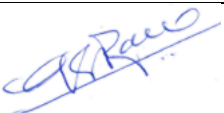


Project Description (Summary) for Asphalt Plant (Hot Mix)



**Upgrading of the Palmyra to Moleson Creek Highway -
Lot3 (Number 55 to Moleson Creek) in Region 6,
Skeldon, Guyana**

Employer	Permanent Secretary, Ministry of Public Works, Guyana Address -Oranapai Towers, Wight's Lane, Kingston, Georgetown, Guyana
Consultant/Engineer	rites LIMITED (A Govt. of India Enterprise) in association with C.B. & Associates Inc Address- 1st floor, 34-36, Palmyra Village, East Canje, Berbice, Project Chainage 2+250, Landmark- Lanza Building Material Shop, Guyana
Name of Contractor/Company	Vishwa Samudra Engineering Pvt Ltd. Address- LOT1 South Half Lamaha & Cummings Street Albert town- Georgetown, Guyana

	Name	Contact Details	Designation	Date	Signature
Prepared By	Vivek Kumar	+592-7432067	Environmental Manager	06.08.2026	
Reviewed By	Vipin Onkar Tayde	+592-7432077	EHS Manager	06.08.2026	
	Satyam Reddy	+92-7432064	Project Manager	07.08.2026	
Approved By	Srinivasa Rao Guttula	+592-6690858	Project Director	08.08.2026	

1. Description of the proposed project

- A- Name of The Project -Upgradation of the Corentyne Highway Palmyra To Moleson Creek Lot-3 (Village 55 To Moleson Creek)
- B- Proposed Asphalt (Hot Mix) Plant Location-
- C- Co-Ordinates- 6°00'20.8"N 57°09'59.0"W
- D- Nearest Town: - Skeldon
- E- Nearest Village: - 59
- F- Current Soil type – Clay
- G- Topography and gradient – Flat
- H- Nearest Sensitive Receptors

Sl. No.	Land Use	Distance	Remarks
1	Residences	251 m	
2	Major Water Courses/Canel	NA	
3	Place of Worship	913 m	Masjid
4	Schools	427 m	Primary School
6	River/Sea Defence	1600 m	Sea

2. No Alternatives required: - No alternatives are considered

3. Base line: -

(a) Physical Environment – natural condition

- Land/Soil: Clay type
- Water: Groundwater depth approximately 2 m
- Air Quality: PM10-141.2 µg/m³ and PM2.5 - 28.1 µg/m³ within 3 km , As per ESIA Sampling location Report of the Project (06°02'42.69" N 057°10'41.78" W).
- Noise Levels: Ambient noise within permissible limits for rural/urban setting (Noise- Max 87.2 dBA and Min 61.9 dBA , Average – 72.9 dBA As per ESIA Report of the Project (06°02'42.69" N 057°10'41.78" W)

(b) Ecological Environment

- **Flora:**
Vegetation is mainly **sugarcane plantations, grasses, shrubs, and scattered tree cover**, with managed agricultural landscapes dominating the estate area.
- **Fauna:**
Presence of **common rural wildlife such as birds, small mammals, reptiles, and insects**, typical of agricultural coastal ecosystems.
- No **endangered or protected species** are recorded in the immediate project footprint based on available regional ecological characteristics.
- No **eco-sensitive zones, national parks, or protected forest areas** are located within the project site boundary.

(c) Social Environment

- **Economic Activities:**

The local economy is predominantly dependent on sugar production, agriculture, and associated industrial activities, along with supporting services such as transport, trade, and small businesses.

