvis, Jean-François, Monica Alina Mustra, John Panzer, Lauri Ojala and Tapio Naula. 2007. *Connecting to Compete: Trade Logistics in the Global Economy - The Logistics Performance Index and Its Indicators.* (Washington, D.C.: The World Bank).

2.0:- A country with adequate and high quality domestic and international air transport infrastructure and services	2.1:- Expanded domestic air transport infrastructure and service
	2.2:- Expanded international airport infrastructure
	2.3:- Expanded international air service
3.0:- A globally competitive and diversified maritime transport sub-sector	3.1:- Short sea shipping established as a viable option for coastal transport of cargo and passengers
	3.2:- Diversification of maritime cargo
	3.3:- Development of key maritime infrastructure
	3.4:- Development of human and technical resources for maritime transport
	3.5:- Creation of Maritime Center
	3.6:- Growth of shipping fleet
4.0:- A viable railway system that supports economic and social development	4.1:- Railway system that supports a major logistics hub and movement of passengers and cargo on critical corridors
5.0:- Establishment of Jamaica as a major integrated multimodal logistics hub	5.1:- Development of efficient and effective institutional framework and supporting services for logistics hub
	5.2:- Development of efficient and adequate infrastructure for logistics hub
6.0:- Comprehensive policy, legislative, regulatory and institutional framework for transport sector	6.1:- Development of efficient and effective policy, legislative, regulatory and institutional framework for the transport sector
7.0:- Environmentally sustainable transport sector	7.1:- Environmentally sustainable transport infrastructure and services
	7.2:- High levels of energy security, conservation and efficiency in the transport sector

4.4.3 Integration with the National Development Plan

Under Vision 2030 Jamaica, each Sector Plan is integrated with the strategic framework of the National Development Plan. The Transport Sector Plan is aligned with the National Development Plan under the following National Goal and National Outcome:

National Goal #3: Jamaica's Economy is Prosperous
National Outcome #9: Strong Economic Infrastructure

There are five (5) National Strategies under this National Outcome that are relevant to the Transport Sector Plan:

National Strategy 9-1: Expand and rationalize land transport infrastructure and services
National Strategy 9-2: Develop a modernized public transport system
National Strategy 9-3: Expand domestic and international air transport infrastructure and services
National Strategy 9-4: Expand and diversify maritime infrastructure and services
National Strategy 9-5: Develop Jamaica as a regional logistics hub with multimodal transport linkages

Consequently the implementation of the Transport Sector Plan will contribute primarily to the achievement of National Goal #3 and National Outcome #9 of the National Development Plan.

4.5 Sector Indicators and Targets

The proposed indicators and targets for the Transport Sector Plan over the period 2009 - 2030 are presented in Table 3 below.

Table 3: Transport Sector Plan – Proposed Indicators and Targets

Transport Sector Plan					
PROPOSED OUTOME INDICATORS	**BASELINE**	**PROPOSED TARGETS**			**COMMENTS**
	2007 or Most current	**2012**	**2015**	**2030**	
Infrastructure Index (adapted from the GCI)	3.54	3.69	3.84	≥4.59	Targets set to achieve score equivalent to lower range of the top 30 countries by 2030.
User satisfaction with public transport	n/a				
% of roads in "good" condition (%)	12%				
% change in total passengers through int'l airport	2.10%				
% change in total cargo through int'l airport	9.80%				
% change in total # of vessel visits	-7.50%				

Transport Sector Plan					
PROPOSED OUTOME INDICATORS	**BASELINE**	**PROPOSED TARGETS**			**COMMENTS**
	2007 or Most current	**2012**	**2015**	**2030**	
% change in volume of cargo (%)	1.40%				
% of JRC railway tracks that is active (%)	27.50%				

5. Implementation, Monitoring & Evaluation Framework for the Transport Sector

5.1 Implementation Framework

The implementation of the Transport Sector Plan is an essential component of the implementation, monitoring and evaluation framework for the Vision 2030 Jamaica – National Development Plan. The Plan is implemented at the sectoral level by ministries, departments and agencies (MDAs) of Government as well as non-state stakeholders including the private sector, NGOs and CBOs. The involvement of stakeholders is fundamental to the successful implementation of the National Development Plan and the Transport Sector Plan.

Components of Vision 2030 Jamaica

The Vision 2030 Jamaica - National Development Plan has three (3) components:

1. **Integrated National Development Plan:**
   The integrated National Development Plan presents the overall plan for Vision 2030 Jamaica, integrating all 31 sector plans into a single comprehensive plan for long-term national development. The integrated National Development Plan presents the National Vision, the four National Goals and fifteen National Outcomes, and the National Strategies required to achieve the national goals and outcomes.
2. **Medium Term Socio-Economic Policy Framework (MTF):**
   The Medium Term Socio-Economic Policy Framework (MTF) is a 3-yearly plan which summarizes the national priorities and targets for the country and identifies the key actions to achieve those targets over each 3-year period from FY2009/2010 to FY2029/2030.
3. **Thirty-one (31) Sector Plans:**
   At the sectoral level Vision 2030 Jamaica will be implemented through the strategic frameworks and action plans for each sector as contained in the respective sector plans. Vision 2030 Jamaica includes a total of thirty-one (31) sector plans covering the main economic, social, environmental and governance sectors relevant to national development.

5.1.1 Accountability for Implementation and Coordination

The Cabinet, as the principal body with responsibility for policy and the direction of the Government, has ultimate responsibility for implementation of the National Development Plan. Each ministry and agency will be accountable for implementing the National Development Plan (NDP) through various policies, programmes and interventions that are aligned with the strategies and actions of the NDP and the sector plans. A robust results-based monitoring and evaluation system will be established to ensure that goals and outcomes of the Plan are achieved. This system will build on existing national and sectoral monitoring and evaluation frameworks and will be highly participatory.

5.1.2 Resource Allocation for Implementation

Vision 2030 Jamaica places great emphasis on ensuring that resource allocation mechanisms are successfully aligned and integrated with the implementation phase of the National Development Plan and sector plans. The requirements to ensure resource allocation for implementation will include alignment of organizational plans in the public sector, private sector and civil society with the National Development Plan, MTF and sector plans; coherence between the various agency plans with the National Budget; rationalization of the prioritization process for public sector expenditure; and increased coordination between corporate planners, project managers and financial officers across ministries and agencies.

5.2 Monitoring and Evaluation Framework

5.2.1 Institutional Arrangements

A number of institutions and agencies, including the following, will be involved in the monitoring and evaluation framework for the National Development Plan and the Transport Sector Plan:

1. **Parliament**: The Vision 2030 Jamaica Annual Progress Report will be presented to the Parliament for deliberations and discussion.

2. The **Economic Development Committee (EDC)** is a committee of Cabinet chaired by the Prime Minister. The EDC will review progress and emerging policy implications on the implementation of Vision 2030 Jamaica and the relevant sector plans.

3. The **Vision 2030 Jamaica Technical Monitoring Committee (TMC)**, or Steering Committee, is to be chaired by the Office of the Prime Minister and will provide oversight for the technical coordination and monitoring of the Plan and reporting on the progress of implementation.

4. The **Vision 2030 Jamaica Technical Secretariat** to be institutionalized within the PIOJ will play a leading role in coordinating implementation, analyzing social and economic data and information, consolidating sectoral information into comprehensive reports on Vision 2030 Jamaica's achievements and results, maintaining liaisons with sectoral focal points in MDAs, and supporting the establishment and operation of Thematic Working Groups.

5. **Ministries, Departments and Agencies (MDAs)** represent very important bodies within the implementation, monitoring and evaluation system. They are the Sectoral Focal Points that will provide data/information on a timely basis on the selected sector indicators and action plans, and be responsible for the timely preparation of sector reports that will feed into the Vision 2030 Jamaica Annual Progress Report. For the Transport Sector Plan, the main MDAs comprising the relevant Sectoral Focal Point will include the Ministry of Transport and Works, the National Works Agency, the Airports Authority of Jamaica, Jamaica Civil Aviation Authority, Port Authority of Jamaica and Maritime Authority of Jamaica.

6. **Thematic Working Groups (TWGs)** are consultative bodies aimed at providing multi-stakeholder participation in improving the coordination, planning, implementation and monitoring of programmes and projects relevant to the NDP and sector plans, including the Transport Sector Plan. TWGs will be chaired by

Permanent Secretaries or senior Government officials and shall comprise technical representatives of MDAs, National Focal Points, the private sector, Civil Society Organizations and International Development Partners. TWGs will meet a minimum of twice annually.

5.2.2 Indicator Framework and Data Sources

Appropriate indicators are the basic building blocks of monitoring and evaluation systems. A series of results-based monitoring policy matrices will be used to monitor and track progress towards achieving the targets for the NDP and sector plans, including the Transport Sector Plan. The performance monitoring and evaluation framework will be heavily dependent on line/sector ministries for quality and timely sectoral data and monitoring progress.

The results-based performance matrices at the national and sector levels comprise:

- At the national level, 60 proposed indicators aligned to the 15 National Outcomes
- At the sector level, a range of proposed indicators aligned to the sector goals and outcomes
- Baseline values for 2007 or the most recent past year
- Targets which outline the proposed values for the national and sector indicators for the years 2012, 2015 and 2030
- Data sources which identify the MDAs or institutions that are primarily responsible for the collection of data to measure and report on national and sector indicators
- Sources of targets
- Links to existing local and international monitoring frameworks such as the MDGs

Some gaps still exist within the performance matrix and a process of review to validate the proposed indicators and targets is being undertaken. This process is very technical and time consuming and requires significant cooperation and support from stakeholders and partners. The performance monitoring and evaluation framework will be heavily dependent on ministries for quality and timely sectoral data and monitoring progress. The system will benefit from our existing and relatively large and reliable statistical databases within the Statistical Institute of Jamaica (STATIN) and the PIOJ.

