

GOVERNMENT OF THE CO-OPERATIVE
REPUBLIC OF GUYANA

Ministry of Public Works
WORKS SERVICES GROUP



Project Summary

**Replacement of the Existing Demerara Harbour
Bridge**

August 2021

1 Background

The Demerara Harbour Bridge (DHB) was constructed by the UK firm Mabey and Johnson and commissioned on July 02, 1978. Apart from providing direct access to Administrative Region No. 3, it also provides indirect access from Georgetown to the Essequibo county (Regions Nos. 1, 2, 7, 8) – areas where activities such as minerals exploration, logging, ecotourism and rice cultivation account for the major part of Guyana's GDP. The bridge is an important link in the road that connects the most populated areas, between Charity in the west via Georgetown to the Surinam border in the east.

The pontoon bridge is maintained through tolls. Tolls at the Demerara Harbour Bridge are collected manually in one direction at the Toll Plaza located at the eastern abutment of the bridge in cash payments only. Tolls are charged based on the vehicle type and weight. The current two-lane steel floating bridge connects the East Bank at Peters Hall with the West Bank at Meer Zorgen. Some 40,000-45,000 people (10,000 vehicles per direction) use the bridge each day. The market share of the bridge for the passenger segment is about 85% (the other 15% use speedboats).

The current bridge requires fundamental overhaul, replacement, maintenance and repair. Road capacity is limited due to the retraction system. Opening times are long due to the slow retraction process. The structure is vulnerable for incidents from vehicles and vessels as well as river forces. As the bridge is the only connection, the West Bank economy and population will suffer significantly in case the bridge cannot be used over longer time. There is currently no good alternative.

Reference is made to the situation in 1988 when the bridge was out of operation for a few weeks. In addition, the long and frequent bridge openings impact traffic. Bridge opening time depends on water levels and flow velocities (tide). When appropriate tidal conditions for opening coincide with (road) rush hours, large traffic jams occur. The retraction time to open the bridge allowing river traffic pass is long and the mechanism sometimes fails resulting in either river or road traffic being unable to pass. This causes unnecessary delays and demurrage for the ships and congestion for road traffic. The new bridge will replace the existing bridge. As soon as the new bridge is in operation the old bridge will be closed and demolished.

2 Project Description

An effective transportation system connects people to the supply and distribution of goods and services in both social and economic sectors and is therefore essential to sustainable growth and development. Consequently, the Government of the Co-operative Republic of Guyana (GOGY) seeks to replace the existing Demerara Harbour Bridge which has surpassed its technical life, in an effort to improve the efficiency of the transport system.

The replacement bridge will span the Demerara River from Nandy Park to La Grange, upstream and in close proximity to the existing harbour bridge. This location shall allow an easy connection to the existing access roads on the West Bank of Demerara and new access roads will be constructed on the East Bank of Demerara. The replacement structure will be a fixed four-lane bridge with a vertical clearance over the channel of approximately 50m above the maximum tide level. The proposed design allows for the bridge to be connected to the main road network through road approaches connecting it to the West Bank Public Road and the imminent Mandela to Eccles road, respectively.



Figure 1: Proposed Project Location and Access Roads

3 Potential Environmental Impacts

The table below details the potential environmental impacts envisaged by MOPW.

Environmental Component	Potential Impact	Proposed Mitigation Measure
Geology and soils	Erosion and Sedimentation from construction activities such as land clearing, piling etc.	<ul style="list-style-type: none"> • Phased and planned land clearing • Landscaping • Construction of abutments, use of erosion control matting and other physical measures • Landscaping (mainly done during post construction)
Flora	Deforestation due to the clearance of vegetation for construction	<ul style="list-style-type: none"> • Accurate calculation of area to be cleared • Phased clearing to minimize top soil exposure • <i>Replanting, and revegetation post construction</i>
Air Quality	The operation of machinery and the stockpiling of material are potential sources of air pollution and dust emissions respectively.	<ul style="list-style-type: none"> • Machinery will be regularly maintained to reduce air pollutants and stockpiled material will be covered to reduce the escape of fugitive dust particles. • Contractor will also frequently use water to suppress dust.
Noise	Noise is expected to be generated from the operation of equipment on site and pile driving activities during the construction phase.	<ul style="list-style-type: none"> • Heavy duty equipment will be equipped with silencers and mufflers to abate noise level emissions. • Vehicles will be regularly maintained to facilitate effective functioning of equipment. • As far as possible pile driving hammers will be equipped with noise attenuation device.
Water Quality	<p>a) Potential exists for sedimentation and discolouration due to surface runoff, erosion and pile driving activities;</p> <p>b) contamination of surrounding water bodies from fuel/oil/lubricants spills.</p>	<ul style="list-style-type: none"> • Erosion control measures will be implemented and construction materials will be stored outside drainage lines in order to minimize sedimentation. • Large quantity of fuel will be stored in an impervious, banded area (secondary containment) to minimize adverse impacts to the environment in the event of spillage.

Table 1: Potential Environmental Impact and associated mitigation measures

4 Conclusion

Replacing the existing Demerara Harbour Bridge is necessary to provide the country with a sustainable solution for future river crossing as the existing crossing by a floating bridge in Peter's Hall is causing traffic congestion by a long opening time, low capacity, large maintenance costs and is a risk regarding continuity of the river crossing due to its age and vulnerability. The proposed high span bridge replacement is intended to fix this problem and will be more appropriate to facilitate traffic going to or from Georgetown.