- **Population Characteristics:**

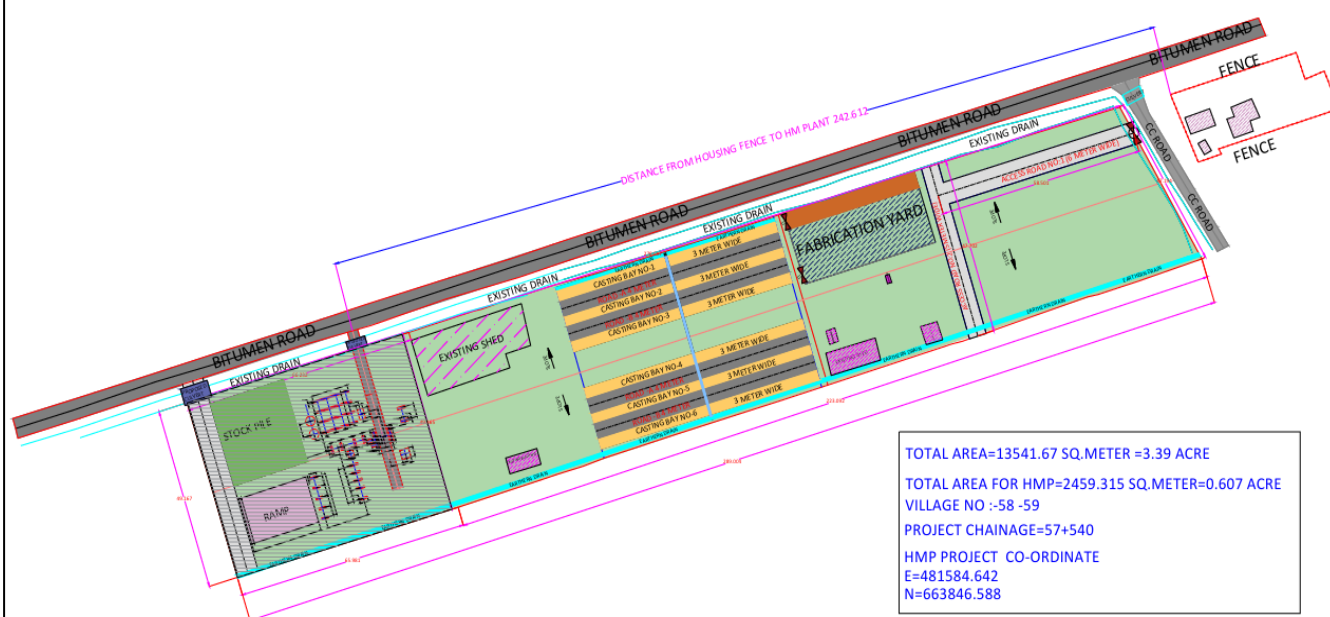
The surrounding area includes peri-urban and rural communities, with settlements linked to plantation and estate-based livelihoods.

- **Cultural/Recreational Sites:**

Religious and community structures exist in the wider region; however, no major cultural or religious sites are directly located within the project footprint.

