Environmental Impact Assessment (EIA) Screening Decision Proposed Construction and Operation of Demerara River Bridge

1 SUMMARY OF THE PROPOSED PROJECT

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 Regions Nos. 3&4, 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 Suriname border in the east. The current two-lane steel floating bridge connects the East Bank at Peters Hall with the West Bank at Meer Zorgen.

The replacement bridge will go upstream and near to the present Demerara Harbour Bridge, across the Demerara River from Nandy Park to La Grange. This position will facilitate access to existing access roads on the West Bank of Demerara, as well as the construction of new access roads on the East Bank of Demerara. The bridge's landing site will be near to Republic Park Phase 2 on the East Bank.

This location shall allow an easy connection to the existing road network at both sides of the Demerara River through the existing road accesses presently in use for the existing Harbour Bridge. The proposed bridge will allow for more frequent and easier marine traffic which will foster development (industry, commerce, oil and gas, etc.).

The proposed bridge 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.

Figure 1: Location of Proposed Bridge

2 POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS AND SCREENING DECISION

The EPA based on existing data, its technical review, observations/field inspections, engagement with residents, and exercise of its discretion has determined the following:

Air quality

Impacts related to dust emissions and traffic air emissions during construction and operation are expected. Main potential receptors are residents and commercial activities within vicinity of Nandy Park. However, the impacts are expected to be neutral as the area is already exposed to these impacts from the current traffic and bridge. The Potential impact is not likely to be significant since during construction dust emissions will be minor and not permanent, and will not affect receptors directly since they will be localized to construction areas. During operation the impacts will be neutral to minor since dust and traffic emissions are not expected to be significantly different from the existing situation. Infact its expected to improve with a positive impact due to less congestion and improved traffic flow. Impacts to climate change are expected to be neutral.

These impacts are certain to occur during construction and operation, but the overall significance or risk is therefore considered medium. Mitigation meaures proposed and available include but not limited to:

- Machinery will be regularly maintained to reduce air pollutants and stockpiled material will be covered to reduce the escape of fugitive dust particles.
- Sprinkling water or other appropriate material on the construction site in order to reduce the emission of dust.

and therefore the impact is **not potentially significant**.

Noise and Vibrations

Noise and vibrations during construction from machinery and pile driving, and during operation as a result of traffic. During construction noise and vibration from pile driving and equipment will be localized and not permanent. Aproximately 10-15 households will be in close proximity to the construction activity. Noise and vibration from traffic during operation will be neutral to minor as traffic noise is not expected to be significantly increased over that of existing conditions.

These impacts are certain to occur during construction and operation, but the overall significance or risk is therefore considered medium. Mitigation meaures proposed and available include but not limited to:

- Careful planning of the time of operation in the populated areas (for example, prohibition for construction in certain periods of the day)
- Control of the construction methods and use of mechanisation, as well as regular equipment servicing to minimise high levels of noise.
- Pil driving method/ technology to reduce vibrations and noise

and therefore the impact is **not potentially significant**.

Surface Water Quality

Sedimentation of and storm water runoff during construction. Demerara river and drainage canals have experienced legacy contamination especially from residential and industries up and down stream of the project site. There is potential for nominal contamination of Demerara River from accidents due to minor fuel/oil leaks/spills during construction and operation as a result of accidents. During construction, excavation and land clearing works may result in sedimentation and storm water runoff with contaminants from land. These are considered negligible since the impact will be localized short term and of no significant consequence or change in existing water quality. The net impacts from these and the project in general will be neutral to negligible. Surface water in the project area is not used for drinking purposes. No impact on ground water is expected.

These impacts are certain to occur during construction and operation, but the overall significance or risk is therefore considered medium. Mitigation meaures proposed and available include but not limited to:

- Erosion and sedimentation control measures will be implemented and construction materials will be stored outside drainage lines in order to minimize sedimentation.
- However, storage of fuel/oils directly related to construction of bridge structure will be atleast 100 metres away from the demerara river. Fuel will be stored in an impervious, bunded area (secondary containment) to minimize adverse impacts to the environment in the event of spillage. Transportation of fuel /oils in the Demerara River is not expected to exceed 300 litres.
- Protection of the quality of superficial water will be accomplished by application of an appropriate drainage system for the wash out waters from the road surface.

and therefore the impact is **not potentially significant**.

Land Use

Bridge will pass close to approximately 40 households in Nandy Park and Providence. Impacts will be neutral to minor as there are existing roads and similar traffic volume and flows in the general area. This impact though certain to occur, the overall significance or risk is therefore considered minimal. Mitigation meaures proposed and available include but not limited to:

- Careful placement, harmonisation and designing of the accompanying facilities (access roads, camps for the construction workers, and maintenance of the construction mechanisation) for the reduction of the impact especially in the sensitive areas.

and therefore the impact is **not potentially significant**.

Biodiversity

Mangroves are a protected species and there will be need to remove approximately 2,360m2 (47.2m x 50m) of mangroves located mainly along the west bank of the river may be impacted by construction activities. No endangered species are in the area. Snowy egret and scarlet ibis are noted in the area. This removal is considered negligible as impacts will be minimal and localized since the area is already impacted by human activities and removal will be limited to a relatively small area and localized.

These impacts are certain to occur during construction and operation, but the overall significance or risk is therefore considered medium. Mitigation meaures proposed and available include but not limited to:

- Limited and phased clearing to minimize impacts
- Upon completion of the construction phase of the project, an assessment will be done on the areas in which the mangrove was affected and the area will be replanted/restored. Compensation for the vegetation by planting trees, bushes and grass resistant to fire with the purpose to improve the visual effects

and therefore the impact is **not potentially significant**.

Resettlement

An initial assessment of the proposed alignment on the eastern bank of the Demerara river shows that approximately 24 lots of land may be acquired. Approximately 10 plots have concrete/wooden structures erected thereon. There are no properties to be acquired on the western bank of the Demerara river. When it becomes clear which properties will be affected, it has been porposed that property owners will be engaged for voluntary acquisition at fair compensation in keeping with acquistion laws of Guyana. There has been initial consultation with residents who welcome the project and subsequent to consultations, a voluntary relocation/resettlement plan will be required and developed.

These impacts are certain to occur, but due to the small number of households to be relocated and the legal and consultative process to be followed by project proponent, the overall significance is therefore considered **low and not potentially significant**.

Socio-Economic

There will be increased land use within proximity of the bridge enabled by shorter traffic time in road and marine traffic by reducing bottlenecks currently faced by commuters when they use the current two-lane bridge. This will foster increased activity in surrounding communities**.** In the operation phase of the bridge positive influences are expected, especially regarding economic development, communication and the transportation of goods and people.

Conclusion

The overall significance of environmental impacts of this project are considered to be low to medium and manageable from a technical, social and financial point of view. The overall social impact of the project will be positive. Therefore this porposed project is exempt from the conduct an Environmental Impact Assessments (EIA), as set out in section 11(2) of the Environmental Protection Act, Cap. 20:05, Laws of Guyana.

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While the EPA has exempted this project from the requirement of an EIA, it is recommended that an Environmental Social and Management Plan (ESMP) be prepared for this project.