

Project Summary – Maida Village Camp- Palmyra to Molsen Creek Four Lane Road Upgrade- Lot 2- Bloomfield to No. 56 Village Berbice.

Developer: China Road and Bridge Corporation (CRBC)

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1. Location & Setting

The Lot 2 sub-camp that China Road and Bridge Corporation (CRBC) will operate sits on roughly 30 acres of gently graded former agricultural land between Bloomfield and No. 54 Village, mid-way along the Palmyra-to-Moleson Creek corridor, Maida Village.



Image 1: Maida Village Camp Location, Bloomfield to No. 64 Village Road Upgrade

Designed as the project’s field headquarters, the compound clusters its heavy-duty production plant on one flank—housing a JD3000 asphalt mixer (200–240 t/h) and an HZS60 concrete batching plant (60 m³/h)—with bundled fuel tanks, aggregate bins and a paved equipment yard immediately adjacent. A screened central core contains the workshop, materials laboratory and maintenance shed, while the opposite edge of the site is reserved for two self-contained accommodation “sub-camps” (staff dormitory and workers’ camp) plus site offices, first-aid room, canteen and recreation space, buffered by a 10-metre green strip to separate living quarters from industrial noise and dust.

Environmental controls are embedded into the layout: perimeter surface-water ditches direct runoff to an existing roadside canal, and plant wash-water passes through a three-cell settling pond before discharge, as set out in CRBC’s Camp Flooding & Waste-water Plan. Domestic sewage is treated in a septic-tank/soak-away system, while kitchen, office and construction waste are segregated and hauled to the Berbice licensed facility under the project’s Waste-Disposal Plan.

A single-controlled access gate links the internal gravel roads to the Corentyne Highway; a second, smaller satellite yard near No. 56 Village will shorten haul distances when work shifts eastward. Together, the two lots give CRBC the space to house personnel, fabricate pavement materials and service equipment without encroaching on nearby communities, streamlining delivery of the three-year four-lane upgrade.



Image 2: Maida Village Camp Site, GPS: 6°13'29" N, 57°19'38" W; 30 acre former can.e land between Bloomfield & No 54.

2. Project Layout

ZONE (WORKING CLOCKWISE FROM THE MAIN GATE)	KEY INSTALLATIONS	PURPOSE & NOTABLE DESIGN FEATURES
NORTH-WEST CORNER – MAIN ENTRANCE & LOGISTICS STRIP	<ul style="list-style-type: none"> • 6 m-wide paved gate apron tied directly to the Corentyne Highway • Security office & guard hut (right-hand side as you enter) • 40 m weighbridge lane with bypass loop for light 	<p>All heavy traffic arrives here. A-frame gantry over the weighbridge gives 5.5 m clearance; CCTV cameras cover the gate, bridge, and diesel tank to the east.</p>

	<p>vehicles</p> <ul style="list-style-type: none"> • Fire-water stand-pipe & spill-kit station 	
<p>NORTHERN EDGE – “PRODUCTION SPINE”</p>	<ul style="list-style-type: none"> • JD-3000 drum-mix asphalt plant (two 40-t hot-storage silos on the highway side) • HZS-60 concrete batching plant (slightly west of the asphalt unit) • 60 m³ double-wall diesel tank and 250 m³ vertical bitumen tank farm, each in a 110 % RC-bunded bay • Aggregate/RAP stock-yard (three conical piles) with wheel-loader ramp 	<p>This strip is set back ± 15 m from the perimeter fence so that noise shields (container wall + 10 m green buffer) can be planted between the plant and the road. Transfer conveyors run southwards, keeping truck circulation clear of the stockpiles.</p>
<p>CENTRE OF THE PLOT – SERVICE & MAINTENANCE CORE</p>	<ul style="list-style-type: none"> • Heavy-equipment workshop with two service pits and overhead crane • Spare-parts store & lubricants shed (in a shared bund) • Materials testing laboratory • Covered diesel fuelling island 	<p>A one-way clockwise haul loop rings this block, preventing cross-traffic with the accommodation area. The loop is surfaced in recycled asphalt millings to minimise dust.</p>
<p>SOUTH-WEST QUADRANT – CAMP VILLAGE</p>	<ul style="list-style-type: none"> • Two 60-room accommodation blocks (G+1) separated by an 8 m fire lane • Administration building, site clinic, canteen & recreation hall (volleyball court to the south) • Septic tank with twin 20 m soak-away trenches, fenced 	<p>A 10 m vegetated berm separates the village from the plant noise. Pedestrian paths run east–west through the accommodation zone and tie into the service-core loop via zebra crossings.</p>