4. Layout of the Location

LAYOUT PLAN FOR HOT MIX PLANT

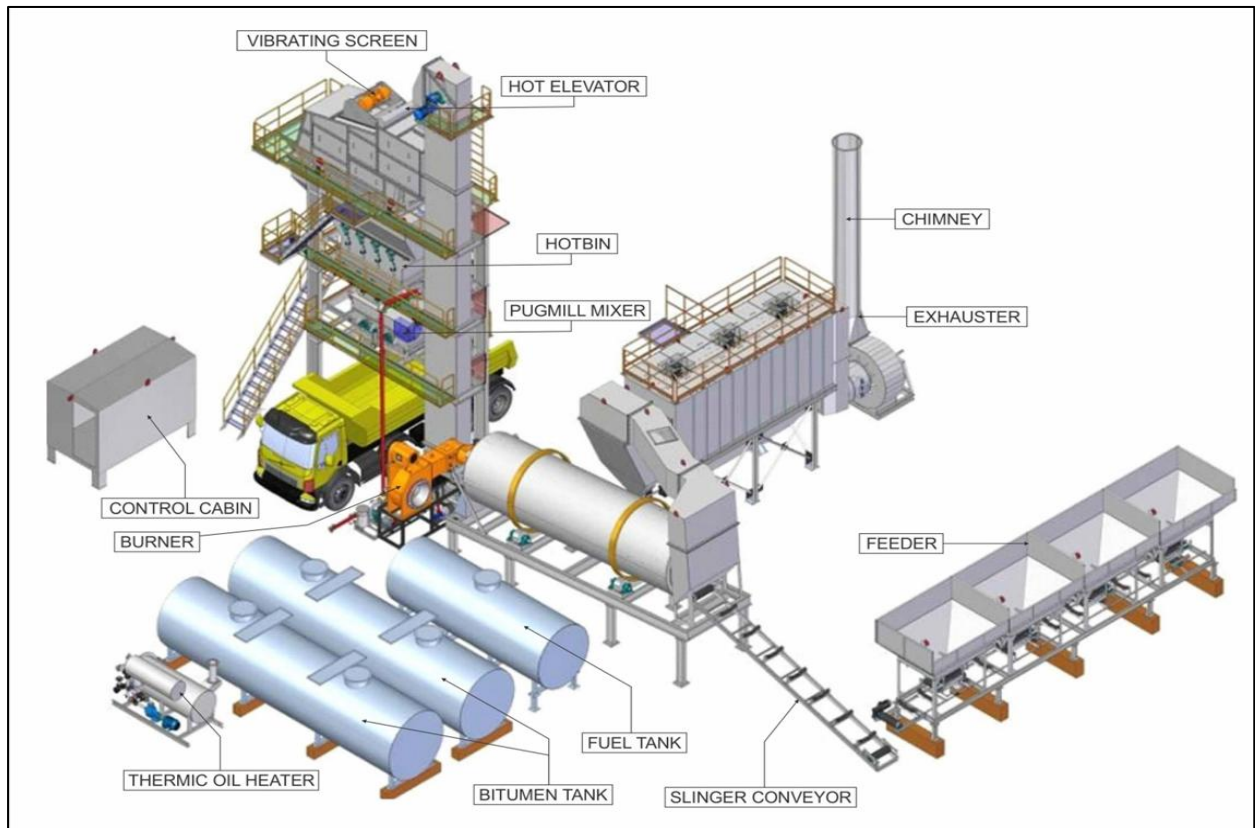


ALL DIMENSIONS ARE IN METER

CLIENT :  THE CO-OPERATIVE REPUBLIC OF GUYANA MINISTRY OF PUBLIC WORKS	PROJECT :  RITES LIMITED (A Govt. of India Enterprise) in association with C.B. & Associates Inc. Project Office (GTI) Lot 94 Section "C" Campbell Avenue Campbellville Georgetown, Guyana (South America)Corporate Office: Bahadur, Plot No. 1, Sector -20, Gurgaon - 122001, Haryana (India)	DESIGN & BUILD CONTRACTOR :  Vishwa Samudra Engineering Private Limited (VSEPL) Project Office: Lot #1, South Hall, Lamaha & Cummings Street, Alberton, Georgetown, Guyana Corporate office: 8th & 9th Floors, Vennarayan jyothi, Valencia Road No.2,Bangara Hills, Hyderabad-500034, Telangana, India	PROJECT:- DESIGN, BUILD AND FINANCE - UPGRADING OF THE CORENTYNE HIGHWAY PALMYRA TO MOLESON CREEK - LOTS 1 & 3 TITLE: LAYOUT PLAN FOR HOT MIX PLANT AND PRE-CAST YARD PREPARED BY: DEPARTMENT OF SURVEY VSEPL
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5. Description of the design of Asphalt (Hot Mix) plant –

(a) Design/Layout of Asphalt (Hot Mix) plant



(b) Specification of Structures

Sl. No.	Component	Specification
1	Asphalt Plant Capacity	120 Tonnes per Hour (TPH)
2	Aggregate Storage Bins	Multiple cold aggregate bins fabricated from structural steel and covered with green shade net to minimize fugitive dust emissions.
3	Aggregate Feeder	Automatic multi-bin cold aggregate feeder with variable speed control and belt conveyor system.
4	Fuel Tank	Mild steel fuel storage tank with secondary containment (bund wall) to prevent accidental spills and leakage.
5	Thermic Oil Heater	Indirect heating system for heating bitumen using thermic oil, equipped with automatic temperature control.
6	Bitumen Tank	Insulated vertical bitumen storage tanks with thermic oil heating coils, temperature gauges, and level indicators.

7	Slinger Conveyor	Belt-type slinger conveyor for efficient transfer of hot aggregates to the drying drum/mixing unit.
8	Control Cabin	Prefabricated insulated control cabin equipped with PLC-based automatic plant control and monitoring system.
9	Burner	Fully automatic high-efficiency diesel/furnace oil burner with combustion control system for aggregate drying.
10	Pugmill Mixer	Twin-shaft pugmill mixer designed to ensure homogeneous mixing of heated aggregates, bitumen, and mineral filler.
11	Hot Bins	Insulated hot aggregate storage bins with multiple compartments for different aggregate sizes.
12	Hot Elevator	Bucket-type hot elevator for conveying heated aggregates from the dryer to the vibrating screen and hot bins.
13	Vibrating Screen	Multi-deck vibrating screen for grading heated aggregates into different size fractions before mixing.
14	Diesel Generator (DG) Set	500 kVA DG set for asphalt plant operations and 82.5 kVA DG set dedicated for bitumen heating system during power interruptions.
15	Office/Temporary Shed	Prefabricated steel container office with administrative facilities, meeting room, washrooms, and storage area.
16	Water Storage Tank	Capacity: 20 KLD for domestic use, dust suppression, equipment cleaning, and emergency firefighting requirements. (Insert actual capacity.)

(c) Volume of expected pollutants, etc.

The proposed Hot Mix (Asphalt) Plant is expected to generate limited environmental emissions during its operation. Fugitive dust emissions, primarily comprising particulate matter (PM₁₀ and PM_{2.5}), may arise from the handling, storage, transfer, and loading of aggregates under uncontrolled conditions. The dryer drum burner will generate stack emissions including particulate matter (PM), nitrogen oxides (NO_x), carbon monoxide (CO), sulphur dioxide (SO₂), volatile organic compounds (VOCs), and trace hydrocarbons. Particulate emissions will be effectively controlled through a high-efficiency baghouse filter, while proper burner operation, fuel quality, and regular maintenance will minimize gaseous emissions. The diesel generator (DG) set, if operated, will produce minor exhaust emissions including NO_x, CO, SO₂, and particulate matter, which will remain within the applicable regulatory emission standards. Noise levels at

the source are expected to range between 75–85 dB(A) and will attenuate with increasing distance from the plant. Solid waste generated during plant operation will mainly comprise rejected asphalt mix, baghouse fines, coarse dust, and general housekeeping waste. These wastes will be collected, reused or recycled wherever practicable, and managed in accordance with the approved Waste Management Plan and applicable environmental regulations.

