



**Environmental
Protection
Agency**

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Environmental Permit

Issued under the Environmental Protection Act, Cap. 20:05, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

Reference No.:	20211112-MPWDH
Fee:	Large (C1) - US\$ 1,500 per year
Fee Paid:	US\$ 3,000 for Two (2) years – May, 2022 to April, 2024

Addressee: Mr. Vladim Persaud
Permanent Secretary
Ministry of Public Works
Fort Street,
Kingstown,
Georgetown, Guyana.

Activity: Replacement of the Existing Demerara Harbour Bridge.

The Ministry of Public Works, herein referred to as the "Permit Holder", is hereby authorised in accordance with the Environmental Protection Act, Cap. 20:05, Laws of Guyana, Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000, to replace the Existing Demerara Harbour Bridge, hereinafter referred to as "the Project", in the manner indicated in the Application submitted on November 12, 2021, subject to the terms and conditions set forth herein under the Environmental Protection Act, existing or forthcoming regulations made under the said Act and/or any other applicable laws, best practices, guidelines and standards relevant to this project.

Terms and Conditions for construction and operation to be adhered to by the Permit Holder, his Servants, Agents and Sub-Contractors:

1.0 GENERAL

- 1.1 Make an application to the Agency to vary this Environmental Permit in instances where it becomes necessary to:
- I. Change the construction, operation, structure, or layout of the facility and all associated buildings;
 - II. Change equipment, machine, apparatus, mechanism, system or technology serving the facility;

- III. Change the position and design of any outlet at the point or points of discharge of effluents; or
- IV. Affect any other change outlined in **20(3)** of the **Environmental Protection (Authorisations) Regulations**.
- 1.2 Submit to the EPA an **Environmental Assessment and Management Plan (EAMP) within the first four (4) months of the date of issue**, unless otherwise stated by the EPA. The EAMP must address but not be limited to the following:
- a) Construction Method Statement (CMS)
 - b) Detailed pre-construction aspect of the project and must follow a comprehensive stakeholder engagement program as recommended by the EAB.
 - c) Identification of impacts, methodology for assessing their magnitude on receptors, and mitigation outcomes of the final design.
 - d) Detailed Relocation/Voluntary Acquisition Plan for residents within the construction zone.
 - e) Water Quality monitoring Plan both upstream and downstream from the construction area.
 - f) Air Quality monitoring Plan both upwind and downwind from the construction area.
 - g) Assessment Reports, for both construction and operation that address knowledge gaps on the influence of the bridge on sediment dynamics, river flows/velocity (inclusive of backwater effects), establishment of hydrological baselines, air quality, surface water quality, and noise levels on the main roads that will receive traffic leaving the bridge, resettlement needs.
 - h) Complete updated analysis and projection of future road and marine traffic loads and patterns.
 - i) Comprehensive inclusion of all feeder roads and bypasses reflective of current development plans in the national infrastructure programme.
 - j) Information on the proposed location(s) selected regarding the susceptibility to flooding (special focus on contributions/impacts to drainage on adjoining communities), the impacts of any increase/decrease in surface run-off and the intended mitigation measures.
 - k) Handling and disposal of waste generated during construction and

operation.