<p>SOUTH-EAST CORNER – WATER & WASTE MANAGEMENT ZONE</p>	<p>off from foot-traffic</p> <ul style="list-style-type: none"> • Three-cell HDPE-lined settling pond ($\approx 2\,000\text{ m}^3$) for process and storm water • Concrete wash-out pit with weir • Bunded drum store for used oil & hazardous waste (connected by hard-stand to the workshop) 	<p>The pond's outlet culvert discharges northward into the perimeter drainage swale; a manual penstock allows isolation if turbidity or pH is out of spec. A gravel emergency-overflow channel is graded away from the accommodation blocks.</p>
<p>PERIMETER WORKS & CIRCULATION</p>	<ul style="list-style-type: none"> • 2.4 m chain-link security fence set 1 m inside the legal boundary • Ring drain graded anticlockwise to the settling pond • 4 m-wide internal fire track hugging the fence • Solar-powered LED lights every 30 m 	<p>One vehicle gate (north-west) and a secondary pedestrian gate (south-west) are shown. A 25 km h^{-1} speed limit applies on the loop road, with speed humps at the pedestrian crossings.</p>

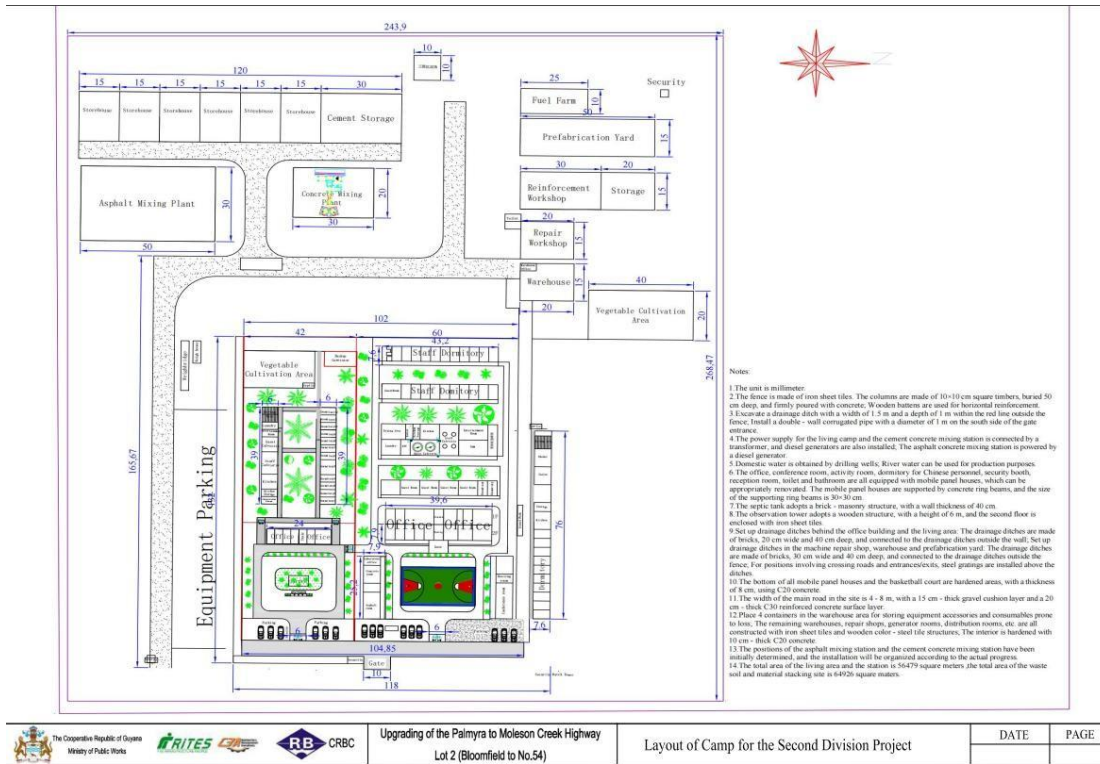


Image 3: Maida Village Site Layout

2.6 Hazardous Chemicals Inventory (list maybe subject to change)

Chemical / Product	Site Use	Key Constituents / GHS	Hazards if Spilled	Primary Controls
Road-grade Bitumen (PG 64-16)	Asphalt drum & storage	PAHs – persistent	Smothering film on water; PAH leachate	Bunded tanks, spill pans
Diesel (ULSD)	Generators, mobile plant	Hydrocarbons (BTEX <0.02%)	Acute aquatic tox (LC50 2–4 mg/L)	Double-wall tank, spill-kits, no-fuel near drains
Hydraulic / Lube Oils	Heavy equipment	Base oil + ZDDP	Persistent film; chronic tox	Drip trays, used oil drums, recycler
Cut-back Asphalt / Flux	Cold-patch / prime	Light naphtha; flammable	VOC odour, fish LC50 <10 mg/L	Sealed kettle, NFPA cabinet
Anti-strip Agent (Fatty-amine)	Asphalt additive	Cationic surfactant	Toxic to fish ppm	Closed pump, spill-tray