5.2.3 Reporting

The timely preparation and submission of progress reports and other monitoring and evaluation outputs form an integral part of the monitoring process.

The main reports/outputs of the performance monitoring system are listed below.

1. **The Vision 2030 Jamaica Annual Progress Report** will be the main output of the performance monitoring and evaluation system.

2. **The annual sectoral reports** compiled by the Sectoral Focal Points for submission to the Vision 2030 Jamaica Technical Monitoring Committee. These will be integrated into the Annual Progress Report.

3. **Other products** of the performance monitoring system include issues/sector briefs and research reports.

5.2.4 Capacity Development

There is recognition that building and strengthening technical and institutional capacity for the effective implementation, monitoring and evaluation of the NDP and the Transport Sector Plan is critical for success. This calls for substantial resources, partnership and long-term commitment to training MDA staff. Training needs will have to be identified at all levels of the system; a reorientation of work processes, instruments, procedures and systems development will have to be undertaken; and staffing and institutional arrangements will need to be put in place. Partnership with the Management Institute for National Development (MIND) and other institutions also will be required to provide training to public sector staff and others in critical areas such as results-based project management and analysis, monitoring and evaluation, and data management.

5.3 The Way Forward

The Transport Sector Plan will represent the basis for implementation of the Vision 2030 Jamaica – National Development Plan in the Transport sector. Some key steps in the implementation process for the Transport Sector Plan include:

1. Undertake consultations with stakeholders in the sector to present and review the Transport Sector Plan for Vision 2030 Jamaica;

2. Engage with key stakeholders including relevant Ministries, Departments and Agencies (MDAs) to finalize sector-level indicators and targets for the Transport Sector Plan for 2012, 2015 and 2030;

3. Mainstream the Transport Sector Strategic Framework and Action Plan into the Corporate/Business and Operational Plans of the relevant MDAs as the mechanism for implementation in the public sector;

4. Ensure participation by key Transport sector stakeholders in the establishment and ongoing operation of the implementation, monitoring and evaluation framework for Vision 2030 Jamaica, including the Sectoral Focal Point and Thematic Working Group for the Transport Sector Plan.

6. Action Plan for the Transport Sector

The Action Plan represents the main framework for the implementation of the Transport Sector Plan for Vision 2030 Jamaica. The tracking of implementation of the Transport Sector Plan will take place through the Action Plan as well as the framework of sector indicators and targets.

The Action Plan contains the elements listed below.

i. Sector Goals
ii. Sector Outcomes
iii. Sector Strategies
iv. Sector Actions
v. Responsible Agencies
vi. Time-Frame

VISION 2030 JAMAICA - NATIONAL DEVELOPMENT PLAN
TRANSPORT SECTOR PLAN
REVISED DRAFT STRATEGIC FRAMEWORK AND ACTION PLAN

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
Goal # 1: A sustainable road transport system that serves the economic and social needs of the country				
1.1:- Properly constructed and maintained road network	**1.1.1:-** Improve and rationalize the road transport infrastructure	1.1.1.1 Implement the Road Sector Master Plan (Maintenance)	**MTW**, NWA	Years 1-10
		1.1.1.2 Develop and implement national programmes for routine and periodic road maintenance	**NWA**, MTW, LAs	Years 1-3 Ongoing
		1.1.1.3 Undertake and implement island-wide drainage plan	**MTW, NWA, LAs**	Years 1-10
		1.1.1.4 Implement National Road Services Improvement Programme	**MTW, NWA**	Years 1-3
		1.1.1.5 Undertake maintenance of farm and community roads	**NWA, MOAF, LAs**	Ongoing
	1.1.2:- Strengthen the institutional capacities and capabilities of the roads authorities to develop and maintain the road network	1.1.2.1 Create a single Road Authority	**MTW**, NWA, LAs, UDC, NROCC, MOAF, MFPS, Road Maintenance Fund (RMF), Parochial Fund	Years 1-3
		1.1.2.2 Strengthen capacity to regulate, license and monitor activities in road network	**MTW, NWA, LAs, TA**	Years 1-3 Ongoing
		1.1.2.3 Improve inter-institutional arrangements for construction and management of main and parochial road networks	**MTW, NWA, LAs, TA**	Years 1-3 Ongoing

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
	1.1.3:- Encourage and facilitate greater private sector participation in the construction, management and maintenance of the road network, including: • Construction and operation of tolled roads and bridges • Maintenance of roads and bridges • Project Management • Engineering Consulting	1.1.3.1 Establish appropriate legal framework for private sector participation, addressing roles and responsibilities, as well as rights and entitlements	**MTW, private sector**	Years 1-3
		1.1.3.2 Develop and publish regulations regarding tariffs, investment criteria and bidding procedures	**MTW**	Years 1-3
		1.1.3.3 Encourage private sector participation in the improvement of key arterial roads including on the South Coast	**MTW, NWA, private sector,** NROCC	Years 1-9 Ongoing
	1.1.4:- Secure a sustainable means of funding road maintenance expenditures based on the "user-pays" principle whereby road users contribute to the upkeep of roads infrastructure through motor vehicle levies and user charges	1.1.4.1 Establish dedicated tax on vehicle fuel	**MEM, MTW, MFPS**	Years 1-3
		1.1.4.2 Increase licence fees for heavy vehicles	**MFPS, MTW, ITA**	Years 1-3
		1.1.4.3 Increase dedicated sources of funding for the Road Maintenance Fund and the Parochial Revenue Fund	**MFPS, MTW, LAs, Department of Local Government**	Years 1-3 Ongoing
		1.1.4.4 Increase and enforce penalties on overweight vehicles	**MTW, ITA, NWA, NROCC**	Years 1-3 Ongoing
	1.1.5:- Increase resilience of road network to	1.1.5.1 Participate in integrated national watershed management and	**MTW, NWA, LAs,** NEPA, ODPEM, UWI	Ongoing

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
	hazards	hazard mapping programmes		
		1.1.5.2 Undertake flood damage mitigation measures	**MTW, NWA**	Ongoing
		1.1.5.3 Produce and implement a formal hazard mitigation strategy and a disaster management contingency plan for the road transport sector	**MTW, NWA, LAs**, NEPA, ODPEM, UWI	Years 1-3 Ongoing
		1.1.5.4 Design, build and retro-fit road infrastructure to meet current and projected hazard events	**NWA, LAs, NROCC**	Ongoing
	1.1.6:- Ensure the completion of the island-wide highway network	1.1.6.1 Complete Sandy Bay to Williamsfield Leg of Highway 2000	**MTW, NWA, NROCC**	Years 1-3
		1.1.6.2 Complete Spanish Town to Ocho Rios Leg of Highway 2000	**MTW, NWA, NROCC**	Years 1-3
		1.1.6.3 Complete Williamsfield – Montego Bay Leg	**MTW, NWA, NROCC**	Years 1-6
		1.1.6.4 Complete Port Antonio – Fair Prospect Leg of Northern Coastal Highway	**MTW, NWA**	Years 1-3
		1.1.6.5 Implement South & Eastern Coastal Highways	**MTW, NWA**	Years 1-6
		1.1.6.6 Develop e-tolling plazas	**Trans-Jamaica Highways,** MTW, NWA, NROCC	Years 1-9
1.2:- A public transportation system that facilitates the	**1.2.1:-** Develop and implement long-term plan for public transport system	1.2.1.1 Develop long-term plan for island-wide public transport system including for schools, taking into consideration	**MTW, TA,** JUTC, MBM, JRC, MAJ, JCAA, Island Traffic Authority (ITA), Road	Years 1-3

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
movement of people, goods and services throughout Jamaica in a safe and efficient manner		integrated multi-modal options for bus, rail, taxi, ferry and air transport	Safety Unit (RSU)	
		1.2.1.2 Undertake periodic island-wide survey to determine population counts and passenger movements to inform long-term plan	**TA,** MTW	Every 4 years
		1.2.1.3 Develop sustainable funding mechanisms for the public transport system	**MTW, MFPS,** JUTC, MBM	Years 1-9
		1.2.1.4 Develop rural township transportation model	**MTW**	Years 1-6
	1.2.2:- Develop and expand public bus system to meet sustainable transport needs	1.2.2.1 Maintain viable fee structure for public bus service based on cost of operation	**MTW, MFPS,** JUTC, MBM	Ongoing
		1.2.2.2 Implement new routes in the Montego Bay Metropolitan Transport Region and environs	**Montego Bay Metro (MBM)**	Years 1-3 Ongoing
		1.2.2.3 Fit bus size to route load	**TA, MTW**, JUTC, MBM	Years 1-6 Ongoing
		1.2.2.4 Undertake pilot project in Montego Bay using double-decker buses	**MTW, MBM**	Years 1-3
	1.2.3:- Ensure access to public transport system for all vulnerable groups, including children, the elderly, persons with disabilities, the poor, and women in certain	1.2.3.1 Take measures to ensure safe conditions on public transport vehicles and in terminals islandwide	**JUTC, MBM**, TA, MTW	Years 1-6 Ongoing
		1.2.3.2 Discourage discrimination on public transport vehicles (including on the basis of age, size, or disabilities)	**MTW, TA, JUTC, MBM**	Years 1-6 Ongoing

