

GOVERNMENT OF JAMAICA

NATIONAL WORKS AGENCY

PROJECT PROFILE

Constant Spring Road (between Long Lane and
Dunrobin Avenue)

National Works Agency
Directorate of Planning and Research
140 Maxfield Avenue
Kingston 10
Jamaica, W.I.

Novemer 2017

1. INTRODUCTION

Kingston is the capital city of Jamaica and also the main hub for commerce and transportation on the island. All the nation's leading banking institutions are either based in downtown Kingston or New Kingston. However the transportation sector also plays a major economic role within Kingston. Newport West along the western shore of Kingston Harbour, one of the region's highest capacity container terminals, and the Norman Manley International Airport highlight extent of importance the Government of Jamaica has placed on transportation infrastructure within Kingston.

The improvements made to Kingston's port and airport facilities however must be complemented by the upgrading and enhancement of land based transport infrastructure. While the restoration of the rail network is being contemplated the road infrastructure most be maintained at first world standards for Jamaica to fully benefit from its air and sea transport facilities.

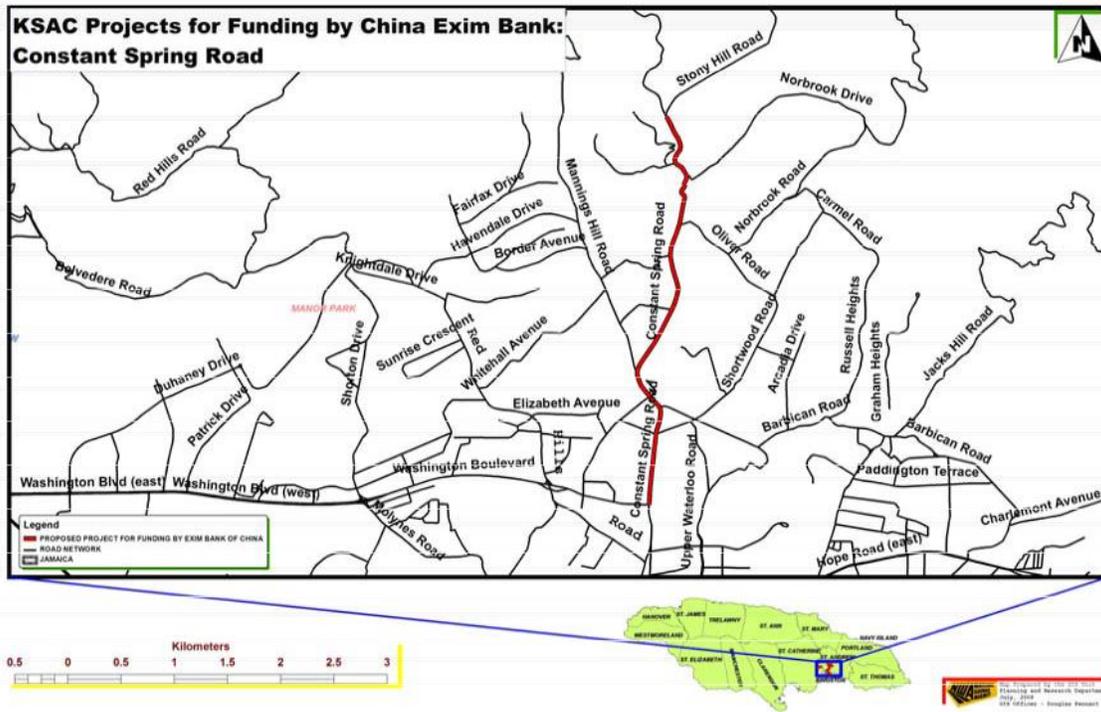
2. BACKGROUND

Constant Spring Road is the main north to south corridor linking the residential communities of St Andrew to the important business districts of Half Way Tree and New Kingston. This corridor also serves as the gateway into Kingston for motorist traveling from the parishes of St Mary and Portland.

The implementation of this project can be viewed as a continuation of the previous expansion which saw that segment of Constant Spring Road between West Kingshouse Road and Dunrobin Avenue being widened as well as the construction of an additional 2 lane bridge over the Sandy Gully.

3. LOCATION

The carriageway upgrade starts at the intersection of Constant Spring Road and Norbrook Drive in the north and runs southward for approximately 4 km to Red Hills/Eastwood Park Road intersection, with spot improvements at Long Lane/ Old Stony Hill Road and Stillwell Road.



4. HISTORY

Constant Spring road was built in the early 1900's as a two lane carriageway with reservation provided for expansion in the in the future. The corridor has been expanded with the provision of an additional 2 lane bridge over the Sandy Gully and the widening of the corridor to West Kings House Road. The reservation was enforced as part of the "Development Order 1966" are as follows:

- The portion between Hagley Park Road and Olivier Rd is 100'
- The portion between Olivier Road and Grosvenor Terrace is 70'

Traffic volume in 2003 was 29,696 vehicles per day on Constant Spring Road in this section

The unimproved section provide the only south bound access route for residential communities to the north and northwest of Kingston and also accommodates traffic coming from the northern parishes of St Mary and Portland.

5. EXISTING ROAD

Traffic Count

The average annual daily traffic during 2008 was 29,696 vehicles per day traveling in both directions along Constant Spring Road

Design speed

The posted speed limit along this thoroughfare is 50 km/h the design speed will be 80km/h.

Grade

The terrain gradually declines from 191m at Long Lane to 86m at Dunrobin Avenue in a south easterly direction.

Horizontal

The horizontal alignment has the typical minor deflections (approximately 2.5% slopes). Presently the section to be improved has two undivided lanes.