- l) River dynamics analysis and information on dredging required at the proposed location and mitigation measures especially for sediment discharge.
 - m) Detailed Environmental effects monitoring plan (during construction).
 - n) Any other consideration as required by the Agency.
- 1.3 The Project shall be implemented in accordance to the approved Emergency Response Plan, Waste Management Plan, all plans, specifications of location, pathways, reserve and boundary lines must be adhered to, unless otherwise authorised; evidence of which must be provided to the Agency.
- 1.4 Take all appropriate and necessary precautions to ensure, avoid and/or mitigate erosion, siltation and sedimentation of the Demerara River and banks during the construction and operation of the project.
- 1.5 Consult and coordinate with contractors and the relevant/affected utility companies and local government (NDCs, etc.) to establish schedules and mechanisms for implementation of service interruptions. Additionally, ensure that utilities/relevant authorities are consulted on the location of their facilities such as sewers, cables, pipelines, etc. to ensure that appropriate actions are taken such as relocation of utilities, markings, temporary shut off of utilities, etc. prior to the commencement works.
- 1.6 Construction works shall not be executed between 22:00 hrs. to 06:00 hrs., on any day, close to communal areas unless, approval is sought from the EPA. This requirement does not apply for large concrete pours or asphalt laying and earth removal where work in the early morning and late evening is required.
- 1.7 Construction support sites shall not be located in close proximity to sensitive receptors such as hospitals, geriatric homes, churches, schools, densely urbanized residential areas, recreational areas, etc.
- 1.8 Upon completion of works remove all barriers, equipment/material staging areas, and all support infrastructure, facilities and equipment in accordance with documents and plans submitted to the Agency.
- 1.9 All construction and operation activities at the project site shall be conducted in accordance with the Maritime; Sea and River Defence and Drainage & Irrigation Laws of Guyana.

2.0 TRAFFIC MANAGEMENT AND PUBLIC SAFETY

- 2.1 Take all necessary precautions to minimise potential adverse impacts on public health and the environment in the transport, storage and handling of construction materials.
- 2.2 Make suitable provisions to accommodate vehicular and pedestrian traffic safely with minimum inconvenience through and around the construction site(s).
- 2.3 Traffic control devices, signage, guardrails and cautioning tape shall be installed at work sites. Speed limits shall be strictly enforced to minimise dust particles from becoming airborne.
- 2.4 Notify the public of the estimated duration of the project, estimated times of works, and expected difficulties, e.g. road closures and diversions, etc. that may be encountered as a result of construction at least **two weeks** in advance.
- 2.5 Access shall be provided to all properties adjacent to the project site for the duration of the construction period.

3.0 EMPLOYEES SAFETY AND HEALTH

- 3.1 Adhere to requirements of the **Occupational Health and Safety Act, Cap 99:10, Laws of Guyana.**
- 3.2 Employ or designate an employee to the role of an **Occupational Health and Safety (OHS)/Environmental Officer** to be responsible for the implementation and coordination of all safety requirements and terms and conditions stipulated in this Permit, as well as compliance monitoring with the preparation of all required reports.
- 3.3 Ensure that First Aid Kits and Spill Containment Kits are kept onsite and accessible.
- 3.4 Ensure that adequate rest areas, waste disposal and sanitary facilities are provided at the construction site(s) for workers.
- 3.5 Ensure that employees do not work shifts in excess of eight (8) hours to reduce fatigue and risks of accidents/injuries onsite.

4.0 AIR QUALITY MANAGEMENT AND NOISE ABATEMENT

- 4.1 Strictly comply with the **Environmental Protection (Air Quality) Regulations, 2000** and the **Environmental Protection (Noise**

Management) Regulations 2000.

- 4.2 Monitor noise emissions in accordance with the **Guyana National Bureau of Standards (GNBS)** Guidelines for Noise Emissions into the Environment. Sound levels from noise-making devices shall not exceed the limits below, at a distance of 15 metres (50 ft) from the source or property boundary, whichever is closer.

Commercial Limits: 80 dB during the daytime (06:00 h - 18:00 h)

65 dB during the night-time (18:00 h - 06:00 h)

- 4.3 Monitor ambient air quality to determine compliance with the **World Health Organisation (WHO) Air Quality Guidelines for Particulate Matter in the Environment**, not exceeding the limits below:

