GOVERNMENT OF JAMAICA

Major Development Infrastructure Programme (MIDP)

Under
The Ministry of Transport and Works and Housing
Through its Executive Body
The National Works Agency

1.0 INTRODUCTION

Jamaica, with a population of approximately 2.7 million, is known to have one of the highest road densities in the world, having the main and parochial road network of 5,286km and 9,962km respectively - a total of 15,248 km - traversing an area of only 11,400km^2. The total value of this road network is estimated at over US$70 billion.

The Jamaican economy relies heavily on road transport for passenger and freight movement. Although a large percentage of these roads have been improved over time, it is recognized that they were never originally constructed to modern engineering standards, but have evolved in many cases, from bridle tracks. The absence of proper road profiles and drainage facilities have taken their toll over the years and the resulting condition of much of the network, particularly the tertiary roads, can be regarded as ranging from poor to very poor.

This, when coupled with the high traffic volumes, leads to:

- Congestion;
- Increase in crashes;, and
- Increase in vehicle operating costs.

MIDP addresses the urgent need to increase safety on our roads by improving a number of important corridors to arterial standards via widening, rehabilitation and realignment where necessary. The programme calls for the improvement of priority road segments and bridges islandwide, commencing in financial year 2013/2014.

The estimated cost of the programme is US$350 million.

2.0 BACKGROUND

MIDP is a follow-up of the Jamaica Development Infrastructure Programme (JDIP), funded by China Exim bank and implemented by China Harbour Engineering Company (CHEC) at a cost of US$400 million, and saw to the implementation of the following projects:

- Construction of the Christiana Bypass, in Manchester.
- Construction of the Rio Grande Bridge, Portland.
- Construction of Westmoreland Bridge, St. Mary.
- Construction of Cassia Park Bridge, St. Andrew.
- Construction of Queensborough Bridge, St. Andrew.
- Construction of Dawkins Pen Bridge, St. Catherine.
- Fern Gully road and drainage improvement, St. Ann.
- Rehabilitation of housing scheme and parish council roads, across the island.
- Rehabilitation of urban, secondary and tertiary main roads, islandwide.
- Patching of main roads, islandwide.

The new infrastructure programme MIDP, will also focus on upgrading additional key arterial, secondary and tertiary roads along the network.

3.0 PROGRAMME SCOPE

- Under the MIDP, the National Works Agency has identified over 700km of prioritised roads which are in need of urgent intervention in order to adequately and safely handle the current average daily traffic being experienced.

- Rehabilitation or reconstruction of critical bridges as identified by the NWA.

- Critical retaining walls which have been damaged or being undermined on other sections of the road network will be rehabilitated or reconstructed under the programme.

- Protective works such as bunding, construction of gabion walls, placement of boulders, will also be carried out where rivers and gullies negatively impact on the network.

Special attention will be given to the drainage requirement of each road segment being considered under this programme, but it is recognized that funding limitations may prevent the wholescale implementation of the identified drainage works.

Finally, it is realized that a number of worthwhile projects were started under JDIP 1, but for a variety of reasons were never completed. All such projects will be completed under this programme – MIDP.

4.0 PROGRMME FINANCING

The MIDP is being funded by the China Exim Bank in the amount of US$300 million, with counterpart financing of US$52.9M from the Government of Jamaica. Negotiations pertinent to the terms and conditions of the loan will be the prerogative of the Ministry of Finance & Planning. The programme will be divided into three (3) major components as listed below:

Component	Cost (US$)
Major Works (to be implemented by China Harbour Construction)	220,000,000
Jamaica Emergency Employment Programme (JEEP)	50,000,000
Other Works (to include rehabilitation, intersection improvement, periodic maintenance, river training	82,941,765
Grand Total	352,941,765

5.0 PROGRAMME JUSTIFICATION

The poor state of the road network is reflected in the large backlog of deferred maintenance. The project is urgently required at this time so as to stem the rapid deterioration of these critical roads now taking place and prevent further loss to an extremely valuable though vulnerable infrastructure. Safety along these corridors would increase and assist the government in reaching and maintaining its target of Under 300 fatalities resulting from crashes and collisions in any given year. it is of note that the number of fatalities on record for the year 2012 showed a marked reduction at 261 when compared to recent years.

6.0 DEMAND ANALYSIS

The roads slated for periodic maintenance and rehabilitation are all part of the transportation network and are essential for the movement of goods and services through these parishes

Further deterioration of these roads would adversely impact the economy of these communities, as longer detour roads would have to be travelled resulting in increased travel time and vehicle operating costs.

Improvement to a number of these roads can open new regions to the benefit of the economy, including tourism on a larger scale, and allowing for speedier and safer access of agricultural produce to markets across the island.

6.1 Project Selection Criteria

Roads were selected under MIDP, based on the following criteria:

- Regional importance;
- Connectivity of route;
- Traffic Volume;
- Condition/ in need of critical intervention;
- Critical infrastructure affected;
- Corridors that will support the Government's development objectives.