Lane width

There are two lanes with widths of 3.7m and no provision for shoulders.

Sidewalk Width

There are sidewalks on both sides of Constant Spring Road but the widths vary.

Right of Way

The right of way throughout the corridor varies from 21.3m to 30.4m.

Wearing Surface

The existing wearing surface is Asphaltic Concrete. Most sections have good surface condition (International Roughness Index of the order of 4.5m/km) while there are a few small areas heavily patched and thus quite rough.

6. PROJECT OBJECTIVE

The intended purpose of this project is to reduce traffic congestion and travel time along the corridor and connecting roadways and communities. It is also intended to minimize the usage of community roads as alternatives and other undesirable results of congested trunk routes. Main benefits of this project will be a reduction in travel time along the corridor, an increase in capacity, a reduction in congestion and a major improvement in safety and ride comfort. Adjoining communities can look forward to a reduction in through traffic and thus enhance safety and quality of life particularly during the peak periods.

The execution of this project will lead to:

- Significant improvement in the peak hour travel time for motorist will be experienced.
- The carrying capacity of the corridor will be significantly improved from 1,600 vehicles per hour (vph) to 3400 vph. This will relieve oversaturated local roadways currently being used as alternate routes.
- Intersections will be controlled by left in/left out maneuvers, reducing the number of conflict points along the corridor by improving access onto the major road from the minor ones therefore improving safety.

- Traffic signal control at the popular intersections providing an orderly and efficient means of managing intersections.
- Reduction of traffic on local roads thus increasing safety and quality of life in surrounding communities.
- Reduction in fuel consumption by vehicles operating on this corridor.
- Reduction in commuter frustration
- Reduced vehicular emissions
- Improvements in public transport travel time are expected.
- Improvement in drainage and corridor performance in inclement weather.

7. DEMAND ANALYSIS

The demand for this project is fueled by the increasing congestion along the corridor as well as lengthy delays being experienced by the motorists trying to access the corridor from side roads.

With the improved travel times and capacity comes several user benefits

- Reduced gas consumption
- Reduced commute time
- Reduction in potential for accidents
- Sidewalks for pedestrians and controlled pedestrian crossings for safety enhancement
- Vehicle emission reduction
- With drainage improvement comes improved driver safety and more efficient travel times on wet /rainy days.

8. SCOPE OF WORKS

The improvements will entail an increase from 2 lanes to 4 lanes between Norbrook Drive and Dunrobin Avenue, the widening of the Long Lane/Old Stony Hill Road intersection to accommodate turning lanes and design changes to Manor Park. The improvements will include:

- Intersection geometry improvements with upgraded traffic signals at:
 - Red Hills Road and Eastwood Park Road,
 - Constant Spring Road and West Kings House Road,
 - Constant Spring Road and Dunrobin Avenue,
 - Constant Spring Road and Shortwood Road
 - Constant Spring Road and West Avenue
 - Constant Spring and Tax Office/Immaculate Conception High;
- Installation of new traffic signals with geometric improvements to include turning lanes at:
 - Stony Hill Road and Stilwell Road
 - Stony Hill Road and Old Stony Hill Road
 - Constant Spring Road and Mannings Hill Road
 - Constant Spring Road and Constant Terrace/Hillman Road
 - Constant Spring Road and Clifton Boulevard
 - Constant Spring Road and Manor Centre
 - Constant Spring Road and Grosvenor Terrace bridge
 - Constant Spring Road and Norbrook Drive
- Pedestrian phases and associated signal equipment at all existing and proposed signalized intersections to facilitate safe road crossings for pedestrians
- Installation of 1.8 m wide sidewalks on both sides of the road
- Relocation of utility poles to the back of sidewalks (making at least 1.5m of sidewalk free of obstruction) to provide accessible pedestrian walkways that can accommodate wheelchairs and the visually impaired
- Upgrading of storm water drainage system and installation of sewerage
- Construction of bus laybys

9. SOURCES OF MATERIALS

All aggregates will be obtained locally from any of several quarries within 50 km of the project site.

Asphalt/bitumen will be imported through PetroJam in the normal manner as this material is not produced in Jamaica.

HDPE pipes and the reinforced drop inlet boxes with gratings will be procured from local suppliers.

Traffic light infrastructure will be imported from the USA and installed under the direct supervision of the NWA.

Road marking and street signs will be supplied locally through an experienced supplier.

10. COST ESTIMATE

The project is estimated to cost **US\$ 19,175,000.00**

11. FEASIBILITY

For this analysis a number of assumptions were made as listed below:

- The section to be improved has a length of **4.0**km and an existing International Roughness Index (IRI) of **4.5**m/km.
- The annual average daily traffic volume on the corridor has been projected to be approximately **29,697** vehicles per day.
- The project life for the roadworks is forecasted for 20 years with a construction period of **18** months.
- average vehicle speeds would be **50** km/h
- the newly constructed surface will have an International Roughness Index of 2m/km

A discount rate of 12% was used as well as an average growth rate of 3% per annum for traffic.

The computed internal rate of return has carried out using the Highway Development Model (HDM) is **59.7%** and a Net Present Value of **US\$104,630,000.00**.

12. FINANCING

The GOJ will provide approximately 15% of the revenue for the project.

The remaining 85% will be provided by the China ExIm Bank.

13. CASH FLOW

The project is expected to run for 18 months:

- For the first year 70% of the projected sum, US\$ 13.4 M will be required;
- In the second year the remaining sum of US\$5.8 M will be dispersed.

14. ORGANIZATION

The NWA will manage the project through its Directorate of Major Projects.