PM_{2.5}: 25 µg/m₃ 24-hour mean

PM₁₀: 50 µg/m₃ 24-hour mean

- 4.4 Enclose all sound-making devices, such as generators, in structures constructed with materials of good insulation properties (e.g. hollow concrete blocks, insulation boards, solid clay bricks, etc.), equip with silencers/mufflers to reduce noise level, and place on properly designed foundations to ensure effective damping of vibrations.
- 4.5 Exhaust stacks of generators shall be at least 2 metres above the tallest building nearby, so as to minimize adverse fumes/soot impacts to the contiguous areas.
- 4.6 All generators and machines/equipment shall be serviced in accordance to manufacturer specification to ensure efficiency and reduce the level of noise produced. Maintenance report shall be kept and submitted to the EPA upon request.
- 4.7 Employ dust suppression methods such as watering, erecting dust screens/fences to control dust emissions from material stockpiles and other components of the development that would generate dust.
- 4.8 Cover all potential sources of dust nuisance such as material stock piles, loaded transport trucks, etc to minimise impacts to sensitive receptors.
- 4.9 Record, investigate and address complaints of excessive noise, dust and vibrations from the public promptly upon receipt. Maintain a record of all complaints received and the action taken.

5.0 SOIL AND WATER QUALITY MANAGEMENT

- 5.1 Strictly comply with the provisions of the **Environmental Protection (Water**

Quality) Regulations 2000.

- 5.2 Maintain the integrity of the existing waterways at all times. Discharges into the environment shall be in accordance with the **Guyana National Bureau of Standards (GNBS) Interim Guidelines for Industrial Effluent Discharge into the Environment**. The following are the allowable limits for this type of project and shall not be exceeded:
- a) Total Suspended Solid (TSS) < 100 mg/L;
 - b) Total Dissolved Solid (TDS) < 40 mg/L;
 - c) Oil and Grease < 20 mg/L.
- 5.3 Avoid erosion, siltation and sedimentation of existing water bodies/drains within the vicinity of the project site. Do not discharge wastewater from washout and/or cleanout of bitumen, concrete, paint, and other construction materials into waterways unless appropriately treated.
- 5.4 Install sediment controls along site perimeter areas that will receive effluent and remove sediments before it accumulates to half of the above-ground height of the perimeter control.
- 5.5 Construct and maintain drainage systems capable of handling the probable maximum precipitation event.
- 5.6 Install down-gradient sediment control systems (e.g., buffers, perimeter controls, exit point controls, storm drain inlet protection) that manage discharges from the initial site clearing, grading, excavating, and other earth-disturbing activities.
- 5.7 Limit the removal of vegetation to the minimum extent necessary for works to proceed. In areas where soils are not to be removed, the vegetation layer shall be maintained to protect the soil from erosion.
- 5.8 Stabilize exposed portions of the soil. Implement and maintain stabilization measures (e.g., seeding protected by erosion controls until vegetation is established, sodding, mulching, erosion control blankets, hydromulch, gravel) that minimize erosion from exposed portions of the site.
- 5.9 Locate piles outside of any natural buffers and away from any stormwater conveyances, drain inlets, and areas where stormwater flow is concentrated.
- 5.10 Avoid soil and water contamination from fuel, grease, waste oils and other petroleum products that might be used at the construction site.
- 5.11 Store fuel in a secured designated area to prevent accidental release into the surrounding environment. The designated area shall not be within 100 m of surrounding water bodies.

- 5.12 Store all chemicals in leak-proof containers that are kept under water-resistant cover and surrounded by secondary containment structures (e.g., spill berms, decks, spill containment pallets) to minimize the potential discharge of chemicals in stormwater and external waterways.

6.0 HAZARDOUS & SOLID WASTE MANAGEMENT

- 6.1 Strictly adhere to the provisions of the **Environmental Protection (Litter Enforcement) Regulations 2013** and the **Environmental Protection (Hazardous Waste Management) Regulations, 2000**.

- 6.2 Maintain good housekeeping, sanitary and hygienic practices and the aesthetic quality of the surroundings at all times.

- 6.3 Waste management shall be executed in accordance with the EAMP.

Additionally, promote proper solid waste management and disposal practices at the project site, place covered garbage receptacles at strategic locations around the project site.