Mould Release (Soy/Diesel)	Truck beds, forms	Depends	Diesel: as diesel; soy ↑BOD	Prefer bio-based, wash-bay
Concrete Admixtures	Batch plant	NSF, lignin, citrates	Local pH shift	Closed drums, spill pallet
Cleaning Solvents	Parts washer	Mineral spirits; flammable	Fire; aquatic life harm	Closed washers, vapour-tight lids

3. Summary of plant operations during road construction

The purpose of the sub camp is to provide auxiliary services for the construction of the Lot 2 Bloomfield to No 56 Village Four Lane Highway. Below is a summary of the operationalization quantities the asphalt plant and cement batching plant is expected to produce for the completion of 30km of road. Note that these quantities are estimates that are subject to change during the construction cycle depending on project variations.

Asphalt plant (JD-3000 drum-mix, rated 200 – 240 t h⁻¹)

- Planned for the full 36-month paving programme (mid-2025 → mid-2028).
- **Total hot-mix demand:** ≈ 350 000 t to surface-dress the 30 km four-lane corridor (wearing, binder and base courses plus contingency).
- **Operating pattern:**
 - **Peak windows:** dry-season paving runs of 10 h day⁻¹, 6 days wk⁻¹, giving ~ 14 000 t month⁻¹ (assumes 220 t h⁻¹ net output).
 - **Average across whole project:** ~ 9 700 t month⁻¹ (accounting for rain downtime, mobilisation and demob).
- **Annualised split:**
 - Year 1 (2025/26) earthworks & base – 120 000 t ○ Year 2 (2026/27) main surfacing – 160 000 t ○ Year 3 (2027/28) tie-ins & shoulders – 70 000 t

Concrete batching plant (HZS-60 central-mix, rated 60 m³ h⁻¹)

- Supports box culverts, headwalls, drain slabs and ancillary structures.
- **Total structural-concrete requirement:** ≈ 90 000 m³ (equates to ≈ 220 000 t fresh weight).
- **Operating pattern:**
 - **High-demand bursts** during culvert construction—8 h day⁻¹, 5 days wk⁻¹ → ~ 7 000 m³ month⁻¹ (at 55 m³ h⁻¹ net).

- **Average over project life:** ~ 2 500 m³ month⁻¹, as pours are episodic.
- **Annualised split:**
 - Year 1 foundations & culverts – **35 000 m³** ○ Year 2 median drains, kerbs – **40 000 m³** ○ Year 3 finishing works, remedials – **15 000 m³**

4. Baseline Environment

The Maida Village site sits in a low-lying, rain-intense coastal plain where careful drainage and robust secondary containment will be critical. The environmental receptors of greatest concern are (i) roadside residences 80–100 m down-wind and (ii) irrigation canals that drain directly to the Atlantic. With limited baseline industrial pollution, any dust, hydrocarbon or high-pH discharge from the camp would represent a noticeable local increase—which aligns with the mitigation hierarchy in the Contractor’s Draft-ESMP (e.g., HDPE-lined settling pond, 110 % bunds, strict dust-suppression) is well aligned with baseline sensitivities.

Thematic area	Current (baseline) condition	Why it matters for project design / E&S management
Climate & meteorology	<ul style="list-style-type: none"> • Tropical rainforest (Af) regime with two wet maxima: May-July & Nov-Jan. • Mean annual rainfall ≈ 1 785 mm at Albion station (14 km W), record range 1 057–2 752 mm y⁻¹ . • Coast temperatures 22 – 31 °C; relative humidity 77 – 90 % . • Prevailing N-E trade-wind 9-14 km h⁻¹ (Nov–Mar slightly stronger). 	Determines sizing of stormwater drains / settling pond; sets windward direction for dust & odour dispersion modelling.
Topography, soils & geology	<ul style="list-style-type: none"> • Flat coastal plain, elevation < 3 m amsl. • Surficial marine clays & silt loams over sandy sub-soil; moderate shrink–swell and impeded drainage. • High organic content in abandoned rice beds; potential for acid-sulphate conditions if long-term dewatering. 	Low relief → flood risk in intense showers; clayey soils require good compaction for hard-standings; bund liners must resist acidity.