(d) **Capital Investment** – For All Over Project- 199 million USD

For Hot Mix Plant Setup- Approx 5,00,000 USD

(e) **No of Employee/Workers for Each Stage of the project: -**

10 Nos of Workers/Employee	Construction Phase
5 Nos of Workers/Employee	Operation Phase

(f) **Rate of Production: -** 120 Tonnes/hr

(g) **Transportation route: -** Between Village Number 55 to Moleson Creek

(h) **Activities: -**

- **Operation & Production Process**

The Hot Mix Plant is designed to produce Hot-mix Asphalt through a semi-automated process involving:

- ❖ Receipt and storage of raw materials (Bitumen, Sand/Dust, aggregates, and Fuel)
- ❖ Feeding of aggregates through cold feed bins and conveying them to drying drums
- ❖ Screening, Storage (hot bins) and weighing of heated aggregates as per approved mix.
- ❖ Heating, Pumping and weighing of bitumen before Addition to the mixer.
- ❖ Mixing of both Heated aggregate and bitumen in Asphalt mixer to produce Hot Mix Asphalt.
- ❖ Discharge of finished hot mix asphalt into tipper trucks
- ❖ Transportation of Hot mix asphalt to the paving site for laying and compaction

- **Stage-wise Process Guide**

Stage	Activity	Description
1	Raw Material Receiving & Storage	Aggregates, bitumen, and mineral filler are received, inspected, and stored separately in designated stockpiles, tanks, and silos.
2	Cold Aggregate Feeding	Aggregates are proportioned through cold feed bins and conveyed to the drying unit.
3	Aggregate Drying & Heating	Aggregates are dried and heated in a rotating dryer drum using a burner to remove moisture and achieve the required temperature.

4	Dust Collection	Dust generated during drying is collected by a baghouse filter to minimize emissions and allow reuse of fine particles where applicable.
5	Screening & Hot Storage	Heated aggregates are screened into different sizes and stored in hot bins before mixing.
6	Weighing & Batching	Aggregates, bitumen, and mineral filler are accurately weighed according to the approved Job Mix Formula (JMF).
7	Mixing	The weighed materials are thoroughly mixed in the pugmill (batch plant) or drum mixer (continuous plant) to produce homogeneous hot asphalt.
8	Hot Mix Storage	The finished asphalt mix is transferred to insulated storage silos to maintain the required production temperature.
9	Loading & Transportation	Hot mix is loaded into covered tipper trucks and transported to the paving site while minimizing heat loss.
10	Paving & Compaction	Asphalt is laid using a paver finisher and compacted with rollers to achieve the specified thickness, density, and surface finish.
11	Quality Control	Samples are tested for aggregate gradation, bitumen content, temperature, density, and Marshall Stability to ensure compliance with project specifications.

- **Process Flow Diagram**

(i) Use of Natural Resources – Per tonne of Asphalt Mix

Sl. No	Material	Usage	Quantity
1	Coarse Aggregate	Asphalt Production	620 KG/MT
2	Fine Aggregate / Sand	Asphalt Production	380 Kg/Mt
3	Bitumen	Asphalt Production	50 Kg/Mt
4	Fuel -LDO	Asphalt Production	7 ltr/Mt
5	Fuel-Diesel	DG Set and Equipment Fuel	18 Ltr/Hr

(j) Source of utility services –

Sl. No	Type	Source	Quantity	Remarks
1.	Electricity	Diesel Generators	7-8 ltr/hour	82.5KVA
2.	Electricity	Diesel Generators	7-8 ltr/hour	500 KVA

