

P-8 Workers Health and Safety Plan

Aim and Objective				
The objective of P-8 Workers Health and Safety Plan (WHSP) is to ensure staff, contractors and sub-contractors act in a professional and safe manner and go home safe at the end of each day. The WHSP applies to all site and office workers employed by THL, including contractors, sub-contractors, full-time, part-time, and casual staff. It also applies to all visitors (including members of the public) that enter sites controlled by THL and its contractors and sub-contractors. The WHSP will assist in meeting THL's obligations under Solomon Islands work health and safety legislation and comply with the requirements of CFPs, including adherence to the World Bank Group's Environmental Health and Safety Guidelines (EHSG).				
Summary of Impacts and Risks				
Construction activities pose a potential risk to all onsite personnel. Risk assessments must be performed by HEC and its sub-contractors prior to commencement of all works that require a method statement and all works that require a Permit to Work. Note that a risk assessment is sometimes referred to as a Job Hazard Analysis (JHA). Samples of both a JHA and a risk assessment are provided in Annex P-8-I . Refer to HEC-AH-H04-H03 for the risk assessment procedure (see also Annex P-8-II Risk Assessment Process).				
HEC maintains a suite of corporate health and safety documents that provide detailed procedures and considerations for project construction. These procedures are referenced where applicable below and copies of these detailed procedures are provided in Annex P-8-III .				
Annex P-8-IV contains details on HSE roles and responsibilities for the construction phase of the Tina River Hydropower Project.				
Note that health and safety risks related to local communities, including Covid-19 and sexual transmitted infections, are covered in P-10 Community Health and Disease Vector Management Plan .				
Other activity-specific health and safety risks are covered in P-11 Traffic Management Plan, P-13 Hazardous Materials Management Plan, C-2 Unexploded Ordinance Management Plan, C-11 Drill and Blast Management Plan, C-13 Noise and Vibration Management Plan, P-9 Workers Code of Conduct, P-7 Security Management Plan and P-14 Spill Prevention and Emergency Response Plan .				
Mitigation and Management Actions				
#	Issue or Risk	Action	Timing / Frequency	Responsibility
P-8-1.	General safety (office, accommodation and workplace)	The following measures will be implemented at the Workers Accommodation Camp and workplaces to provide a safe and healthy environment for workers: <ul style="list-style-type: none"> - Passages to emergency exits are marked and clear at all times. - Buildings equipped with fire alarms and fire-fighting equipment. Equipment maintained and readily accessible. - Sanitary toilet and washing facilities. - Potable drinking water. - Workplaces to receive natural light or be supplemented with sufficient artificial light to promote workers' health and safety, and enable safe equipment operation - Equipment to be regularly inspected, maintained and serviced. - Installation of railings or other fall prevention measures on stairs, fixed ladders, platforms, permanent and interim floor openings, loading bays, ramps, etc. - Measures to prevent unauthorized access to dangerous areas. - Sufficient fresh air supplied for indoor and confined work spaces. Refer to HEC-AH-H04-H40 Office Safety .	Throughout construction	HEC Construction Manager, HSE Manager, Camp Manager
P-8-2.	Workers unaware of project site procedures	<ul style="list-style-type: none"> • Health and safety orientation training will be delivered to all new employees to ensure they are apprised of the basic site rules and of personal protection and preventing injury to fellow employees. • Workers will be made aware of the relevant contractor procedures relating to their job description. • Workers and contractors, prior to commencement of new assignments, will receive adequate training and information enabling them to understand work hazards and to protect their health from hazardous ambient factors that may be present. • Training and licensing will be conducted for vehicle/machinery operators in the safe operation of specialized vehicles or machinery. Drivers and operators will undergo annual medical checks to determine their fitness for the job. • Refer to HEC-AH-H04-H05 HSE Training and Awareness Procedure. • Refer to Annex P-8-V List of HSE training courses provided by HEC. 	Upon induction and throughout construction	HEC Training Supervisor, HSE Supervisor
P-8-3.	Communication	Daily health and safety meetings will be conducted to provide a platform for communication and consultation on health and safety matters with workers. Refer to HEC-AH-H04-H06 HSE Coordination & HSE Meetings .	Throughout construction	HEC HSE Manager
P-8-4.	Incidents and accidents	Incidents and accidents can be prevented by eliminating unsafe acts and mitigating unsafe conditions. Behavioural Base Safety (BBS) Observation will be implemented at the site by focusing all workers and management attention and actions on their own and others' safety behaviour. The BBS programme provides for both immediate feedback to the person who was observed (both safe behaviours and unsafe behaviours are discussed), and the analysis of observations (with no name identified as to who was being observed) as they are collected and gathered across the group. The Safety Observation Card is a fixed list of the most common hazards on construction sites. It will be reviewed daily and regularly updated across the project site. Refer to HEC-AH-H04-H15 BBS Program .	Throughout construction	HEC Construction Manager, HSE Manager, HSE Supervisor, all workers
P-8-5.	Visitor Safety	A visitor orientation and control programme will be established to ensure visitors receive induction training and do not enter hazard areas unescorted.	Throughout construction	HEC Site Manager
P-8-6.	First aid and medical treatment	Equipped first-aid stations will be easily accessible throughout the project area. A First Aid Facility will be located at the site office and will function as the main medical facility for the Project workers. There will be written emergency procedures for dealing with cases of trauma or serious illness up to the point at which patient care can be transferred to an appropriate medical facility. Refer to Annex P-8-V for a floor plan of the First Aid Facility and an Injury Management and Rehabilitation Procedure. Responsibilities, training, evacuation/emergency procedures, and required equipment are provided in HEC-AH-H04-H32 Medical & First Aid Facility and P-14 Spill Prevention and Emergency Response Plan .	Throughout construction	HEC HSE Manager
P-8-7.	Identification of hazardous areas	Hazardous areas (electrical rooms, compressor rooms, etc), installations, vessels, materials, safety measures, and emergency exits etc will be communicated to workers and visitors, and marked appropriately in accordance with international standards.	Throughout construction	HEC HSE Manager, HSE Supervisor