- 6.4 Reuse waste material where practical such as land-filling material for the project site.

- 6.5 Dumping of waste into the surrounding environment is **strictly prohibited**. Waste, inclusive of waste oil and/or fuel, shall not be stored within 10 meters of any waterways.

- 6.6 Hazardous waste shall be treated and/or disposed by an EPA authorised Hazardous Waste Disposal Facility. All hazardous waste treatment and disposal shall be documented on a Waste Manifest Form which shall be submitted to the EPA as a component of the **Annual Report**.

- 6.7 Conduct refuelling, oil changes and maintenance of equipment on an impervious base.

- 6.8 Spill equipment shall be available and utilised for containing and mitigating spills from fuel, bitumen, waste oils, lubricants, curing compounds, concrete admixtures, paints etc.

- 6.9 Designate an area for the storage of fuel, used oil, washing detergents, sanitisers and other hazardous materials. Hazardous materials/ waste storage areas shall be clearly labelled and secured. The following warning signs shall be clearly posted:

- a) "Hazardous Waste Storage Area"
- b) Danger - "Authorised Personnel Only"

No eating, drinking or smoking

6.10 Hazardous waste shall be contained in bunded /kerbed storage areas. These areas shall adhere to the following requirements:

- a) Be situated in low traffic areas;
- b) No interceptor drains shall be constructed; and

Be bunded to provide 110% containment of the largest volume of hazardous materials stored therein.

6.11 Hazardous waste shall be stored in containers appropriate for the waste stream; that is:

- a) Sealed Plastic Containers
 - i. Water-based waste
- b) Sealed Metal Containers
 - i. Solvents and petroleum-based products

Oil and oily absorbents

6.12 Hazardous waste/materials storage containers shall be inspected weekly for signs of leakage, deterioration or corrosion. Damaged containers must be replaced immediately. Inspection reports must be maintained and signed by the appropriately qualified inspecting officer and his/her supervisor.

6.13 Adequate toilets, waste disposal and sanitary facilities shall be provided at all site(s).

6.14 Portable toilets shall be installed in accordance with the Public Health Ordinance 1953.

6.15 All portable toilets shall be emptied by the contracted Waste Disposal Services. Disposing of raw sewage into the surrounding environment **is strictly prohibited.**

7.0 DREDGING MANAGEMENT

7.1 Dredging management as set out below will be further informed by the EAMP as required under subsection 1.2.

7.2 Construction and maintenance dredging shall only be conducted for the construction and operation of the bridge.

- 7.3 Ensure that dredged material disposal, construction dredging and maintenance dredging are handled in such a way to prevent negative impacts on habitats or pose a significant hazard to human health and the environment.
- 7.4 Disposal of dredged materials into the Demerara River is **strictly prohibited**. Approval must be sought from the EPA and any other agency that may have supervision or jurisdiction on the disposal of such materials.
- 7.5 Methods for excavation and dredging shall be selected to minimize the suspension of sediments and/or destruction of benthic habitat.
- 7.6 Implement all necessary measures to reduce turbidity and the release of contaminants from re-suspension of sediments in the water column and from exposure of sediments to higher oxygen levels.
- 7.7 Prior to initiation of dredging activities, materials must be sampled and characterized for their physical, chemical, biological and engineering properties to inform the evaluation of dredged materials behaviour once re-suspended and to inform their reuse or final disposal.
- 7.8 Keep records of sampling and analysis conducted on dredge spoil.
- 7.9 Monitor siltation within a 500 meters radius both upstream and downstream of the banks of the Demerara River. Qualitative and Quantitative data should be recorded and stored.