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
	situations (such as pregnant and nursing women)	1.2.3.3 Standardize ticketing on all public transport vehicles	**MTW, TA, JUTC, MBM**	Years 1-6 Ongoing
		1.2.3.4 Introduce and expand use of public transport vehicles equipped for passengers with special needs (including persons with disabilities, the elderly, infants)	**MTW, TA, JUTC, MBM**	Years 1-6 Ongoing
		1.2.3.5 Incorporate requirements of passengers with special needs in the design of public transport facilities	**MTW, NWA, ITA,** TA, JUTC, MBM	Years 1-6 Ongoing
		1.2.3.6 Provide mechanisms for reduced fares on public transport for vulnerable groups (including children, the elderly, persons with disabilities, the poor)	**MTW, TA, JUTC, MBM**	Years 1-6 Ongoing
	1.2.4:- Ensure appropriate public transport system for students	1.2.4.1 Coordinate scheduling of public transport to provide adequate capacity and coverage at peak traveling times for students	**JUTC, MBM**, TA	Years 1-3 Ongoing
		1.2.4.2 Consider transportation issues and needs in the development of the educational system (e.g. school location, shift system, school zoning etc.)	**MTW, MOE, TA**, RSU, NEPA, LAs	Years 1-3 Ongoing
		1.2.4.3 Encourage and provide appropriate regulatory framework for privately owned student transport vehicles including for	**MTW**, TA	Years 1-3 Ongoing

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
		rural areas		
	1.2.5:- Regulate the taxi industry to ensure safe and effective service	1.2.5.1 Institute and enforce licensing regime to ensure vehicle fitness, driver capability and adherence to regulations	**TA**	Ongoing
		1.2.5.2 Extend taxi routes and licensing to meet demand of traveling public on designated routes where commuter needs cannot be satisfied by the public bus system, or the roads are too narrow for larger buses	**TA**, JUTC	Ongoing
	1.2.6:- Ensure proper infrastructure and supporting facilities and equipment for the public transport system	1.2.6.1 Ensure that proper facilities for buses and taxis, including bus stops, sheds, splash guards, and passenger information signage are developed at urban interchange and other strategic points throughout the island	**MTW, NWA**, JUTC, MBM, TA	Ongoing
		1.2.6.2 Develop, maintain and operate terminals and transport centres	**MTW**, JUTC, TA	Ongoing
	1.2.7: Ensure that adequate policy and regulations for public transport are implemented	1.2.7.1 Strengthen the institutional capacity of the transport agencies and the regulatory and enforcement authorities to monitor and regulate public passenger vehicles	**MTW, TA, ITA**	Ongoing
		1.2.7.2 Define operating, performance and safety standards with respect	**TA**, JUTC, MBM	Ongoing

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
		to vehicle specification and condition, the conduct of bus crews and franchise holders, operators of public passenger vehicles, and commuters		
		1.2.7.3 Ensure stakeholder consultation and participation in the development of policy and regulations for public transport	**MTW, TA, ITA**, RSU, stakeholder groups	Ongoing
	1.2.8:- Promote use of public transport over private car travel	1.2.8.1 Develop and implement public education programmes on the economic, social and environmental benefits of public transport	**TA, MTW**, JUTC, MBM, UDC	Years 1-6 Ongoing
		1.2.8.2 Increase attractiveness, comfort and efficiency of public transport system	**TA, MTW, JUTC, MBM**	Years 1-6 Ongoing
		1.2.8.3 Provide secure park and ride facilities	**TA, MTW, UDC, LAs**	Years 1-6 Ongoing
		1.2.8.4 Provide disincentives for private vehicle use (e.g. parking fees, congestion pricing entrance fees)	**MTW, MFPS, LAs**	Years 1-6 Ongoing
		1.2.8.5 Improve perception and marketing of public transport	**TA, MTW, JUTC, MBM**	Years 1-6 Ongoing
1.3:- Improved management of traffic on the road network	**1.3.1:-** Develop multi-modal traffic options	1.3.1.1 Develop transfer facilities and routing rationalization	**MTW, NWA, TA**	Years 1-6 Ongoing
		1.3.1.2 Ensure that road facilities accommodate multiple modes of traffic simultaneously wherever possible	**MTW, NWA, LAs**, ITA, JCF	Years 1-6 Ongoing

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
	1.3.2:- Develop driver feedback/ intelligent roads	1.3.2.1 Implement real time broadcast of traffic data and routing congestion alleviation	**NWA**	Years 1-10
		1.3.2.2 Implement the Intelligent Transportation System	**NWA**, MTW	Years 1-10
		1.3.2.3 Establish linkage with traffic technology developers worldwide	**MTW, NWA**	Years 1-10
	1.3.3:- Provide system of guidance/instruction for road users	1.3.3.1 Complete and periodically update Traffic Control Devices Manual (Volumes 1-4)	**MTW**, ITA	Years 1-3 Ongoing
		1.3.3.2 Provide appropriate and adequate road signs and markings in accordance with established standards	**NWA**, **LAs**	Years 1-3 Ongoing
		1.3.3.3 Publish, distribute and periodically update Drivers and Instructors Manuals and the Road Code	**MTW**, ITA	Years 1-3 Ongoing
	1.3.4:- Improve road safety standards for motor vehicles	1.3.4.1 Regulate vehicle weights to ensure better quality road condition and more efficient freight vehicles	**NWA, ITA**, JCF	Years 1-3 Ongoing
		1.3.4.2 Regulate the licensing of modified vehicles	**ITA**	Years 1-3 Ongoing
		1.3.4.3 Certify and license motor vehicle garages	**ITA, LAs**	Ongoing
		1.3.4.4 Strengthen accident investigation units	**MTW, JCF**, ITA, IAJ (Insurance Association of Jamaica)	Years 1-3 Ongoing
		1.3.4.5 Improve the operations of vehicle fitness testing stations	**ITA**, RMF	Years 1-3 Ongoing

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
	1.3.5:- Improve flow of traffic in urban centres	1.3.5.1 Develop and implement traffic management plans for major urban centres	**NWA, LAs**, ITA, JCF, MTW	Years 1-6 Ongoing
		1.3.5.2 Institute appropriate traffic management measures to reduce traffic congestion in critical areas, including intersection redesign, one-way traffic systems, traffic calming, pedestrianization	**NWA, LAs,** JCF, MTW, ITA	Years 1-6 Ongoing
		1.3.5.3 Provide on-street parking management	**LAs**	Years 1-6 Ongoing
		1.3.5.4 Establish a Portmore Hub to rationalize service in Portmore and its environs	**MTW, NWA**, JUTC	Years 1-6
		1.3.5.5 Encourage the construction and operation of off-street parking facilities where appropriate	**LAs**	Years 1-6 Ongoing
1.4:- A road transport system which accommodates non-motorized transport	**1.4.1:-** Develop road systems and infrastructure to facilitate safe non-motorized transport	1.4.1.1 Develop road systems and infrastructure to facilitate use of bicycles	**NWA, LAs**, NEPA	Ongoing
		1.4.1.2 Design road infrastructure with adequate sidewalks, signage and other safety features for pedestrians	**NWA, LAs**, TA	Ongoing
		1.4.1.3 Maintain and enforce minimum standards and guidelines for sidewalks	**NWA, LAs**	Ongoing
		1.4.1.4 Repair all sidewalks and remove utility poles in sidewalks	**NWA, JPSCo, LAs**	Ongoing

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
		1.4.1.5 Ensure education and training, good traffic management techniques and better enforcement for non-motorized transport	**MTW, TA, JCF**	Ongoing
	1.4.2:- Promote and implement safety measures for non-motorized transports	1.4.2.1 Promote knowledge of the road code and of basic safety measures on the part of cyclists and motor vehicle drivers	**Road Safety Unit**, MTW, ITA	Ongoing
		1.4.2.2 Carry out road safety public education programmes	**Road Safety Unit**	Ongoing
	1.4.3:- Promote the use of non-motorized modes of transport in appropriate areas	1.4.3.1 Promote the use of bicycles as transport mode in appropriate areas	**MTW, NWA**, NEPA, LAs	Ongoing
		1.4.3.2 Promote the pedestrian transport mode in appropriate areas	**MTW, NWA**, NEPA, LAs	Ongoing
	1.4.4:- Make provisions for accommodation of animal drawn carts	1.4.4.1 Promote the health and protection of the animal	**JSPCA, MTW,** NWA, NEPA, LAs	Years 1-3 Ongoing
		1.4.4.2 Minimize pollution by animals based on operator responsibility	**Operators**	Ongoing
1.5:- Increased provision and efficiency of road transport services	**1.5.1:** Strengthen capacity of existing institutions that provide road transport services	1.5.1.1 Establish ITA as Performance-Based Institution	**MTW, ITA**	Years 1-3
	1.5.2:- Encourage private sector provision of road transport services	1.5.2.1 Promote associations with the private sector, including in the following activities: • Operation of vehicle fitness testing stations	**MTW, NWA, UDC, LAs**	Years 1-3 Ongoing

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
		• On-street parking management • Construction and operation of off-street parking facilities • High quality urban bus services • Taxi operations • Road safety • Terminal development and operations • Traffic management measures		
		1.5.2.2 Reduce regulatory barriers which may hinder private sector participation in the provision of transport services	**MTW**	Years 1-3 Ongoing
Goal # 2: A sustainable road transport system that serves the economic and social needs of the country				
2.1:- Expanded domestic air transport infrastructure and services	**2.1.1:-** Facilitate the increase and upgrading of domestic aerodromes and air strips in the country	2.1.1.1 Encourage the opening of at least one aerodrome in each parish to serve the main economic and social needs	**MTW, AAJ, LAs, MNS**, MFPS, JHTA, JCAA, JTI, JAOPA	Years 1-21 Ongoing
		2.1.1.2 Resolve restrictions imposed by the Ministry of National Security on operation of domestic aerodromes and air strips	**MNS, MTW, AAJ,** JCAA, JAOPA, MOT, MIIC	Years 1-3
		2.1.1.3 Develop and promote models for privatization of existing aerodromes	**MTW, AAJ, private sector**	Years 1-10
		2.1.1.4 Encourage private sector involvement in the development of aviation infrastructure, including provision of incentives	**MTW, AAJ, private sector**	Years 1-10