The NWA has based the selection of roads on a prioritisation methodology that has been shared with the Ministry of Transport, Works and Housing. A number of assumptions were required to develop a workable model, matched with availability of data. The ranking methodology culminated with the development of an index through which competing projects are ranked.

The ranking criteria are as follows:

- *Roads that have Tourism Product based attractions were given a score based on the total number of rooms along the road section*

Tourism Rank	
0	No Hotels/Attraction accessed along this route
1	SMALL HOTELS - Hotels or attraction accessed along this route < 10 rooms
2	MEDIUM HOTELS - Hotels or attraction accessed along this route 10 - 50 rooms
3	LARGE HOTELS - Hotels or attraction accessed along this route > 50 rooms

- *Roads that provide access to active agricultural producing and or processing facilities*

Agriculture Rank	
0	No farms
1	Small Farms accessed along this route - Total of all farms less than 100 acres
2	Medium Farms accessed along this route - Total of all farms accessed 100 - 500 acres
3	Large Farms accessed along this route - Total of all farms accessed > 500 acres

- *Roads that provide access to manufacturing facilities*

Manufacturing Facilities Rank	
0	No facilities accessed along this route
1	Small Facilities accessed along this route (total employ of all facilities less than 50 persons)
2	Medium Facilities accessed along this route (total employ of all facilities 50 100 persons)
3	Large Facilities accessed along this route (total employ of all facilities > 100 persons)

- *Roads that provide access to schools, police stations, emergency shelters and other emergency facilities or critical government institutions.*

School/Hospital/Emergency Shelter Rank	
1	Any one
3	Any two
5	More than two OR Large Schools < 1000 students
3	Large schools > 1000 students

- *The last factor is the class assigned to each road in the network management system with A roads receiving the highest ranking, primarily since they tend to have the highest miles driven.*

Road Class Rank	
5	A
3	B
2	C
1	PC
1	FARM

Weighting

Weighting factors are introduced to complete the formula.

Weighting (W)	OVERALL RANKING CRITERIA (ORC)
3	Tourism Rank
2	Agriculture Rank
0.0002	**Traffic Factor**
1	School/Hospital/Emergency Shelter Rank
2	Road Class Rank
1	Manufacturing Facilities Rank

The ranking formula is as follows:

= (Tourism X Tourism W) + (agriculture X Agriculture W) + (Manufacturing X Manufacturing W) + (School X School W) + (Road Class X Road Class W) + (Traffic Volume X Traffic W)

The above formula is computed for each road section in the project and a value determined which provides a direct comparison between the different roads. This value is included in the table at appendix which shows ranked major items within the overall project

7.0 PROJECT IMPLEMENTATION

7.1 Major Works

It is recommended that these works be implemented by the contractor utilising design and build contracts. This means that a brief will be provided by the client/engineer to the contractor indicating requirements and expected outcomes. The contractor will then

price in accordance with the requirements and negotiations will ensue to determine the final cost for each of the major projects. The contractor is responsible for the performance of the roads/bridges delivered for a period to be determined by the client/engineer

7.2 Other Works

These would be implemented in the conventional way where specifications/drawings are provided by the client/ engineer and the contractor is asked to price accordingly.

In all instances, the standard pricing schedules for civil engineering works developed by the NWA shall form the basis for project prices.

7.3 Project Management and Supervision

7.3.1 The NWA is responsible for the Quality Assurance monitoring of the project. This will include routine monitoring, random testing, project/ surveillance auditing and reporting on works and their conformance to contract/ regulatory requirements. These activities will be done as per the established NWA Quality Assurance department procedures.

7.3.2 The Contractor as stipulated in FIDIC is responsible for quality control testing in accordance with the NWA specification. As such, for any subcontracts let under the main contractor it remains the contractor's responsibility to ensure that the works are executed in accordance with the specification. Each interim payment certificate must be accompanied by the requisite test results in support of the works for which claims are being made.

7.3.3 Upon substantial completion of the project, a "Take–over" exercise will be conducted to confirm the execution of the works in accordance with the scope and terms of the contract.

7.3.4 Subsequent to the issue of the taking over certificate the defect liability period commences, during which time the contractor is obliged to remedy all outstanding defects noted in the certificate together with any on other defects which may arise during the defects liability period resulting from material and workmanship. These in addition to any orders instructed by the engineer for which he will be compensated.

7.3.5 At the end of the defects liability period a final inspection must be conducted and where works are found to be satisfactory, the contractor is relieved of all further responsibility with the issue of a Defect Liability Certificate.

8.0 ENVIRONMENTAL STUDY

8.1 Objective and Scope

All potentially adverse impacts can be mitigated to an acceptable level through the enforcement of suitable environmental protection clauses in the construction contracts, and residual impact is expected to be non-significant in all cases. All works contemplated under the programme will be subjected to the appropriate statutory environmental protocols.

The programme will not involve construction or major earth work activities in areas which have been designated, or are likely to be designated as national parks or as other forms of protected area, coastal areas and or natural forests.