(k) Waste Production –

Sr. No.	Waste Type	Hazardous / non-hazardous	Source Area	Estimated Quantity	Storage Method	Disposal / Treatment Method
1	Rejected Mix	Non-Hazardous	Rejected load/Plant start-up or shutdown	As per Production Batch (0.2-2% of Asphalt Production)	Wheel Loader	Reuse in Production
2	Baghouse Dust	Non-Hazardous	Dust collection system	0.2-1% of aggregate	Designates storage area	Return to Asphalt mix or Dispose through Authorized agency
3	Bitumen Contaminated Waste	Hazardous	Plant Spills and Cleaning of Pipes	Minimal Quantity	Spill Cleaning and Storage	Disposal through Third Party Agency
2	Empty Bitumen Drums	Hazardous	Bitumen Storage	20-30 no	Hazardous Storage area	Reuse / Return to Vendor
3	Aggregate Dust / Spillage	Non-Hazardous	Aggregate Yard	Minimal Quantity	Collected periodically	Reuse
4	Domestic Waste	Non-Hazardous	Camp Area / Office	20-30 kg/Month	Color-coded bins	Disposal through Third Party Agency
5	Food Waste	Non-Hazardous	Camp Kitchen	Minimal Quantity	Covered bins	Disposal through Third Party Agency
8	Used Oil	Hazardous	DG Set / Maintenance	20-30 liters/month	Leak-proof drums	Authorized hazardous waste vendor
9	Oily Cotton Waste / Filters	Hazardous	Equipment Maintenance	0.50 to 1 kg/month	Sealed container	Authorized disposal
11	Grease	Hazardous	Equipment Maintenance	5 Kg/Month	Sealed container	Authorized disposal
12	Sewage Wastewater	Non-Hazardous	Camp Toilets	2.88 m ³ /day	Septic tank / soak pit	Disposal through Third Party Agency

(l) Duration of the project for each Phase –

Project Phase	Estimated Duration
Mobilization & Site Preparation	2-3 weeks
Installation & Commissioning of Mobile Asphalt/Hot Mix Plant	1 week
Operational Phase	As per project requirement (estimated 36 months)
Demobilization / Site Restoration	2-3 weeks after project completion

(m) Potential Impacts and their Significance –

Sl. No.	Environmental Aspect	Potential Impact	Significance	Mitigation Measures
1	Storage and handling of aggregates	Fugitive dust (PM ₁₀ & PM _{2.5}), reduced air quality	Medium	Water spraying, cover stockpiles, limit drop heights, maintain haul roads.
2	Loading/unloading of aggregates	Dust generation affecting workers and nearby receptors	Medium	Wet suppression, controlled loading, use enclosed conveyors where practicable.
3	Aggregate drying in dryer drum	Stack emissions (PM, NO _x , CO, SO ₂ , VOCs)	High	Install and maintain a high-efficiency baghouse filter, optimize burner combustion, use low-sulphur fuel.
4	Bitumen heating and storage	Bitumen fumes, VOC emissions, odour	Medium	Maintain proper heating temperature, insulated tanks, regular inspection for leaks.
5	Asphalt mixing process	Air emissions and odour	High	Maintain baghouse efficiency, optimize plant operation, preventive maintenance.
6	Diesel Generator (DG) operation	Exhaust emissions and noise	Medium	Use compliant DG set, low-sulphur diesel, periodic servicing, acoustic enclosure.
7	Plant machinery and equipment	Noise and vibration	Medium	Regular maintenance, silencers, PPE, restrict operation near sensitive receptors where feasible.
8	Internal vehicle movement	Dust, exhaust emissions, accident risk	Medium	Speed limits, road watering, vehicle maintenance, traffic management plan.
9	Fuel and bitumen storage	Soil and groundwater	High	Bunded storage, spill kits, secondary containment,

		contamination due to spills		emergency spill response plan.
10	Maintenance of equipment	Generation of used oil, oily waste, contaminated rags	Medium	Store hazardous waste in designated areas and dispose through authorized recyclers/disposal facilities.
11	Stormwater runoff	Sediment transport and contamination of nearby drains/water bodies	Medium	Construct drainage channels, sediment traps, oil interceptors, regular cleaning.
12	Equipment washing and housekeeping	Wastewater generation	Low	Minimize washing, reuse water after settling where feasible, prevent discharge to natural watercourses.
13	Rejected asphalt mix and baghouse dust	Solid waste generation	Medium	Reuse/recycle rejected mix where feasible, reuse baghouse fines where technically suitable, dispose of residual waste appropriately.
14	Energy consumption	Greenhouse gas (GHG) emissions	Medium	Improve fuel efficiency, optimize burner performance, preventive maintenance.
15	Emergency events (fuel/bitumen spill or fire)	Soil, water pollution, fire hazards, worker injury	High	Spill response plan, firefighting equipment, emergency drills, trained personnel.
16	Occupational exposure to dust, fumes and heat	Health impacts on workers	High	PPE (respirators, gloves, eye protection), health surveillance, ventilation, training.