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
		for the construction and operation of domestic aerodromes		
		2.1.1.5 Undertake feasibility and planning studies for the relocation of Tinson Pen aerodrome, including consideration of establishment of a new domestic aerodrome at Caymanas	**MTW, AAJ**	Years 1-3
		2.1.1.6 Upgrade passenger handling facilities at domestic aerodromes	**AAJ, aerodrome operators**	Years 1-3 Ongoing
		2.1.1.7 Upgrade facilities at Boscobel and Negril aerodromes	**MTW, AAJ**	Years 1-3
		2.1.1.8 Establish international ports of entry at strategically located aerodromes	**MTW, JCAA, AAJ, MFPS, Customs, Immigration, MNS**	Years 1-3 Ongoing
	2.1.2:- Promote growth of domestic air services including scheduled, unscheduled, airwork and general aviation in Jamaica	2.1.2.1 Encourage development of competitive, efficient and affordable general aviation ground support services	**MTW, AAJ, private sector**	Ongoing
		2.1.2.2 Develop regulatory framework specific to general aviation	**MTW, JCAA, AAJ**	Years 1-3
		2.1.2.3 Establish air training schools	**Private sector**, MTW, AAJ	Years 1-21
		2.1.2.4 Provide long-term tenure (25-30 years) for commercial developers and operators of air services and ground support services	**AAJ, aerodrome owners/operators**	Years 1-3 Ongoing
		2.1.2.5 Review and revise existing schedule of fees for domestic air service operators to ensure	**MTW, JCAA, AAJ**	Years 1-3 Ongoing

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
		financial viability of industry		
		2.1.2.6 Explore and develop new models for financing costs of airport and aerodrome development and operations, including potential for reduction or removal of airside fees by developing landside sources of income, or surcharges on fuel and/or international passengers	**MTW, AAJ, MFPS, aerodrome owners/operators,** JCAA, JAOPA	Years 1-3 Ongoing
2.2:-Expanded international airport infrastructure	**2.2.1:-** Ensure strategic alliances for airport development and operation	2.2.1.1 Reserve suitable land areas for future expansion and development of existing international airports (NMIA and SIA) and aerodromes based on growth in arrival and transit passenger demand and cargo	**MTW, AAJ, NEPA, Local Authorities (LAs)**	Ongoing
		2.2.1.2 Increase cargo and passenger capacity and efficiency at existing international airports to meet projected demand based on needs analysis	**MTW, AAJ, airport operators**	Years 1-21 Ongoing
		2.2.1.3 Ensure adequate routine and preventive maintenance of international airport facilities	**MTW, AAJ, airport operators**	Years 1-21 Ongoing
	2.2.2:- Develop new international airport at Vernamfield integrated into proposed multimodal	2.2.2.1 Complete feasibility studies and business plans for phased development of Vernamfield	**MTW, AAJ**	Years 1-3
		2.2.2.2 Establish public-private partnership for project	**MTW, AAJ, private sector**	Years 1-3

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
	transportation system	development		
		2.2.2.3 Establish aviation facility at Vernamfield on phased basis	**MTW, AAJ, private sector**	Years 1-10
2.3:-Expanded international air service	2.3.1:- Establish policy and business framework to facilitate expansion of international air service	2.3.1.1 Sign liberalized Air Services Agreements (Open-Skies) for cargo and passengers with as many States where feasible	**MTW, AAJ, MFAFT**	Ongoing
		2.3.1.2 Coordinate linkages and financing for key air travel market segments including: • Tourism • Diaspora • High-value air shipments	**MTW, AAJ, MFAFT, JTB, MIIC, private sector**	Years 1-3 Ongoing
	2.3.2:- Resolve long-term future of Air Jamaica	2.3.2.1 Undertake privatization of Air Jamaica based on revised business model	**MFPS, MTW**	Years 1-3
Goal # 3: A globally competitive and diversified maritime transport sub-sector				
3.1:- Short sea shipping established as a viable option for coastal transport of cargo and passengers	**3.1.1:-** Provide the necessary infrastructure for local ship owners to develop short sea shipping	3.1.1.1 Identify and develop suitable docks for shipping and receiving coastal cargo	**PAJ, MTW, private sector**	Years 1-3 Ongoing
		3.1.1.2 Establish strategic commodity depots in proximity to coastal cargo docks	**Private sector**	Years 1-3 Ongoing
	3.1.2:- Promote development of coastal and inter-island short sea shipping	3.1.2.1 Introduce short sea shipping for government-controlled cargo/commodities	**MTW**	Years 1-3 Ongoing
		3.1.2.2 Provide financing mechanisms to purchase ocean-going barges and	**MAJ, MTW, MFPS, private sector**	Years 1-3 Ongoing

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
		Ro/Ro vessels including mechanisms similar to the German KG system		
		3.1.2.3 Review Shipping Incentives Act and Cargo Preference Act to remove disincentives to Jamaicans owning ships in Jamaica and to reserve Jamaican coastal cargo to Jamaican-owned vessels	**MFPS, MTW**, MAJ, PAJ, SAJ	Years 1-3
3.2:- Diversification of maritime cargo	**3.2.1:-**Encourage development of multi-use port facilities	3.2.1.1 Review Wharfage Act to determine feasibility of liberalizing the public wharves and enabling sufferance wharves to carry third-party cargo	**MTW, PAJ**, SAJ, JBI, private sector	Years 1-3
		3.2.1.2 Require multi-use access to new port facilities for non-metallic minerals	**MEM, MTW, PAJ, Private sector**	Years 1-6 Ongoing
		3.2.1.3 Develop facilities to allow compatible multi-use of existing bauxite ports	**Private sector, PAJ, MEM**	Years 1-6 Ongoing
	3.2.2:- Facilitate diversification of bulk cargoes including dry bulk shipping and liquid bulk shipping (including coal, non-metallic minerals and LNG)	3.2.2.1 Incorporate bulk cargo berths and bulk handling equipment at existing port facilities	**PAJ, private sector**	Years 1-3 Ongoing

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
3.3:- Development of key maritime infrastructure	**3.3.1:-** Reserve suitable land areas for port expansion and future development	3.3.1.1 Zone designated areas as port zones	**NEPA, LAs, UDC**	Years 1-3 Ongoing
		3.3.1.2 Include port expansion in land use and development planning	**NEPA, LAs, UDC**	Years 1-3 Ongoing
	3.3.2:- Facilitate smooth development of strategic maritime infrastructure for cargo and passengers in the Port of Kingston, Montego Bay, Ocho Rios, Port Antonio, Falmouth and Port Esquivel	3.3.2.1 Finalize KCT Phase 5 Expansion Programme	**MTW, PAJ**	Years 1-3
		3.3.2.2 Expand Ocho Rios Cruise Ship Facility	**MTW, PAJ**	Years 1-3
		3.3.2.3 Expand Montego Bay Cruise Ship Facility	**MTW, PAJ**	Years 1-3
	3.3.3:- Establish infrastructure investment fund	3.3.3.1 Develop government Maritime Bond for public ports	**MFPS, MTW, PAJ**	Years 1-3
	3.3.4:- Develop strategic plan for development of key maritime infrastructure	3.3.4.1 Conduct comprehensive port study including existing commercial ports, sufferance wharves, marinas and fishing facilities	**MTW, PAJ**	Years 1-3
		3.2.1.4 Develop national port master plan for all public and private ports	**MTW, PAJ, SAJ, JBI, private sector**	Years 1-3
3.4:- Development of human and technical resources for maritime transport	**3.4.1:-** Develop adequate human resources skills	3.4.1.1 Upgrade CMI to university status	**CMI, UCJ**	Years 1-3
		3.4.1.2 Expand skills training of maritime personnel by HEART in collaboration with CMI	**HEART, CMI**	Years 1-3 Ongoing
		3.4.1.3 Provide maritime training for	**CMI, Fisheries**	Years 1-3

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
		fishermen	**Division, MAJ**	Ongoing
		3.4.1.4 Certify maritime workers	**CMI, HEART/NTA**, SAJ	Years 1-3 Ongoing
		3.4.1.5 Expand range of maritime training programmes through collaboration by CMI with private training institutions and other tertiary educational institutions	**CMI, private training institutions**, other tertiary educational institutions	Years 1-3 Ongoing
	3.4.2:- Expand knowledge base of service providers, policy makers and regulators	3.4.2.1 Utilize maritime training courses for public and private sector	**CMI**	Years 1-3 Ongoing
	3.4.3:- Foster technology and knowledge transfer	3.4.3.1 Transform CMI to research university	**CMI**	Years 1-9
		3.4.3.2 Promote development of indigenous R&D and technology	**Universities, CMI, private sector**	Years 1-9 Ongoing
		3.4.3.3 Introduce technology/business incubators for maritime transport enterprises	**Universities, CMI, private sector, MTW, MIIC**	Years 1-9 Ongoing
	3.4.4:- Exploit opportunities to become a crewing nation due to worldwide shortage of ship's officers	3.4.4.1 Implement new curriculum (to Class 1 level) and increase enrollment for maritime professional training	**CMI**	Years 1-3 Ongoing
		3.4.4.2 Expand seafarer programme	**CMI**	Years 1-6 Ongoing
3.5:- Creation of Maritime Center	**3.5.1:-** Nurture ancillary and supporting services to main maritime activities to develop:	3.5.1.1 Develop policy for Jamaica as an international shipping center	**MTW, MAJ, PAJ**, JTI	Years 1-6 Ongoing
		3.5.1.2 Develop internationally competitive legislation,	**MTW, MAJ, MFPS, PAJ**, SAJ	Years 1-6 Ongoing