<p>Surface & ground-water</p>	<ul style="list-style-type: none"> • Site is bounded by drainage canals that discharge north to the Atlantic via sluice (≈ 2 km). • Ground-water in the shallow coastal aquifer at 1.5–2 m below ground; typically brackish 	<p>Confirms need for lined settling pond and secondary containment; limited potable GW \rightarrow trucked or treated supply is advisable.</p>
	<p>(EC > 1 000 $\mu\text{S cm}^{-1}$).</p> <ul style="list-style-type: none"> • Indicative treated-water quality at nearby Port Mourant GWI plant: pH 6.6, iron 0.07 mg L⁻¹, turbidity < 1 NTU. 	
<p>Air-quality baseline</p>	<ul style="list-style-type: none"> • Rural coastal background PM_{2.5} \approx 10–15 $\mu\text{g m}^{-3}$; PM₁₀ \approx 20–30 $\mu\text{g m}^{-3}$ (WHO modelled rural figures). • No industrial point sources within 10 km; main contributor is occasional cane-field burning. 	<p>Provides benchmark for EIA significance; fugitive dust from earthworks likely to be the dominant local increment.</p>
<p>Ambient noise</p>	<ul style="list-style-type: none"> • Day-time LAeq at 30 m from the Corentyne Highway typically 55-60 dB(A); night 45-50 dB(A). • GNBS residential limits: 75 dB(A) day / 60 dB(A) night. 	<p>Establishes baseline for construction-noise impact assessment and compliance targets.</p>
<p>Land use & visual setting</p>	<ul style="list-style-type: none"> • Abandoned rice-field blocks now dominated by mixed rice & small-holder cane, interlaced with coconut and fruit-tree homesteads. • Ribbon housing along highway 80-100 m west of the proposed gate. 	<p>Confirms visual receptors and dust/noise sensitive uses; informs planting of vegetative buffer berms.</p>
<p>Ecology / biodiversity</p>	<ul style="list-style-type: none"> • Heavily modified agro-ecosystem; vegetation = grasses, Canna, Typha and shrub willow along canals. • Common wetland birds include Snowy Egret, Cattle Egret, Wattled Jacana; no IUCN-listed critical habitat recorded. • No designated protected areas within 25 km. 	<p>Low ecological sensitivity but canals are used by wading birds \rightarrow sediment & hydrocarbon controls needed.</p>

Socioeconomic & cultural	<ul style="list-style-type: none"> • Maida Village/Philippi village cluster \approx 750 residents; agriculture and remittances dominate income. • Primary school at No. 53 village (1.3 km), health post at Albion (12 km). • No registered archaeological or Amerindian heritage sites in the footprint. 	Guides stakeholder engagement focus (farmers, road commuters, school routes) and informs traffic safety planning.
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5. Air-Quality

A screening-level assessment that was conducted for the area indicates that the asphalt drum-mix plant, $60 \text{ m}^3 \text{ h}^{-1}$ concrete batch plant and 450 kVA diesel generator, running at full hourly output, will add only modest increments to the rural coastal background air-quality at Maida Village. Predicted 24-hour PM_{10} rises by about $12 \mu\text{g m}^{-3}$ and $\text{PM}_{2.5}$ by roughly $4 \mu\text{g m}^{-3}$ at the nearest homes 100 m down-wind. When these increments are combined with typical background values ($\approx 30 \mu\text{g m}^{-3}$ PM_{10} and $15 \mu\text{g m}^{-3}$ $\text{PM}_{2.5}$), the totals remain just below the WHO 24-hour guidelines ($45 \mu\text{g m}^{-3}$ and $15 \mu\text{g m}^{-3}$ respectively), leaving a narrow margin that could be eroded by unpaved-road dust during the dry season.

Stack emissions of nitrogen dioxide are driven mainly by the generator. With its current 10 m exhaust, the worst-case 1-hour NO_2 concentration at the houses is forecast at $\sim 186 \mu\text{g m}^{-3}$ —only 7 % below the $200 \mu\text{g m}^{-3}$ WHO limit. Sulphur dioxide, carbon monoxide and total VOCs stay comfortably within guidance values, while odour or PAH nuisance from the asphalt drum is unlikely except under very calm evening conditions.

The tightest compliance point is therefore NO_2 from the generator, easily resolved by fitting a taller ($\geq 15 \text{ m}$) stack or using Tier-4 SCR technology. To preserve the PM safety margin the plan must focus on aggressive dust suppression: water carts on haul roads, moist aggregate handling, real-time fence-line PM alarms and strict 25 km h^{-1} site speed limits. With these measures—plus routine bag-house maintenance, lined wash-out pits and a community hotline—the project should meet international air-quality objectives throughout construction and paving operations.