17	Community exposure to dust, noise and traffic	Public nuisance and complaints	Medium	Maintain buffer zone, dust suppression, restrict operating hours where necessary, community grievance mechanism.
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6. Potential Impacts and their Significance

Sl. No.	Assessment Requirement	Potential Impact Assessment	Significance
1	Air Quality	Emission of particulate matter (PM ₁₀ & PM _{2.5}), NO _x , CO, SO ₂ and VOCs from aggregate handling, dryer drum, and vehicle movement may affect ambient air quality.	High
2	Noise Environment	Noise generated from dryers, mixers, conveyors, generators, and heavy vehicles may affect workers and nearby receptors.	Medium
3	Surface Water	Stormwater runoff carrying sediments, oil, grease, or bitumen residues may contaminate nearby drainage channels if uncontrolled.	Medium
4	Groundwater	Fuel, bitumen, or lubricant spills may infiltrate soil and potentially impact groundwater quality.	Medium
5	Soil Quality	Accidental spills of diesel, bitumen, hydraulic oil, and improper waste handling may contaminate soil.	High
6	Waste Management	Generation of rejected asphalt mix, baghouse dust, used oil, oily rags, empty containers, and domestic waste requires proper management.	Medium
7	Hazardous Materials	Improper storage or handling of diesel, bitumen, and lubricants may result in spills, fire hazards, and environmental contamination.	High
8	Biodiversity	Dust, noise, and increased human activity may cause temporary disturbance to nearby flora and fauna.	Low
9	Land Use	Temporary alteration of land use for plant installation and stockpiling of materials.	Low

10	Traffic and Transportation	Increased movement of trucks transporting aggregates, bitumen, and asphalt mix may increase traffic congestion, dust, and road safety risks.	Medium
11	Occupational Health and Safety	Workers may be exposed to dust, asphalt fumes, high temperatures, moving machinery, noise, and ergonomic hazards.	High
12	Community Health and Safety	Dust, noise, traffic, and accidental spills may temporarily affect nearby communities if not adequately controlled.	Medium
13	Climate Change / Greenhouse Gas Emissions	Fuel combustion in the dryer burner, DG set, and transport vehicles will generate CO ₂ and other greenhouse gas emissions.	Medium
14	Resource Consumption	Consumption of diesel, bitumen, aggregates, electricity, and water may deplete natural resources if not managed efficiently.	Medium
15	Emergency Situations	Fire, explosion, fuel spills, bitumen spills, or equipment failure may result in environmental damage and safety risks.	High

7. Proposed Environment Management and Mitigation –

SI No	Environmental Aspect	Potential Impact	Mitigation Measures
1	Air Quality	Dust emissions from cement, aggregate handling, and vehicle movement	Water sprinkling, covered aggregate storage, enclosed silo, tarpaulin covering of trucks, regular maintenance
2	Noise	Noise from batching plant, DG set, and vehicle movement	Acoustic enclosure for DG set, maintenance of equipment, PPE (ear plugs), restricted working hours
3	Water & Wastewater	Wastewater from washing and cleaning activities	Sedimentation/settling tank, reuse of treated water, no direct discharge to natural water bodies
4	Soil/Land	Spillage of cement, fuel, oil contamination	Impervious flooring, bunding, drip trays, immediate spill cleanup