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
	• Ship Registry • Base for Ship Owners • Ship Management Companies • Maritime Training • Ship Finance • Legal Services • Ship Brokering • Marine Insurance • Bunkering (fuel, water) • Dry Docking • Ship Repair	regulations and guidelines for international shipping center		
		3.5.1.3 Develop operational framework and code of practice for international shipping center	**MTW, MAJ, PAJ**	Years 1-6 Ongoing
		3.5.1.4 Implement Port Community System and Trade Facilitation System	**PAJ, SAJ**	Years 1-3
		3.5.1.5 Provide technical capacity ashore for maritime industries	**MTW, MAJ, PAJ, private sector**	Years 1-6 Ongoing
		3.5.1.6 Integrate financial maritime services in the development of Jamaica's International Financial Centre	**MFPS, MIIC, MTW, JTI, private sector**	Years 1-6 Ongoing
		3.5.1.7 Develop and implement coordinated marketing programme to promote Jamaica as international shipping centre	**JTI,** MTW, PAJ, private sector	Years 1-6 Ongoing
		3.5.1.8 Establish favourable tax regime for international shipping centre including: • Appropriate incentives • Establishment of international business companies • Removal of taxation on seafarer income • Expanded use of double taxation agreements	**MFPS, MTW,** MIIC, MAJ, PAJ, JTI	Years 1-6 Ongoing
	3.5.2:- Facilitate home-porting of cruise ships	3.5.2.1 Develop new customs regulations for cruise ship crews and in-transit passengers	**MFPS, Jamaica Customs**	Years 1-6

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
		3.5.2.2 Undertake face-to-face meetings and direct marketing with major cruise lines	**PAJ, JTB, JTI**	Years 1-3 Ongoing
		3.5.2.3 Increase trade show participation and international cruise trade advertising	**PAJ, JTB, JTI**	Years 1-3 Ongoing
3.6:- Growth of shipping fleet	**3.6.1:-** Facilitate growth of ship registry	3.6.1.1 Undertake integrated marketing of Registry with other shipping services e.g. ports, seafarer training, logistics providers	**MAJ**	Years 1-6 Ongoing
	3.6.2:- Expand presence of ship registry in main shipping centers globally	3.6.2.1 Expand Regional Office and Deputy Registrar network worldwide	**MAJ**	Years 1-6 Ongoing
		3.6.2.2 Establish offices in key markets: • Germany • Singapore • Athens • New York	**MAJ**	Years 1-6 Ongoing
	3.6.3:- Encourage shipping and ship management companies to base their operations in Jamaica	3.6.3.1 Expand use of bilateral and regional trade agreements	**MTW, MFAFT, PAJ, MAJ**, JTI	Years 1-6 Ongoing
	3.6.4:- Encourage the financing of ships	3.6.4.1 Facilitate ship finance funds similar to the German KG system	**MFPS, MTW, MAJ, private sector**	Years 1-6
	3.6.5:- Encourage the entrepreneurial potential of trained maritime personnel	3.6.5.1 Provide business incubators, facilitation and credit for eligible maritime personnel	**MIIC, DBJ,** MTW, CMI	Years 1-10

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
Goal # 4: A viable railway system that supports economic and social development				
4.1:- Railway system that supports a major logistics hub and movement of passengers and cargo on critical corridors	**4.1.1:-** Plan and develop modern railway linkages along key routes	4.1.1.1 Undertake studies to determine the economic, social and environmental feasibility of the railway system	**MTW, JRC**	Year 1
		4.1.1.2 Establish railway linkages with seaports and airports	**MTW, JRC, PAJ, AAJ**	Years 1-10
		4.1.1.3 Establish railway linkages on critical corridors for movement of passengers, including: • Kingston – Montego Bay • Kingston – Portmore – May Pen • Kingston – Spanish Town – Linstead	**MTW, JRC**	Years 1-10
	4.1.2:- Encourage private sector participation in the provision of rail services	4.1.2.1 Invite and assess proposals for operators/lessees of the railway facilities (e.g. based on bauxite model)	**MTW, JRC, private sector**	Years 1-3
		4.1.2.2 Encourage private sector participation in: • Operation of passenger and freight services including ticketing • Supply and maintenance of rolling stock • Track and maintenance	**MTW, JRC, private sector**	Years 1-10 Ongoing
		4.1.2.3 Execute public-private partnerships (PPPs) based on suitable proposals	**MTW, JRC, private sector**	Years 1-10

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
		4.1.2.4 Provide the railway with the freedom to negotiate tariffs so as to maximize market share	**MTW, JRC, private sector**	Years 1-10
	4.1.3:- Establish a railway safety regime	4.1.3.1 Develop and enforce safety standards for the operation of the railway	**MTW, JRC, private sector**	Years 1-10 Ongoing
		4.1.3.2 Ensure the safety of all authorized crossings on national and regional roads through appropriate systems, including manned crossings, electronic technology, and means of communication to operating trains	**MTW, JRC, private sector**	Years 1-10 Ongoing
	4.1.4:- Expand and develop the rail as part of the tourism product	4.1.4.1 Facilitate the development of the visitor market based on brand Jamaica and heritage tourism earnings, including intellectual property rights	**JRC, private sector, JTB,** MTW, JNHT, TPDCo, JIPO	Years 1-10 Ongoing
		4.1.4.2 Develop railway stations as retail commercial centres for local passengers and tourists	**MTW, JRC, private sector,** JTB, TPDCo	Years 1-10 Ongoing
		4.1.4.3 Develop railway linkage between Montego Bay and Appleton Estate for Appleton rum tour/Governor's Coach	**JRC, private sector,** MTW, JTB, TPDCo	Years 1-3
		4.1.4.4 Explore potential for other railway tours (e.g. Bog Walk, Accompong)	**JRC, private sector,** MTW, JTB, TPDCo, JNHT	Years 1-10 Ongoing
	4.1.5:- Capitalize on non-rail assets of railway	4.1.5.1 Examine proposals to re-develop the lands of the JRC that will not	**MTW, JRC, private sector, LAs**	Years 1-10

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
	system	be required for the operations of the railway, (for example in joint ventures with the private sector)		
		4.1.5.2 Explore opportunities for JRC workshops (woodwork, upholstery and heavy machinery etc) to compete commercially for contracts on the open market	**MTW, JRC, private sector**	Years 1-10
		4.1.5.3 Ensure that the railway right-of-way be used, as far as practicable, in a joint manner for utilities such as water pipelines, fibre-optic cables or power lines, to minimize the cost of providing infrastructure and ensure that this valuable transportation corridor is used to the best advantage	**MTW, JRC, private sector**	Years 1-10 Ongoing
		4.1.5.4 Provide more convenient access points to increase ridership	**MTW, NWA, NROCC**	Years 1-10 Ongoing
Goal # 5: Establishment of Jamaica as a major integrated multimodal logistics hub				
5.1:- Development of efficient and effective institutional framework and supporting services for logistics hub	**5.1.1:-** Develop national mechanism and framework to spearhead development of logistics hub	5.1.1.1 Establish coordinating body for logistics development	**OPM, (Cabinet, Cabinet Office, Infrastructure Committee)**	Years 1-3
		5.1.1.2 Develop an approved land use plan for integrated logistics hub on the South Coast for KSAC, St. Catherine and Clarendon	**OPM, MTW,** MOAF, MIIC, NEPA, MEM, UDC, MWH, LAs	Years 1-3
		5.1.1.3 Prepare infrastructure development plan for integrated	**MTW**	Years 1-3

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
		logistics hub on the South Coast for KSAC, St. Catherine and Clarendon, with socio-economic consideration		
		5.1.1.4 Coordinate and rationalize plans for logistics facilities at Port of Kingston, Caymanas and Vernamfield	**OPM, MTW,** MOAF, MIIC, NEPA, MEM, UDC, MWH, LAs	Years 1-3
		5.1.1.5 Integrate private sector logistics and distribution projects and facilities with logistics network	**OPM, MTW, private sector**	Ongoing
		5.1.1.6 Ensure coordination of value chain activities and participation of all relevant sectors of the economy in development and operation of logistics hub	**OPM, (Cabinet, Cabinet Office, Infrastructure Committee), MTW,** MIIC, MFPS, MNS, MFAFT, MEM, PAJ, AAJ, SAJ, Customs, JAOPA, JTI, NEPA, CPC	Years 1-3 Ongoing
		5.1.1.7 Establish multimodal and multi-agency working group/committee to facilitate efficient and competitive establishment and operation of logistics hub	**OPM, Cabinet Office, MTW,** MIIC, MFPS, MEM, MNS, MFAFT, AAJ, Customs, JTI, NEPA, CPC	Years 1-3 Ongoing
		5.1.1.8 Facilitate and promote local and international private sector investment and involvement in provision of logistics facilities and services	**JTI, MTW, OPM,** MIIC, private sector	Years 1-3 Ongoing
		5.1.1.9 Promote Jamaica as major	**JTI, PAJ, MFAFT,**	Years 1-3

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
		logistics hub to a globally diverse customer base	**MTW, MIIC**, MOAF, private sector	Ongoing
		5.1.1.10 Encourage international operating standards for logistics hub	**MTW, JTI, PAJ, MFAFT, MIIC, private sector**	Years 1-3 Ongoing
	5.1.2:- Develop skilled labour force for major logistics hub	5.1.2.1 Develop and incorporate training for multi-modal logistics/supply chain in curricula of training institutes	**CMI, HEART/ NCTVET**, UTech, UWI, NCU	Years 1-3 Ongoing
		5.1.2.2 Make provision to recruit overseas workers as needed to adequately staff key jobs in logistics hub, particularly in specialized skills, to complement local workforce	**MLSS,** CMI, HEART/ NCTVET, MTW	Years 1-3 Ongoing
		5.1.2.3 Develop multi-lingual capacity among workers	**CMI, HEART/ NCTVET** UTech, UWI, NCU	Years 1-3 Ongoing
		5.1.2.4 Develop certification for logistics/warehouse workforce	**HEART/NCTVET, CMI**	Years 1-3 Ongoing
		5.1.2.5 Involve trade unions in sector planning and development	**MLSS, trade unions,** MTW, MIIC, JEF	Years 1-3 Ongoing
		5.1.2.6 Apply labour relations practices from other logistics hubs, such as productivity-linked compensation	**MLSS, private sector, trade unions**, JPC	Years 1-3 Ongoing
5.2:- Development of efficient and adequate infrastructure for logistics hub	**5.2.1:-** Develop and link major and supporting logistics centres and facilities island-wide	5.2.1.1 Develop detailed project plans, conduct socio-economic and environmental feasibility studies, and gain approvals for: • Port of Kingston	• **MTW/PAJ**	Years 1-3