6. Water Quality

Sampling in the agricultural drainage canals that border the Bloomfield-to-No 56 corridor shows **turbidity consistently above 100 NTU, pH 6.8 – 7.4 and dissolved oxygen (DO) 4 – 6 mg L⁻¹**; faecal-coliform counts spike after livestock or household discharges, especially following heavy rainfall. In the dry months the canals can become stagnant, but salinity remains low because they empty northwards through sluices. Domestic tap-water drawn from the No 56 Water Treatment Plant meets Guyana Water Incorporated limits for pH (6.5-8.5), iron and residual chlorine, with **no persistent exceedances recorded in 2023 mini-lab data.**

SOURCE	MAIN POLLUTANTS	POTENTIAL EFFECT
CONCRETE TRUCK WASH-OUT & MIXER RINSING	Alkaline slurry (pH 11.2), high TSS, traces of Cr ⁶⁺	pH spikes and >300 mg L ⁻¹ TSS in canals; fish kills; scaling at No 56 WTP intake 600 m downstream
ASPHALT PLANT PURGE WATER & SPILLS	Oil & grease 50-200 mg L ⁻¹ , PAHs	Hydrocarbon sheen, elevated COD/BOD, chronic benthic toxicity and tainting of irrigation water
AGGREGATE/RAP STOCKPILES	Sediment-laden runoff with Zn, Cu in fines	First-flush turbidity surges (>400 mg L ⁻¹); canal siltation
FUEL & LUBE HANDLING	Diesel, hydraulic oil, coolants	Localised sheen on drains after rain, especially where canals are <80 m from plant
EARTHWORKS & HAUL-ROADS	Fine clays in storm runoff	Blockage of trenches, yard flooding
WORKER-CAMP SEWAGE	BOD, nutrients, pathogens	Added coliform load where children bathe in drains

7. Solid Waste

WASTE STREAM	ESTIMATED QUANTITY*	ON-SITE HANDLING & STORAGE	OFF-SITE FATE
DOMESTIC / CAMP WASTE (KITCHEN SCRAPS, PAPER, PLASTICS, GLASS)	≈ 50 t yr ⁻¹ (0.9 kg person ⁻¹ day ⁻¹ × 150-worker average)	Colour-coded 240 L wheelie bins at each accommodation block and canteen (segregated organic / (%)) recyclable / residual). materialsCentral skip compound screened and on a concrete pad.	Weekly collection by local waste disposal contractor. Recyclables (≈ 15 baled and sent to Georgetown recovery facilities.

<p>CONSTRUCTION & DEMOLITION WASTE (SCRAP REBAR, FORM-PLY, SHRINK-WRAP, BROKEN PALLETS)</p>	<p>≈ 180 t over the 3-year build</p>	<ul style="list-style-type: none"> • 12-yd³ roll-bins at the batch-plant lay-down. Timber offcuts reused for formwork until unusable. 	<ul style="list-style-type: none"> • off Metal sold to Albion scrapdealer. • Timber and inert debris disposed at NDC Designated Landfill in Berbice sanitary landfill.
<p>CONCRETE WASTE / WASH-OUT SLURRY</p>	<p>1 % of production ≈ 900 m³ (≈ 2 200 t)</p>	<ul style="list-style-type: none"> • Closed-loop washout pit (HDPE-lined, 25 m × 8 m × 2 m). • Solids allowed to harden; pH-adjusted water recycled to batch-plant. 	<ul style="list-style-type: none"> • Hardened blocks reused as sub-base fill along haul roads, or disposed to licensed inert-fill site.
<p>ASPHALT PLANT FINES & REJECTED MIX</p>	<ul style="list-style-type: none"> • Bag-house fines: ≈ 700 t over project (0.2 % of 350 000 t hot-mix). • Rejected hotmix: ≈ 500 t 	<ul style="list-style-type: none"> • Fines stored in covered silo; rejected mix stockpiled on impermeable pad. 	<ul style="list-style-type: none"> • Both reincorporated as Reclaimed Asphalt Pavement (RAP) in later mixes or used for site surfacing.
<p>PACKAGING & CONSUMABLES (CEMENT BAGS, DRUMS, BITUMEN LINERS)</p>	<p>≈ 90 t total</p>	<ul style="list-style-type: none"> • Empty cement bags compacted and landfilled. • Steel drums triplerinsed, punctured & recycled. • Bitumen bag liners scraped and landfilled. 	<ul style="list-style-type: none"> • Contractor's recycler (Albion) for metal; residuals to NDC Designated Landfill in Berbice.