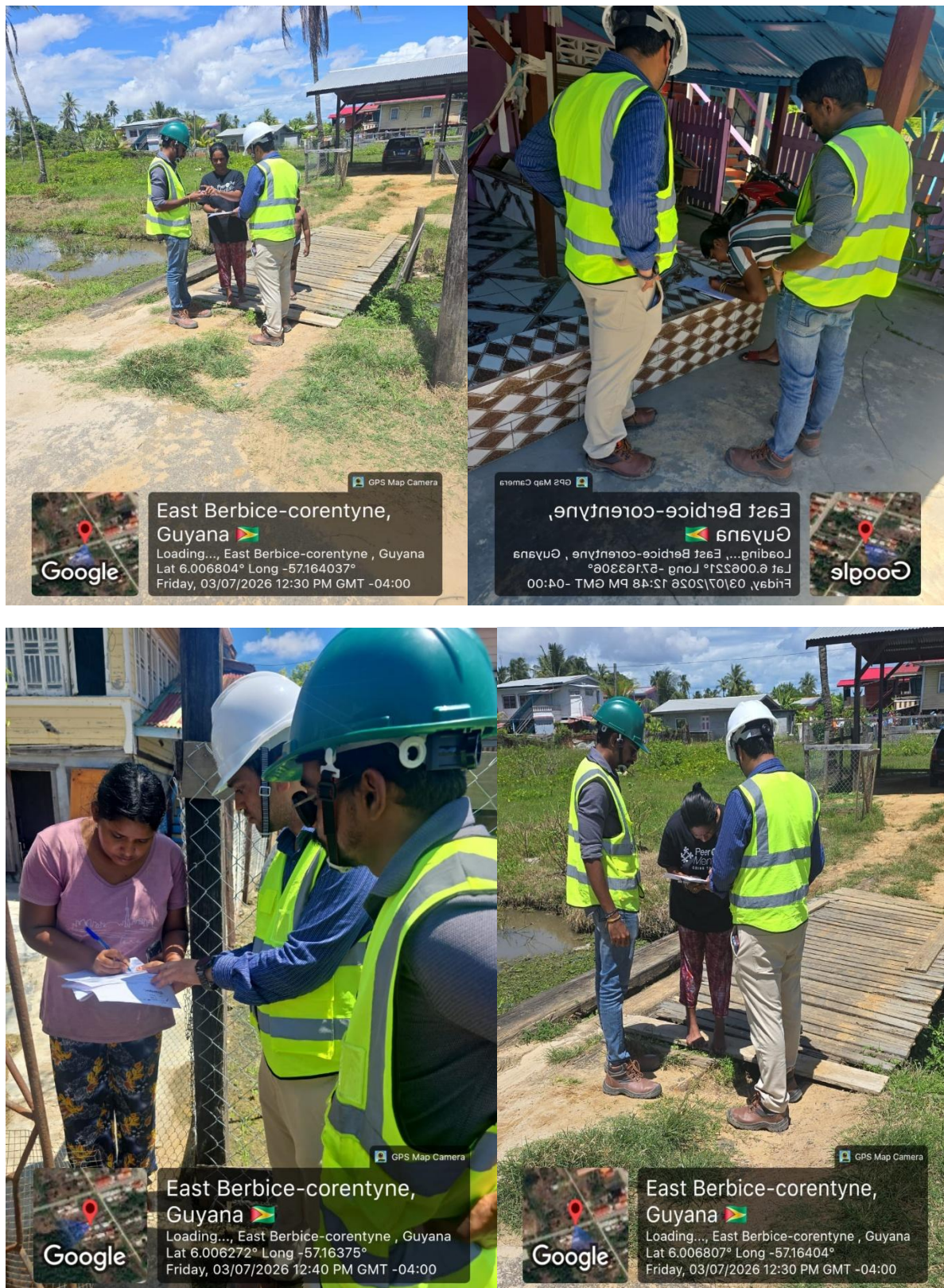
5	Solid Waste	Empty cement bags, construction debris, sludge	Waste segregation, recycling of cement bags, reuse/disposal of sludge at approved sites
6	Hazardous Waste	Used oil, oily rags, filters	Storage in sealed containers, disposal through authorized hazardous waste handlers
7	Ecology	Minor disturbance to vegetation and fauna	Restrict site boundary disturbance, dust control, no encroachment into sensitive areas
8	Social Environment	Traffic increase, safety risks, employment generation	Traffic management plan, signage, PPE for workers, local employment preference
9	Traffic	Movement of trucks causing congestion	Defined entry/exit routes, speed control, scheduling of vehicle movement
10	Monitoring	Non-compliance risk	Regular air, noise, and water monitoring; environmental record keeping

8. Summary of minutes of public Consultation –

A public engagement session was conducted within the surrounding neighbourhood on 3rd July 2026, followed by house-to-house consultations with nearby residents and stakeholders.

During these consultations, the scope, objectives, and key components of the proposed project were presented and discussed. Stakeholders were informed about the anticipated environmental and social impacts associated with the project during its operational phase. The proposed mitigation, monitoring, and management measures designed to prevent, minimize, and control potential adverse impacts were also explained in detail. Participants were encouraged to share their views, concerns, and recommendations, which were documented and considered as part of the project planning and environmental assessment process.

Photographs:-



Attendance Sheet:-

 VISHWA SAMUDRA CHALLENGE IT. CHANGE IT.	Doc. ID VSE/HSE/003
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DATE: 3/07/2026

PROJECT SITE: 10A-3, Upgradation of Highway

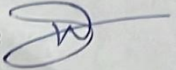
NAME OF TOPIC/ SUBJECT: Public Consultation of Asphalt Plant (Hot-Mix Plant) MOC