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
		• Caymanas • Vernamfield • Port Esquivel	• **MIIC/UDC** • **MTW/PAJ/SPA** • **MTW/PAJ/EDC**	
		5.2.1.2 Secure financing and undertake phased implementation of main logistics centres at key sites of Port of Kingston, Caymanas, Vernamfield, Port Esquivel	**MFPS, MTW, MIIC, DBJ, PAJ, private sector**	Years 1-5 Years 6-21
		5.2.1.3 Develop and link supporting logistics centres and facilities islandwide including: • Montego Bay (Port, airport, road, rail, digiport) • Norman Manley International Airport • Rio Bueno • Portland/St. Thomas	**MTW, MIIC, PAJ, private sector**	Years 1-21
		5.2.1.4 Plan development of proposed private sector establishment of new major port & commercial/industrial complex at Port Esquivel	**MTW, NWA, UDC, PCJ, PAJ, EDC Ltd.,** NWC, NIC, LAs, MWH, OPM, NEPA, MEM, MIIC, JTI, SDC, PDC	Years 1-10
		5.2.1.5 Facilitate mail hub in Jamaica	**MTW, OPM**	Years 1-6
	5.2.2:- Develop international cargo facilities	5.2.2.1 Promote open-skies cargo policy	**MTW, MFAFT**	Years 1-3 Ongoing
		5.2.2.2 Implement Cargo Security Regime	**MTW, MNS, Port Security Corp., Jamaica Customs**	Years 1-3
		5.2.2.3 Facilitate regional distribution and feeder air cargo network	**MTW, MIIC, private sector**	Years 1-3 Ongoing

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
		5.2.2.4 Develop an international airport at Vernamfield to become the most efficient cargo hub in the region	**MTW, private sector**	Years 1-5
		5.2.2.5 Provide incentives for the development of cargo facilities e.g. free zones	**MFPS, MTW**	Years 1-3 Ongoing
		5.2.2.6 Develop supporting facilities including handling services and equipment in proximity to cargo hubs	**MTW, private sector**	Years 1-3 Ongoing
	5.2.3:- Develop safe and efficient multi-modal transport and commmunication linkages for logistics hub	5.2.3.1 Integrate road and rail construction and maintenance with planning for logistics hub	**MTW, NWA, NROCC, JRC**	Years 1-5 Ongoing
		5.2.3.2 Develop rail and road links between seaports, airports and logistics centres	**MTW, NWA, NROCC, JRC, PAJ**	Years 1-5 Ongoing
		5.2.3.3 Complete Feasibility Study of linkage requirements for Vernamfield to Highway 2000	**NROCC, Trans Jamaica**	Years 1-3
		5.2.3.4 Develop linkages with domestic air transport system	**MTW, AAJ, JCAA, private sector**	Ongoing
		5.2.3.5 Integrate planning and development of telecommunications, energy, electricity and water infrastructure with road and rail corridors	**MTW, NWA, MEM, JRC, JPSCo, NWA, OUR, NEPA, LAs**	Years 1-5 Ongoing

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
Goal # 6: Comprehensive policy, legislative, regulatory and institutional framework for transport sector				
6.1:- Development of efficient and effective policy, legislative, regulatory and institutional framework for transport sector	**6.1.1:-** Enhance policy, legislative, regulatory and institutional framework for transport sector	6.1.1.1 Finalize and promulgate Transport Policy	**MTW**	Years 1-3
		6.1.1.2 Ensure alignment of Transport Policy with other relevant policies including: • Energy Policy • Motor Vehicle Policy	**MTW, MEM,**	Years 1-3 Ongoing
		6.1.1.3 Review Motor Vehicle Policy	**MTW**	Years 1-3
		6.1.1.4 Ensure stakeholder consultation in development of policy and regulatory framework for transport sector	**MTW**	Years 1-3 Ongoing
		6.1.1.5 Formulate policies and legislation where necessary to ensure equality of opportunity, transparency and accountability	**MTW**	Ongoing
		6.1.1.6 Strengthen capacity to regulate, license and monitor land transportation	**MTW, NWA, LAs, TA, ITA, JCF**	Years 1-3 Ongoing
		6.1.1.7 Create and promulgate legislation for single Road Authority	**MTW**	Years 1-3
		6.1.1.8 Simplify and rationalize vehicle licensing and registration system	**ITA, TA**	Years 1-3 Ongoing
		6.1.1.9 Develop rights-of-way policy	**MTW**	Years 1-6
		6.1.1.10 Carry out public education on transport-related legislation including in high school (e.g. driver's education)	**MTW**	Years 1-3 Ongoing
		6.1.1.11 Participate in international	**MTW, MFAFT, MFPS**	Years 1-3

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
		organizations and ensure compliance with relevant conventions, agreements and treaties		Ongoing
		6.1.1.12 Develop policies and regulations to promote social and gender equity in transport sector	**MTW**	Years 1-3 Ongoing
	6.1.2:- Develop comprehensive policy and institutional framework for development of logistics hub	6.1.2.1 Streamline import and export procedures to facilitate trade	**MFPS, MTW, Customs,** PAJ, MAJ, MOHE, MOAF, MIIC, MNS, sector stakeholders	Years 1-6 Ongoing
		6.1.2.2 Provide regulatory framework for supporting services including: • Cargo intermediaries • Dry-docking • Bunkering • Ship finance • Marine insurance	**MTW, MFPS**	Years 1-6 Ongoing
		6.1.2.3 Develop secure integrated supply chain that complies with international standards	**MFPS, MTW, Customs,** PAJ, MAJ, MOHE, MOAF, MIIC, MNS, sector stakeholders	Years 1-6 Ongoing
		6.1.2.4 Refine and apply framework for logistics centres as free zones	**MFPS, MTW, MIIC, JTI**, PAJ, sector stakeholders	Years 1-6 Ongoing
		6.1.2.5 Carry out education of stakeholders on licensing and regulatory requirements, breaches and international best practices	**MTW, MIIC, JTI**, PAJ, SAJ, TA	Years 1-6 Ongoing

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
	6.1.3:- Establish integrated administrative and legal framework to carry out local and international safety and security obligations of the country, and mitigate security threats in the transport sector	6.1.3.1 Ensure compliance with international security regimes including International Ship and Port Security (ISPS) Code at all ports in Jamaica	**MTW, MNS, MAJ, PAJ**	Years 1-6 Ongoing
		6.1.3.2 Develop and implement security plans for each marine port and intermediaries	**PAJ, private sector, MTW, MNS, MAJ**	Years 1-6 Ongoing
		6.1.3.3 Strengthen airport and aviation security systems and measures	**MTW, MNS, AAJ, JCAA, private sector**	Years 1-6 Ongoing
		6.1.3.4 Enforce aviation safety policies and legislation, within the ICAO framework	**MTW, MNS, AAJ, JCAA**	Years 1-6 Ongoing
Goal # 7: Environmentally sustainable transport sector				
7.1:- Environmentally sustainable transport infrastructure and services	**7.1.1:-** Develop a land transportation system that is environmentally friendly	7.1.1.1 Ensure road development is in compliance with government statutory regulations	**MTW, NWA, NROCC, RMF, NEPA, LAs**	Years 1-6 Ongoing
		7.1.1.2 Develop appropriate tax and pricing structure for road users that reflect environmental costs and other externalities	**MTW, MFPS, NEPA, LAs**	Years 1-6 Ongoing
		7.1.1.3 Strengthen facilities for the testing of motor vehicle emissions to meet stipulated standards	**ITA, TA, MTW, NEPA**	Years 1-3 Ongoing
	7.1.2:- Develop environmentally sustainable air transport system	7.1.2.1 Reduce the environmental impact of air traffic including noise and air pollution	**MTW, NEPA, AAJ, JCAA, private sector**	Years 1-6 Ongoing
		7.1.2.2 Provide healthy operating	**MTW, NEPA, AAJ,**	Years 1-6

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
		environment at airports and aerodromes for employees, users and neighbouring communities	**JCAA, private sector**	Ongoing
		7.1.2.3 Strengthen and maintain involvement with the Airports Council International World Environmental Standing Committee	**MTW, AAJ, JCAA**	Years 1-6 Ongoing
	7.1.3:- Minimize negative impacts of maritime transport on the marine environment and coastal zone and users	7.1.3.1 Pass marine pollution legislation (Marpol) to ensure the sustainable development of the shipping industry	**MTW, MAJ, PAJ, NEPA**	Years 1-3
		7.1.3.2 Strengthen collaboration with the Caribbean and other Regional MOUs on implementation of Port State Control regime	**MTW, MAJ, PAJ**	Years 1-6 Ongoing
	7.1.4:- Establish and maintain appropriate safety, security and environmental systems and standards at international levels	7.1.4.1 Support streamlining of environmental permitting process	**MTW, OPM, MOHE, NEPA, LAs**	Years 1-6 Ongoing
		7.1.4.2 Support strengthening of environmental enforcement agencies and mechanisms, including provision of training and equipment	**MTW, OPM, MOHE, NEPA**, Coast Guard, Marine Police, Fire Brigade	Years 1-6 Ongoing
		7.1.4.3 Encourage adoption of relevant ISO standards (including 9000 and 14000)	**MTW, NEPA, JBS, private sector**	Years 1-6 Ongoing
		7.1.4.4 Strengthen public education and awareness of environmental and security regulations	**MTW, OPM, MOHE, NEPA**	Years 1-3 Ongoing
		7.1.4.5 Switch from a 'evasion assumed' to 'honesty assumed' model, with	**MFPS, MTW, Customs,** PAJ, MAJ,	Years 1-6 Ongoing