8.0 COMPLIANCE MONITORING AND REPORTING

- 8.1 Notify the Environmental Protection Agency **within one (1) hour** of the occurrence of any environmental emergencies (e.g. oil spills, hazardous materials/wastes spill, sudden onset disaster, natural, technological or human-induced factors that cause or threaten to cause severe environmental damage as well as harm to human health or livelihood).
- 8.2 Monitor the implementation of the conditions of this Permit, insofar as they involve adherence by your employees and all third parties under your direction.
- 8.3 Notify the Agency in writing of any change of name or ownership of the Permit Holder's facility within **thirty (30) days** after the change occurs.
- 8.4 Notify the Agency **within twenty-one (21) days** in event of death, bankruptcy, liquidation or receivership of the Permit Holder or if the Company becomes a party to an amalgamation.
- 8.5 Maintain and submit to the Agency records of the type, composition and quantity of contaminant released (i.e. any solid, liquid, gas, odour, sound, vibration, radiation, heat or combination of any of them).

- 8.6 Submit an **Annual Report** to the EPA on your compliance with this Environmental Permit on or before **March 31, each year.**
- 8.7 Report to the Agency any non-compliance(s) with the Environmental Permit:
- i. Within **twenty-four (24) hours** of the time the Holder of the Environmental Permit becomes aware of the non-compliance outlining the anticipated manner in which human health or the environment may be impacted.
 - ii. Within **seventy-two (72) hours** of the time the Holder of the Environmental Permit becomes aware of the non-compliance, submit to the Agency a written report containing a description of the non-compliance, its cause, the period of non-compliance including exact dates and time and the anticipated time it is expected to continue if the non-compliance(s) has not been corrected.
- 8.8 Comply with any lawful directions given by the EPA from time-to-time in furtherance of the implementation of any international or other obligation for the environmental protection of Guyana.
- 8.9 It is the responsibility of the Permit Holder to ensure the permitted activity and premises are secured and that all practicable steps necessary to prevent fires, explosions, leaks or suspected leaks and spills at the permitted premises are taken.
- 9.0 INSTITUTIONAL AUTHORITY/LIABILITIES**
- 9.1 The Permit Holder shall be liable for any material environmental harm caused by polluting the environment, pursuant to **s. 39** of the **Environmental Protection Act, Cap. 20:05, Laws of Guyana.**
- 9.2 The Permit Holder shall be liable for any serious environmental harm caused by polluting the environment, pursuant to **s. 39** of the **Environmental Protection Act, Cap. 20:05, Laws of Guyana.**
- 9.3 The Permit Holder shall be liable for any activity that causes or is likely to cause pollution of the environment unless all reasonable and practicable measures are taken to prevent or minimize any resulting adverse effect, pursuant to **s. 19** of the **Environmental Protection Act, Cap. 20:05, Laws of Guyana.**
- 9.4 The Permit Holder shall be liable for discharging, causing or permitting the entry into the environment, of any contaminant in any amount, concentration or level excess of that prescribed by the regulations or stipulated by this Environmental Permit, pursuant to **s. 19** of the **Environmental Protection Act, Cap. 20:05, Laws of Guyana.**
- 9.5 The Permit Holder shall be liable to compensate any person who suffers any loss or damage as a result of contravening conditions 8.2 and 8.8 of this Environmental


Permit, pursuant to **s. 19** of the **Environmental Protection Act, Cap. 20:05, Laws of Guyana.**