HAZARDOUS WASTE (WASTE OIL, OILY RAGS, SPENT FILTERS, SPILL SORBENTS)	$\approx 18\,000\text{ L used oil} + 8\text{ t solids yr}^{-1}$	<ul style="list-style-type: none"> Bunded, roofed drum store with impermeable floor. Oil filters drained 24 h before disposal. 	Oily solids to EPA approved hazardous-cell at NDC Designated Landfill in Berbice.
SEWAGE SLUDGE (SEPTIC TANK)	$\approx 20\text{ m}^3\text{ yr}^{-1}$	<ul style="list-style-type: none"> Twin tanks desludged twice a year. 	<ul style="list-style-type: none"> Licensed vacuum tanker to NDC designated sewage waste site (Service will be provided by local contractor)

8. Natural Resources

The stock materials that will be used at the site for the project will be mainly sourced from outside of Guyana. Apart from sand, which will be taken from Siparuta, the cement, stone and other stock materials for the asphalt plant will be

9. Impacts & Significance

Insignificant (0) – no noticeable change

Low (1 – 3) – minor, easily mitigated

Medium (4 – 6) – requires routine controls

High (7 – 9) – needs specific, monitored mitigation

Very High (10 – 12) – intolerable without major redesign or offsets

The camp converts 30 acres of abandoned rice land into an industrial support hub, so land-use change itself is of **low significance**—the footprint lies in a long-modified agro-landscape with no sensitive habitats or protected species. The most tangible environmental effect is **air-quality degradation**: stack emissions from the 240 t h^{-1} asphalt drum, $60\text{ m}^3\text{ h}^{-1}$ concrete batch plant and a 450 kVA generator raise 24-h PM_{10} by $\approx 12\ \mu\text{g m}^{-3}$ and push 1-h NO_2 to $\sim 186\ \mu\text{g m}^{-3}$ at the nearest houses 100 m away, leaving only a slim margin below WHO limits. With planned dust suppression and a taller generator stack (or Tier-4 engine), this becomes a **medium significance** impact—important but readily managed.

Water-quality risk is concentrated at the HDPE-lined settling pond and fuel/bitumen farm. A major spill of diesel, alkaline concrete wash-water or oily run-off could enter the drains that lead to the Atlantic; without containment the consequence would be high. Given the design of 110 % bunds, closed-loop wash-out and penstock-isolated ponds, the probability is low, making the overall water-quality impact **low-to-medium significance**.

Noise from drum dryers, generators and site traffic is predicted at 65–70 dB(A) at the fence and 55–60 dB(A) at the frontage houses—above normal rural background but within Guyana’s 75/60 dB(A) day/night guideline if a 06:00–19:00 curfew is respected. This yields **medium significance** during paving peaks, dropping to low at other times. **Traffic safety** on the Corentyne Highway (\approx 140 truck movements day⁻¹ in dry periods) poses a **medium significance** social impact until speed limits, flaggers and haul schedules are enforced.

6. Mitigation & Monitoring

6.1. Air Quality Mitigation Measures

The table below provides some practical mitigation measures that will be applied to the area for the maintenance of air quality within the baseline limits identified in section four as best as possible.

<i>Issue</i>	<i>Mitigation / Design tweak</i>	<i>Residual risk</i>
<i>NO₂ tight margin PM₁₀ & PM_{2.5}</i>	<ul style="list-style-type: none"> Raise gen-set stack to ≥ 15 m or fit Tier-4 SCR system (≥ 80 % NO_x cut). Prohibit gen-set load-banks during still evenings. 	LOW
	<ul style="list-style-type: none"> Continuous water-cart on haul roads; speed ≤ 25 km h⁻¹. Moisture-condition aggregates (≥ 3 %). Install real-time PM sensor fence-line alarm at 80 $\mu\text{g m}^{-3}$ (1-h). 	LOW-MED (wind dependent)
<i>Dust from batch plant Odour & VOC</i>	<ul style="list-style-type: none"> Keep silo vent filters < 20 mg Nm⁻³; pulse-jet check weekly. Pave/gravell ≥ 25 m of truck apron. 	LOW
	<ul style="list-style-type: none"> Maintain bag-house ΔP 5-12 in H₂O. Cover hot-mix trucks; curfew drum-mix to 06:00-19:00. Plant neem barrier along W fence. 	LOW

6.2. Water Quality Mitigation Measures

The table below identifies the risk drivers for poor water quality during the operation of the facility for the duration of the project and controls that will be in place to prevent/mitigate any residual effects the plant’s operation may have on the surrounding environment.