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
		a strengthening of the audit and enforcement teams and strong punitive measures	MIIC, MNS, sector stakeholders	
		6.1.2.6 Promote improved self-regulation	**MTW, MIIC, JTI**, PAJ, SAJ, TA	Years 1-6 Ongoing
	7.1.5:- Integrate transport planning into sustainable regional, urban and rural planning	7.1.5.1 Integrate transport and urban and regional planning for: • Parking • Inter transit transfer • Pedestrianization • Corridor rationalization	**MTW, OPM, MOHE, NEPA, LAs, UDC**	Years 1-6 Ongoing
		7.1.5.2 Apply Smart Growth principles in urban and transportation planning for human settlements	**MTW, OPM, MOHE, NEPA, LAs, UDC**	Years 1-6 Ongoing
		7.1.5.3 Integrate development of shipping channels, turning basins, anchorage and berths with environmental and spatial planning and coastal zone management	**MTW, OPM, MOHE, NEPA, LAs, UDC, PAJ, MAJ**	Years 1-6 Ongoing
		7.1.5.4 Ensure that Environmental Impact Assessment (EIA) Studies are undertaken for all new transport infrastructure projects	**MTW, OPM, MOHE, NEPA, LAs, UDC**	Years 1-6 Ongoing
		7.1.5.5 Involve stakeholder consultation in planning and development of transport system	**MTW, NWA, TA, NEPA, LAs**	Years 1-6 Ongoing
	7.1.6:- Strengthen resilience of transport sector to hazards and climate	7.1.6.1 Strengthen resilience of transport sector to natural and manmade hazards	**MTW, NWA, NEPA, LAs, UDC, NROCC, PAJ, AAJ, ODPEM,**	Years 1-6 Ongoing

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
	change		**private sector**	
		7.1.6.2 Incorporate climate change adaptation and mitigation considerations in the design and construction of transport infrastructure	**MTW, MEM, NWA, NEPA, LAs, UDC, NROCC, PAJ, AAJ, ODPEM, private sector**	Years 1-6 Ongoing
7.2:- High levels of energy security, conservation and efficiency in the transport sector	**7.2.1:-** Encourage greater energy efficiency and lower energy costs in the transport sector	7.2.1.1 Promote greater vehicle fuel efficiency and the use of more fuel-efficient vehicles in the transport sector	**MTW, MEM, MFPS, private sector**	Years 1-6 Ongoing
		7.2.1.2 Establish tax on petrol at levels to encourage conservation	**MFPS, MTW, MEM**	Years 1-3
		7.2.1.3 Promote carpooling opportunities e.g. preferential tolls, high-occupancy vehicle (HOV) lanes	**MTW, MEM, TA, ITA, LAs**	Years 1-6 Ongoing
		7.2.1.4 Encourage flexi-hours in labour markets in coordination with school transport	**MTW, MEM, MLSS, MOE**	Years 1-6 Ongoing
		7.2.1.5 Encourage the use of energy-efficient transport modes including pedestrian and bicycle modes	**MTW, NWA**, NEPA, LAs	Years 1-6 Ongoing
	7.2.2:- Diversify the energy supply in the transport sector	7.2.2.1 Promote use of alternative fuels in land transport sector including CNG, LPG, ethanol and other bio-fuels	**MTW, MEM, MFPS, private sector**	Years 1-6 Ongoing
		7.2.2.2 Provide adequate infrastructure for transition to alternative	**MTW, NWA, MEM**, NEPA, LAs	Years 1-6 Ongoing

Outcomes	Strategies	Actions	Responsible Agencies and Stakeholders	Time-Frame
		energy vehicles		
		7.2.2.3 Explore potential for use of alternate fuels in aviation and shipping industries	**MTW, MEM, AAJ, PAJ, SAJ, airlines**	Years 1-10 Ongoing
		7.2.2.4 Explore potential for provision of shore-based power ("cold ironing") for cruise ships and other ships (e.g. container ships)	**MTW, MEM, PAJ, SAJ**	Years 1-10 Ongoing
	7.2.3:- Reduce contribution of the transport sector to global climate change	7.2.3.1 Support inclusion of transport emissions including aviation and shipping emissions under international emissions trading regime and the United Nations Framework Convention on Climate Change (UNFCCC)	**MTW, MEM, OPM, NEPA, MOHE, Met Office**	Years 1-10 Ongoing

Note: Responsible Agencies and Stakeholders **underlined in bold** indicate the lead agencies for each action.

7. Appendices

7.1 Appendix 1 – List of Task Force Members

Transport Task Force

Hon. Noel Hylton (Chairman)	Chairman, Port Authority of Jamaica (PAJ)
Mr. Joseph A. Matalon (Vice-Chairman)	Director, Computerised Systems Limited
Mr. Ryan White	President, Jamaica Urban Transit Company (JUTC)
Mr. Keith Goodison	Managing Director, Transport Authority
Mr. Earl Richards	President, Airports Authority of Jamaica
Mr. Milton Hodelin	Chief Executive Officer, National Works Agency (NWA)
Col. Torrance Lewis	Director General, Jamaica Civil Aviation Authority (JCAA)
Col. Oscar Derby	Deputy Director General - Regulatory Affairs, JCAA
Dr. Favian Dixon	Research Officer, JCAA
Mr. Paul Pennicook	Senior Vice-President, Marketing and Sales, Air Jamaica Limited
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 (CMI)
Rear Admiral Peter Brady	Director General, Maritime Authority of Jamaica (MAJ)
Mr. Eric Deans	Director of Shipping and Policy Research, MAJ
Major Richard Risden	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
Mr. John Marzouca	Managing Director, Zoukie Trucking Services Limited
Ms. Angella Smith	Ministry of Transport and Works
Ms. Jacqueline Darwood	JUTA
Mr. Desmond Hall	University of Technology
Mr. Kirk Kennedy	Jamaica Trade and Invest (JTI)
Dr. Leary Myers	Chief Executive Officer, National Environment and Planning Agency (NEPA)
Ms. Marvalyn Clarke	PAJ
Ms. Francine Williams	PAJ
Mr. Pat. Belinfanti	PAJ

Mr. Hopeton Delisser	PAJ
Mr. Michael Bernard	President, Shipping Association of Jamaica (SAJ)
Ms. Joan Williams	Transport Authority

Land Transport Sub-Committee

Mr. Milton Hodelin	Chief Executive Officer, National Works Agency (NWA)
Mr. Andre Hylton	Andre's Auto Supplies/ Motor Repairer Association of Jamaica
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 (JUTC)
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 (KSAC)
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
Mr. Garth E. Jackson	National Water Commission (NWC)
Mr. Billy Meikle	NWC
Ms. Tanya Bedward	Ministry of Transport and Works
Ms. Marvette Brown	National Environment and Planning Agency (NEPA)
Mr. Kirk Finnikin	Service Planning Manager, JUTC
Mr. Jumoone Robinson	St. Catherine Parish Council
Mr. Andre Hylton	MRAJ, Motor Rep. Association
Ms. Miriam Walters	Minott Services Ltd.
Mrs. Andrine Jackson-Scott	Transport Authority
Ms. Sandra Myers	Ministry of Transport and Works
Mr. Eran Spiro	Ministry of Transport and Works

Air Transport Sub-Committee

Col. Torrance Lewis	Director General, Jamaica Civil Aviation Authority (JCAA)
Lt. Col. Oscar Derby	Deputy Director General-Regulatory Affairs, JCAA
Dr. Favian Dixon	Research Officer, JCAA
Mrs. Jacqueline Fairclough	Director-Economics Regulation, JCAA
Mr. Paul Pennicook	Senior Vice President-Sales and Marketing, Air Jamaica Limited

Col. Anthony Stern	Secretary General, Jamaican Aviators, Operators, and Pilots Association (JAOPA)
Mr. Chris Read	Managing Director, Airways International Limited/Air Pack Express
Ms. Valerie Simpson	Director of Policy, Ministry of Housing, Transport, Water and Works (MHTWW)
Mr. Subodh Karnik	Air Jamaica Limited
Mr. Eran Spiro	Ministry of Transport and Works

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)
Ms. Claudia Grant	Maritime Authority of Jamaica
Capt. J. K. Mathur	Caribbean Maritime Institute
Mr. Bruce Donaldson	Esquivel Development Corporation Limited
Mr. Audley Harris	Petrojam Limited
Ms. Cheryl Williamson	Ministry of Transport and Works
Ms. J. Barrow	Ministry of Transport and Works
Ms. Julliet Rose	Ministry of Transport and Works
Mr. Eran Spiro	Ministry of Transport and Works
Mr. Edmond Marsh	PAJ
Mr. John Ralston	Task Weld Group
Mr. Michael Bernard	Shipping Association of Jamaica

Note: Positions of Task Force Members are given as at the time of their appointment to the Transport Task Force and Sub-Committees.