- 9.6 The Permit Holder shall not be indemnified by the Agency for any activity that causes or is likely to cause pollution to the environment, resulting from adverse effects through the discharge, any contaminant in any amount, concentration, ultra-hazardous substances, chemicals or otherwise, and shall be rendered liable to prosecution and to penalties prescribed under the Environmental Protection Act and Regulations.
- 9.7 The Permit Holder shall be liable of any gross negligence or willful misconduct caused by the Permit Holder, his Servants and/or Agents, to the environment, biodiversity, protected species and natural habitat with respect to any release, discharge, or spill, of contaminant fluids, oil or lubricants.
- 9.8 Should the Permit Holder contravene or be likely to contravene any condition of this Permit, the Agency (EPA) may serve on him an Enforcement Notice in accordance with **Section 26** of the **Environmental Protection Act, Cap. 20:05, Laws of Guyana.**
- 9.9 Where it appears to the Agency that the Permit Holder is engaged in any activity that may pose a serious threat to natural resources or the environment, or a risk of serious pollution of the environment or any damage to public health, the EPA may issue to the Permit Holder a Prohibition Notice, which may order him to immediately cease the offending activity, in accordance with **Section 27** of the **Environmental Protection Act, Cap. 20:05, Laws of Guyana.**
- 9.10 The EPA reserves the right to conduct regular inspections of the Permit Holder's activities as part of its monitoring and enforcement requirements under the **Environmental Protection Act, Cap 20:05, the Environmental Protection (Amendment) Act, 2005, and Environmental Protection (Authorisations) Regulations, 2000.**
- 9.11 The Permit Holder, His Servants and/or Agents shall at all times, allow entry to the permitted facility to any Officer designated by the EPA for the purposes of conducting inspections or any other legitimate business of the Agency. Pursuant to **Section 38** of the **Environmental Protection Act, Cap. 20:05, Laws of Guyana**, it is an offence to assault, obstruct or hinder an authorised person in the execution of his/her duty under the said Act or its Regulations and the Permit Holder shall be liable to penalties prescribed under paragraph (c) of the Fifth Schedule for doing so.
- 9.12 The EPA has the right to modify, cancel or suspend this Permit for breach of any of the terms and conditions contained herein.
- 9.13 This Environmental Permit is not the final consent; all relevant Permissions should be obtained from other regulatory bodies for continued operation.

Environmental Permit Ref. No. 20211112-MPWDH
(Issued under of the Environmental Protection Act, Cap. 20:05, Environmental Protection
(Amendment) Act, 2005, and the Environmental Protection Regulations, 2000)

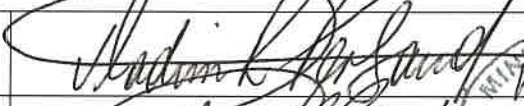
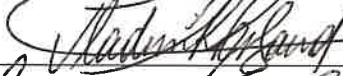
- 9.14 This **Environmental Permit** is effective for the period stipulated herein **May, 2022 to April, 2024**.
- 9.15 This Environmental Permit shall remain valid until **April 30, 2024**, unless otherwise suspended, cancelled, modified or varied, in accordance with the **Environmental Protection Act, Cap. 20:05, Laws of Guyana, Environmental Protection (Amendment) Act, 2005**, and the **Environmental Protection (Authorisations) Regulations, 2000**.
- 9.16 This Environmental Permit shall be renewed by submitting “an Application for Renewal of Environmental Authorisation to the Agency at least six (6) months before this Permit expires, that is, no later than **October 31, 2023**.”
- 9.17 Any late submission of renewal application (s) after the specified date as stated above, may require the Permit Holder to pay, in addition to renewal fee, a late penalty fee (accruing at the time such obligation was first owed for renewal) at a rate of **two thousand dollars (GY\$2000.00) per day for every business day late, until such renewal application is submitted to the Agency**, without prejudice to any other rights of the Permit Holder in connection therewith.
- 9.18 Failure to comply with the requirements of this Permit or with applicable laws and regulations, whether existing or forthcoming, shall render the Permit Holder liable to prosecution and to penalties, inclusive of civil penalties, injunctive relief and imprisonment, as prescribed under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection Regulations and other applicable Laws of Guyana.

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Signed by  on behalf of the Environmental Protection Agency.
Kemraj Parsram
 Executive Director

Date 18.05.2022

I hereby accept the above terms and conditions upon which this Environmental Permit is granted and agree to abide by the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, the Environmental Protection (Authorisations) Regulations, 2000, all subsidiary legislations made under the said Act and any forthcoming regulations, best practices, guidelines and standards made under this Act.

NAME:	
SIGNATURE:	
DESIGNATION:	PERMANENT SECRETARY
DATE:	18/05/2022