LOCATION: Village - 59

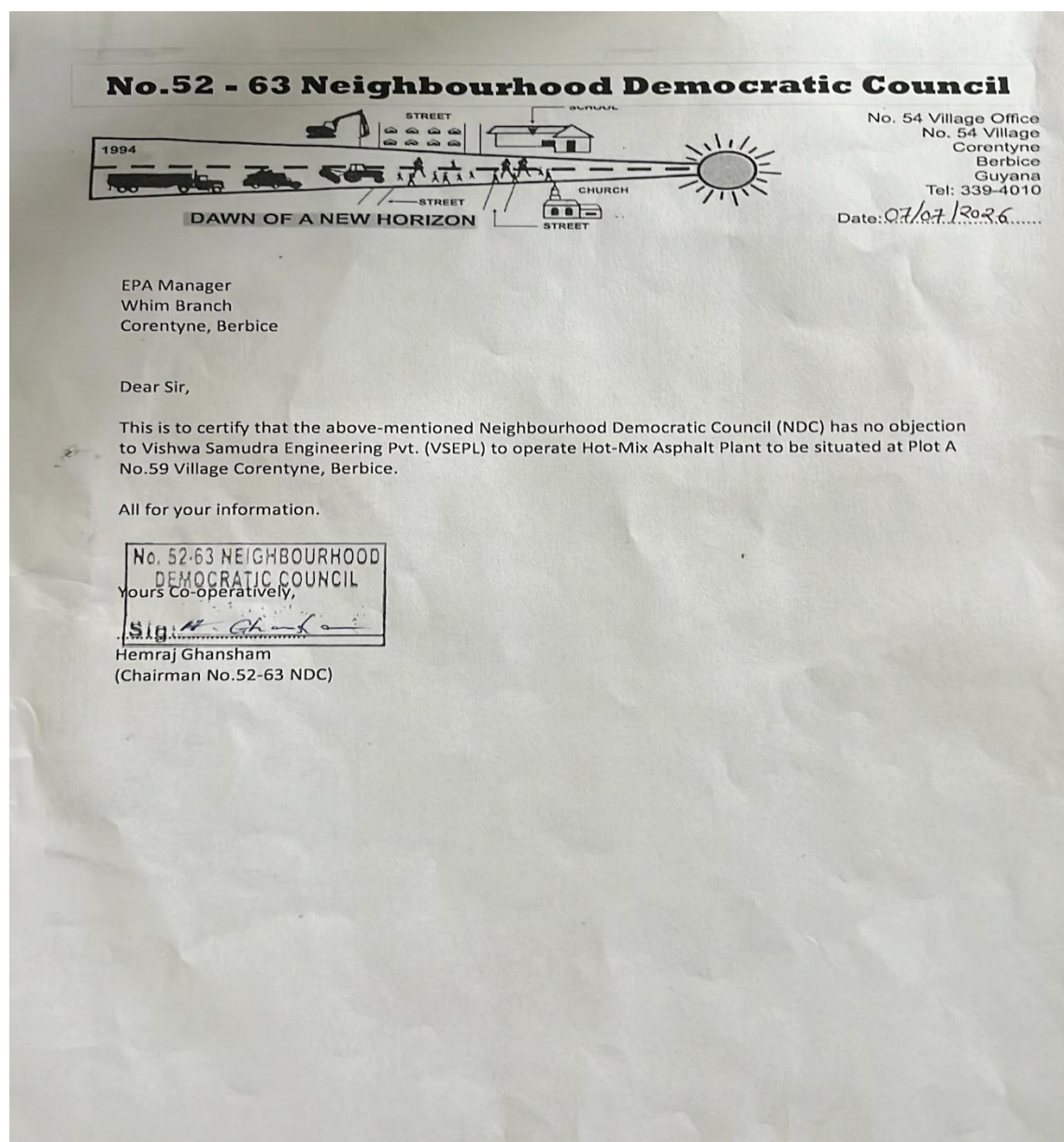
Lotes & EPA Permit

SR. NO.	NAME OF EMPLOYEE	DESIGNATION	DEPARTMENT	SIGNATURE
1	Durmatte Bhual	No 59 Village	248	D. Bhual
2	Sarah charan	No 59 village	247	S. charan
3	P. Mohan	No 59 Village	243	P. Mohan
4	Radha Hemraj	No 59 Village	247	R. Hemraj
5	J. Seeram	No 59 Vill.	129	J. Seeram
6	R. Radha	No 59		381250 RR
7	Sarah	No 59		Sarah Anand
8	B. Mahalingam		121	B. Mahalingam
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Faculty Name: vivek kumar

Signature: 

NOC Letter from NDC after public Consultation: -



9. Description of any assumptions, uncertainties and gaps in knowledge. –

The assessment is based on available site information, secondary data, and standard engineering assumptions applicable to Asphalt plant operations. It is assumed that the project will operate within proposed design capacity (120 Tonne/hr) and follow standard environmental management practices.

Uncertainties may exist due to variations in site-specific conditions such as weather, groundwater depth fluctuations, traffic intensity, and seasonal environmental changes. Gaps in knowledge are primarily related to the absence of long-term site-specific monitoring data for air quality, noise, and groundwater parameters at the exact project location. These will be addressed through regular monitoring during the operational phase.

10. A non-technical summary of the project

The proposed project is a Asphalt plant with a capacity of 120 Tonne/hr per hour. The plant will be used to produce ready-mix concrete required for construction activities in the project area. It will be a temporary installation and will operate only for the duration of the construction works.

The plant will receive raw materials such as Bitumen, sand, aggregates, and mix them in controlled proportions to produce concrete. The operation will involve movement of trucks for transportation of materials and finished concrete.

Minor environmental impacts such as dust generation, noise, and wastewater from equipment cleaning may occur during operation. However, these impacts will be temporary, localized, and will be managed through proper environmental control measures such as dust suppression, waste management.