7.2 Appendix 2 – Listing of Task Force Meetings

Transport Task Force:

- Thursday, April 12, 2007
- Monday, April 30, 2007 (with sub-committee members)
- Monday, May 14, 2007
- Wednesday, May 30, 2007
- Tuesday, June 12, 2007
- Friday, June 22, 2007
- Friday, September 28, 2007
- Friday, January 18, 2008

Land Transport Sub-Committee:

- Tuesday, May 8, 2007
- Tuesday, May 15, 2007
- Tuesday, June 5, 2007
- Wednesday July 4, 2007
- Thursday, November 27, 2008
- Friday, December 5, 2008
- Friday, December 12, 2008
- Friday, January 9, 2009
- Friday, January 23, 2009
- Friday, February 6, 2009

Air Transport Sub-Committee:

- Friday, May 25, 2007
- Wednesday, July 18, 2007
- Friday, November 28, 2008
- Monday, December 8, 2008
- Friday, January 30, 2009

Maritime Transport Sub-Committee:

- Friday, May 4, 2007
- Monday, May 21, 2007
- Friday, June 8, 2007
- Thursday, July 5, 2007
- Wednesday, November 26, 2008
- Monday, December 15, 2008
- Tuesday, January 13, 2009
- Wednesday, January 21, 2009
- Thursday, January 29, 2009
- Wednesday, February 4, 2009

7.3 Appendix 3 – List of Acronyms and Abbreviations

AAJ	Airports Authority of Jamaica
AEROTEL	Aeronautical Telecommunications Limited
ARIP	Airport Reform and Improvement Programme
CMI	Caribbean Maritime Institute
CNG	Compressed natural gas
CPC	Chief Parliamentary Counsel
DBJ	Development Bank of Jamaica
EDC	Esquivel Development Corporation Limited
FAA	Federal Aviation Administration
GDP	Gross Domestic Product
GOJ	Government of Jamaica
HEART/NTA	Heart Trust/National Training Agency
IAJ	Insurance Association of Jamaica
ICAO	International Civil Aviation Organization
IDP	International Development Partner
IMO	International Maritime Organization
ISPS	International Ship and Port Security
ITA	Island Traffic Authority
JAOPA	Jamaican Aviators, Operators and Pilots Association
JBI	Jamaica Bauxite Institute
JBS	Jamaica Bureau of Standards
JCAA	Jamaica Civil Aviation Authority
JCF	Jamaica Constabulary Force
JDF	Jamaica Defense Force
JEF	Jamaica Employers' Federation
JHTA	Jamaica Hotel and Tourist Association
JIPO	Jamaica Intellectual Property Office
JNHT	Jamaica National Heritage Trust
JPC	Jamaica Productivity Centre
JPSCo	Jamaica Public Service Company Limited
JRC	Jamaica Railway Corporation
JSPCA	Jamaica Society for the Prevention of Cruelty to Animals
JTI	Jamaica Trade and Invest
JUTC	Jamaica Urban Transit Company
KMTR	Kingston Metropolitan Region
LA	Local Authority
LNG	Liquefied natural gas
LPG	Liquefied petroleum gas
MARPOL	Marine Pollution
MAJ	Maritime Authority of Jamaica
MBM	Montego Bay Metro Limited
MEM	Ministry of Energy and Mining
MFAFT	Ministry of Foreign Affairs and Foreign Trade
MFPS	Ministry of Finance and the Public Service
MHTWW	Ministry of Housing, Transport, Water and Works

MIIC	Ministry of Industry, Investment and Commerce
MITEC	Ministry of Industry, Technology, Energy and Commerce
MLSS	Ministry of Labour and Social Security
MMTH	Metropolitan Management Transport Holdings Ltd.
MNS	Ministry of National Security
MOAF	Ministry of Agriculture and Fisheries
MOHE	Ministry of Health and Environment
MOT	Ministry of Tourism
MOU	Memorandum of Understanding
MTW	Ministry of Transport and Works
MWH	Ministry of Water and Housing
NCTVET	National Council on Technical and Vocational Education and Training
NCU	Northern Caribbean University
NEPA	National Environment and Planning Agency
NIC	National Irrigation Commission
NMIA	Norman Manley International Airport
NROCC	National Road Operating and Construction Company
NWA	National Works Agency
NWC	National Water Commission
ODPEM	Office of Disaster Preparedness and Emergency Management
OPM	Office of the Prime Minister
OUR	Office of Utilities Regulation
PAJ	Port Authority of Jamaica
PCJ	Petroleum Corporation of Jamaica
PDC	Parish Development Committee
PIOJ	Planning Institute of Jamaica
RMF	Road Maintenance Fund
RMFB	Road Maintenance Fund Board
RSU	Road Safety Unit
SAJ	Shipping Association of Jamaica
SDC	Social Development Commission
SIA	Sangster International Airport
SPA	Surrey Paving and Aggregate
TA	Transport Authority
TPDCo	Tourism Product Development Company
UCJ	University Council of Jamaica
UDC	Urban Development Corporation
Utech	University of Technology
UWI	University of the West Indies
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 also is 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; and other activities needed to get goods to the consumer in the state for final use or consumption.

The conditions for logistics activities are 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 and Selected Bibliography

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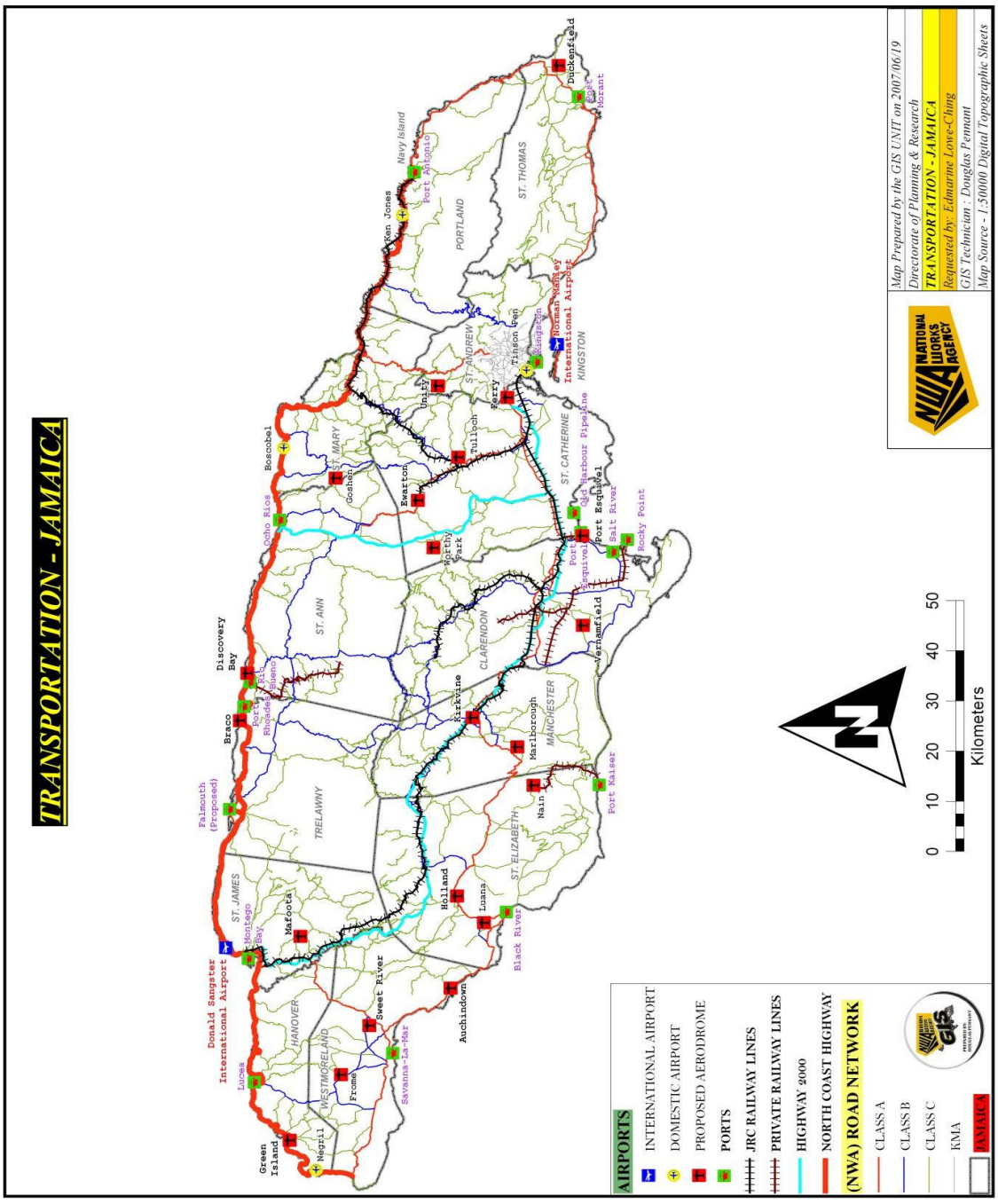
7.6 Appendix 6 – Figure 3: Map of Transport Sector



7.7 Appendix 7 – Tables 4-6

Table 4: Public Wharves: Port Profile 2004-2005
Table 5: Kingston Sufferance Wharves and Out Ports: Port Profile 2004-2005
Table 6: Maritime Infrastructure Developments

Table 4: 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 Cranes 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 Break-bulk
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 Break-bulk, Cruise passengers

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

Table 5: 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 6: Maritime Infrastructure Developments

Programme	Description	Timeline	Entity Responsible	Remarks
Kingston Container Terminal Development	Phase 5 - procurement of equipment and civil works to increase terminal capacity to ▪ Phase 5A- 2,500,000 TEUs. Phase 5B- 3,200,000 TEUs Projected cost: US$103,400,000 Phase 6 - N/A Phase 7 - N/A	April 2007 - October 2009	Port Authority of Jamaica	Project is underway
Kingston Wharves Infrastructure Development	Rebuilding and expansion of Berths 8&9 Projected Cost : US$26,600,000	May 2006 – August 2007	Kingston Wharves Ltd.	Project is underway
Petrojam	Rehabilitation of Esso Bunkering Terminal	2010	Petrojam	
Ocho Rios Cruise Ship Terminal Development	Expansion to increase cruise ship-berthing capacity to four 4th generation vessels (31 1m). Projected cost: US$43,000,000	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 4th 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