#	Identified Risk / Pathway	Pollutants / Concern	Controls	Implementation Notes	Residual Significance*
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1	Concrete truck wash-out & mixer rinsing	Very high pH (11-12), TSS, trace metals	<ul style="list-style-type: none"> • Portable washbag liners in rolloff bin. • Allow solids to harden → crush & reuse as fill. 	Position wash-area ≥30 m from drains; daily pH dip (target <9).	↓ to Low-Med
2	Batch-plant yard runoff (uncured concrete fines)	Suspended solids, alkalinity	• Grade apron to sediment sump feeding straw-bale check dam.	Inspect after rains >10 mm; replace bales when 50% clogged.	Low

			• Periodic shovelling of settled fines.		
3	Sediment-laden storm runoff from stockpiles & unpaved haul areas	High turbidity, siltation of canals	<ul style="list-style-type: none"> • Straw-bale check dams every 30 m in drains. • Geo-fabric silt socks across culvert mouths. • Vetiver/cowpea hydroseed on longterm berms. • 10 m gravel entry pad at gate to knock off mud. 	Rotate bales; shake & reuse socks; seed at onset wet season.	Med → Low

4	Fuel & lube handling / small equipment leaks	Diesel, hydraulic oil, grease; sheen	<ul style="list-style-type: none"> • Pop-up portable bunds under fueling points & drumchange areas. • Rag-&-sawdust spill socks made inhouse. • Spill kit at each mobile fuelling truck. 	Train operators; empty bunds after rain; log spills >5 L.	Low
5	Bitumen hose or flange drips during transfer	Hot bitumen, PAHs	<ul style="list-style-type: none"> • Cold sandblanket catch-pit beneath transfer flange (hardens drips for shovel removal). • Keep spare sand stockpile. 	Replace sand weekly or after transfer; dispose as solid waste.	Low
6	Oily sheen in settling pond after storms	Oil & grease carry-over	<ul style="list-style-type: none"> • Floating polypropylene absorbent pillows tethered near pond outlet. • Skim with hand nets; bag & dispose when saturated. 	Visual check after >25 mm rain; record volumes	Low
				removed.	
7	High-turbidity first-flush events leaving pond	TSS surge to drains	<ul style="list-style-type: none"> • Install geo-fabric silt sock or hayfilter at pond outlet during heavy works. • Close penstock; allow settling before release. 	Trigger when upstream rainfall forecast >25 mm.	Med → Low

8	Sewage system overflow / septic upset	BOD, nutrients, pathogens	<ul style="list-style-type: none"> • Add grease traps at canteen drains (plastic barrels). • Routine desludge; divert greywater to vegetated soak-strip if heavy rains forecast. 	Track tank levels; pump at 75% capacity.	Low
9	Chemical additive storage (admixtures, anti-strip, solvents)	Localised spills; pH swings; toxicity	<ul style="list-style-type: none"> • Store drums on portable trays • Label & segregate; keep absorbent granules handy. 	Weekly inspection; consolidate partial drums.	Low

7. Stakeholder Engagement

As part of the project, the contractor has developed a Stakeholder Engagement Plan which can be found in the Contractor’s Environmental and Social Management Plan. This plan outlines how the contractor will engage the communities that fall within the project area and gives purpose and legality, a structured stakeholder analysis, objectives, an engagement schedule, a Grievance and Redress Mechanism (GRM), roles and responsibilities of the contractor, and monitoring and reporting mechanism. Below each of the features are highlighted.

The plan is built around proactive, two-way communication with everyone who may influence—or be affected by—the 30 km Maida Village-to-No. 56 works. Its core features are:

- **Clear purpose and legal anchor.** Engagement is framed as a permit requirement under Guyana’s Environmental Protection Act and CRBC’s own QHSE Standard 13, ensuring it is treated as a management deliverable, not “nice-to-have”.
- **Structured stakeholder analysis.** Households and vendors within 100 m of the right-ofway, vulnerable groups (female-headed homes, recently retrenched cane workers), utilities, regulators, local councils, the workforce and cross-border users are mapped against their “interest × influence”. Those with high stakes—roadside residents, workers, EPA, GWI, GPL—receive top-tier attention.
- **Five practical objectives with matching tools.** Objectives range from keeping ProjectAffected People (PAPs) informed about dust, traffic and schedule changes, to capturing grievances and coordinating utility relocations. Methods include leaflets, WhatsApp blasts, village noticeboards, fortnightly technical meetings, daily toolbox talks and quarterly press releases or site tours (as necessary).

- **Three-year engagement schedule.** Activities are tied to project phases: mobilisation (camp set-up), Year 1 heavy earthworks, Year 2 plant peak, and Year 3 paving and demobilisation. Each phase lists the specific engagement focus (e.g., road-safety campaigns during final paving).
- **Robust Grievance Redress Mechanism (GRM).** A 24 h hotline, WhatsApp number, drop-boxes and weekly walk-ins feed into a database that logs, categorises and tracks each complaint. Acknowledgement is due within 48 h, action plans within seven days, with escalation to senior management or the EPA after 30 days if unresolved.
- **Dedicated roles and resources.** A full-time Community Liaison Officer (CLO) plus a local assistant manage day-to-day outreach (as necessary), backed by a utility coordinator and HR for labour issues. An indicative budget of USD 60 000 per year (USD 180 000 over three years) covers staffing, materials, meetings and hotline/database costs.
- **Monitoring & reporting.** Key performance indicators include the number of grievances logged/resolved, meeting attendance, and media mentions. Results feed into monthly internal reports and quarterly public bulletins posted at Neighbourhood Democratic Council (NDC) offices and online.

