C-13 Noise and Vibration Management Plan

Aim and Objective				
The purpose of **C-13 Noise and Vibration Management Plan** (NVMP) is to set out HEC's approach to manage and mitigate the residual impacts of noise and vibration from construction activities to ensure they are maintained at a safe level and do not impact on affected communities or the environment.				
Summary of Impacts and Risks				
The Project will be located in a rural setting in which ambient or background noise is consistent with a largely unmechanized society. Nighttime noise levels for undeveloped rural settings typically range from 30dBA to 40dBA, and 40dBA to 50dBA during daytime hours. Occasional spikes up to 75dBA to 80dBA may occur close to villages when chainsaws, petrol powered electrical generators or petrol-powered water pumps are in use. During construction, noise levels will increase considerably at the dam and powerhouse sites, however, as the dam site is approximately 2km from the nearest village, only minimal impacts will accrue to local inhabitants as a result of dam construction. Noise disturbance from powerhouse construction will affect Habusi village, which is located across the river, a distance of approximately 600m. Noise levels will also increase close to villages during access road improvements are underway and from the movement of trucks and other construction related vehicles during the daytime construction period (7:00am to 6:00pm). Heavy truck movements will also generate vibrations that may affect any buildings located in close proximity to the road. Management of impacts to workers from noise is addressed in **P-8 Workers Health and Safety Plan**. Construction activities also have the potential to impact on environmental values including potential disruption to fauna migratory behavior and feeding/mating patterns (e.g. bats, cuscus).				
Mitigation and Management Actions				
#	**Issue or Risk**	**Action**	**Timing / Frequency**	**Responsibility**
C-13-1.	Management of vibration generated by construction activities including: • Drilling and charging • Blasting • Operation of crusher and batching plans	• Use the Wildlife Shepherding Protocol described in **Annex C-3-IV** of **C-3 Forest Clearance Plan (FCP)** to clear sensitive fauna from the drilling/blasting area prior to commencement. • Implement the Drilling and Blasting Method Statement **Annex C-11-I** of **C-11 Drill and Blasting Management Plan (DBMP)**. • All mobile and stationary equipment must be equipped with fully functioning noise mufflers and baffles. • Limit vibration generating works (from construction equipment) to daytime working hours (7am – 5pm). • Install vibration damping pads or devices, as necessary. • Avoid simultaneous activities that generate vibration such as drill and blasting. • Use hydraulic instead of pneumatic drills (where appropriate). • Conduct preventive maintenance of plant and machineries.	Notification to nearby communities at least one week prior to any drilling or blasting activity During drilling and blasting	HEC Construction Manager CLOs HEC HSE Manager HEC Construction Manager Subcontractor
C-13-2.	Management of noise generated during construction activities including: • Drilling and charging • Blasting (including detonation of unexploded ordnance) • Crushing of aggregates	• Implement the Drilling and Blasting Method Statement **Annex C-11-I of C-11 Drill and Blasting Management Plan (DBMP)**. • Implement the measures outlined in the **C-5 Quarry Management Plan** (QMP) during any extraction and processing of aggregate/gravel • Avoid simultaneous activities that generate noise (where possible). • Install noise control baffles / noise fencing to reduce noise to acceptable levels for sensitive receptors. • Appropriate PPE must be provided and worn at all times in accordance with **P-8 Workers Health and Safety Plan**. • For machinery,: – maintain noise levels associated with all machinery and equipment, at or below 90 dB(A) – equip machines with engine exhaust silencers / mufflers and use acoustic covers on machine engines as required. – ensure that construction machineries are well-maintained and regularly inspected, without generating excessive noise above the machinery specifications. – when used intermittently, shut down between work periods or throttled down to an idling state. – when known to emit a strong noise in one direction (reversing horns), orientate to direct noise away from noise sensitive receptors.	Throughout construction	HEC Construction Manager HEC HSE Manager Subcontractor
C-13-3.	Noise generated by Project traffic - Utility vehicles, movement of heavy vehicles through project site (e.g., hydraulic braking), Reversing beepers/horns and Idling vehicles	• Implement construction traffic management measures and vehicle speed limits as detailed in **P-11- Traffic Management Plan (TMP)**. • Restrict movement of heavy vehicles through villages to the period 7:00am to 6:00pm. • Maintain all vehicles in accordance with the schedule in **Annex P-11-VI of P-11- Traffic Management Plan** (TMP). • Implement a schedule for transporting construction materials to minimise the adverse impact on residents as well as the traffic on the existing roads, with equipment such as cranes, earth moving equipment, and heavy vehicles routed in such a way to minimise disturbance to receptors along the route. • Switch off vehicles when not in use, including when waiting to enter site.	Throughout construction	HEC Construction Manager HEC E&S Supervisor HEC HSE Manager Subcontractor
C-13-4.	Noise and Vibration impacts to sensitive receptors	• Address complaints and grievances in accordance with **P-6 Grievance Redress Mechanism**. • If repeated noise complaints are received, engage with a noise specialist to run noise simulations and propose improvements to noise barriers if necessary.	During construction	HEC HSE Manager

Monitoring Requirements - No performance limits have been nominated in the ESIA.					
#	**Title**	**Description**	**Target / Performance Indicator**	**Timing / Frequency**	**Responsibility**
C-13-A.	Management of noise and vibration generation from drill and blast activities	• Minimise noise and vibration impacts by implementing the Drilling and Blasting Method Statement **Annex C-11-I of C-11 Drill and Blasting Management Plan** (DBMP)	No non-conformances	Daily.	HEC Construction Manager HEC HSE Manager

C-13-B.	Construction noise and vibration management	Monitoring of noise and vibration generated during construction activities, and its impacts on sensitive receptors will be undertaken in accordance with **M-7 Air Quality and Noise Monitoring Plan**	Refer to **M-7 Air Quality and Noise Monitoring Plan**		
C-13-C.	Management of noise associated of construction traffic	Monitoring of project construction traffic in accordance with **P-11- Traffic Management Plan** and **M-7 Air Quality and Noise Monitoring Plan**	**Refer to P-11 Traffic Management Plan** and **M-7 Air Quality and Noise Monitoring Plan**		
C-13-D.	EHS Incidents and Grievances	Environmental Health and Safety incidents, actual or potential non-compliances during operation of machinery shall be recorded through the Health and Safety Register, Grievances Redress Mechanism and Non-Compliance Reporting process as appropriate. Refer **P-1 CESMP** for more details.	All EHS incidents and grievances are recorded, investigated and closed out within required timeframes.	Reported in Monthly Progress Reports and Quarterly E&S Reports	HEC EHS Manager HEC E&S Supervisor

Supporting Documents		
Annex	**Name**	**Description**
-	None	None