8. Decommissioning

The project’s CESMP details the decommissioning of the camp site at the end of the paving of the 30 km corridor from Bloomfield to No. 56 Village. The decommissioning is scheduled for the third quarter of 2028 when the project is supposed to be at its end. Below is a breakdown of the key commitments that are outlined in the decommissioning plan in CESMP.

Aspect	Actions required under the C-ESMP
Plant & equipment removal	<ul style="list-style-type: none"> • Dismantle the JD-3000 asphalt drum, HZS-60 batch plant, tanks, silos and generator sets. • Flush fuel, oil and bitumen lines; drain and purge tanks before cutting or lifting. • Remove the weighbridge and crusher pads; haul all reusable machinery to CRBC’s central yard in Georgetown for refurbishment or sale.
Demolition of temporary works	<ul style="list-style-type: none"> • Pull down prefabricated accommodation, offices and workshops; segregate scrap steel and reusable timber. • Break up concrete hard-stands and haul them for reuse as road-base or dispose to the licensed inert-fill cell at Haags Bosch.

Waste disposal & recycling targets	<ul style="list-style-type: none"> Recover > 90 % of structural steel and > 70 % of crushed concrete. All bitumen-contaminated sand or RAP stockpiles to be reincorporated into later paving jobs or exported to GPL's stockyard for shoulder repairs.
Soil remediation	<ul style="list-style-type: none"> Excavate any visibly contaminated soil from the fuel and bitumen farm down to 300 mm; test for TPH. Back-fill excavations with clean imported fill and compact.
Settling-pond & wash-pit closure	<ul style="list-style-type: none"> Pump out remaining water, sample for pH, TSS and oil & grease; treat if limits exceed GYS 207. Break the HDPE liners, lime-stabilise any residual sludge and back-fill the pits to natural grade.
Land restoration	<ul style="list-style-type: none"> Rip and scarify all compacted areas; spread 150 mm of stock-piled topsoil. Hydroseed with a vetiver/Guinea-grass mix and plant mango and neem saplings along the former northern fence so that at least 70 % vegetative cover is achieved within 12 months.
Infrastructure left in place	<ul style="list-style-type: none"> The internal all-weather access road will be handed over to the Neighbourhood Democratic Council (NDC) as an emergency-access track, provided the NDC accepts the liability in writing.
Verification & handover	<ul style="list-style-type: none"> An EPA/NDC joint inspection will verify that hard-stands are removed, drains are free-flowing and vegetation is established. CRBC must submit a photographic closure report and certificates of waste disposal within 60 days of finishing the work.

10. Non-Technical Summary of Project

China Road and Bridge Corporation (CRBC) has been hired to widen and modernise a 30kilometre stretch of the Corentyne Highway between Bloomfield and No. 56 Village in Berbice. Today the road is a two-lane, pot-holed bottleneck; by 2028 it will be a smooth, four-lane corridor with drains, signs and safety features. That upgrade will cut travel times, make overtaking safer and open the door to heavier cross-border trade with Suriname.

To build the new road efficiently CRBC is setting up a **temporary “sub-camp” on about 30 acres of old cane land at Maida Village**. Think of the camp as a self-contained mini-factory and work village:

- an **asphalt plant** that cooks stone, sand and bitumen into hot-mix for paving; • a **concrete plant** that mixes cement, sand and water for culverts and drains;
- workshops, fuel tanks and a parts store to keep the heavy machinery running;
- dormitories, a kitchen, offices, a first-aid room and recreation spaces for the 150-plus workers who will rotate through the project.

Both plants will run only while the road is being built (mid-2025 to mid-2028). After the last layer of asphalt is laid, the equipment will be dismantled, the sheds removed and the land graded, top-soiled and grassed so it can go back to farming.

Looking after people and the environment

The plan includes straightforward but important safeguards:

- spraying haul roads and covering stockpiles so dust doesn't drift onto nearby houses;
- lining wash-water ponds and bunding fuel tanks so dirty water or diesel can't leak into the roadside canals;
- keeping noisy work and truck movements between 6 a.m. and 7 p.m.;
- setting up a 24-hour hotline so residents can report problems and get a response within two days.