P-8-8.	Protection from hazards that cannot be avoided (Personal Protective Equipment – PPE)	Workers shall be supplied with PPE in accordance with the specific needs and activities of their job, to allow for safe working. PPE will be properly maintained, including cleaning when dirty and replacement when damaged or worn out. Proper use of PPE will be part of the induction and refresher training programmes for employees. Refer to HEC-AH-H04-H28 Personal Protective Equipment (PPE) for information on conducting a hazard assessment of the workplace to determine the need for appropriate PPE, communicating the assessment results to employees, eliminating defective PPE, and training employees in the proper use of PPE.	Prior to commencing work, throughout construction	HEC HSE Manager, Training Supervisor
P-8-9.	Approval to perform high hazard jobs	A Permit to Work is required for jobs including, but not limited to the following: <ul style="list-style-type: none"> Construction works Alterations, modifications, repairing of permanent and temporary facilities Work inside confined space Working at height including work over 1.8 meters at height, scaffolding activities, grating removal Excavation and ground disturbance Critical lifting activities Handling of hazardous materials including radioactive source Systems and equipment testing and commissioning, pre-commissioning Vehicle/mobile equipment entry into Hazardous Areas Use of non-certified equipment in Hazardous Areas Non-routine work in workshops, warehouse A work permit is NOT required for the following types of works if it's not falling under particular criteria of permitted work (e.g. critical lifting operation during routine warehousing activities): <ul style="list-style-type: none"> Routine work carried out in established workshops and adjacent yards with fixed boundaries. Routine material handling work in established warehouses and adjacent lay down yards with fixed boundaries (not falling under critical lifting conditions). Routine office work including cleaning, servicing of office equipment, communication equipment and furniture. Maintenance cold work in temporary facilities buildings outside construction / commissioning areas, which does not exceed climbing of ladder or scaffold over 1.8 meters. e.g. hand tool work, re-lamping, servicing of air conditioners, manual painting. Routine operations in temporary facilities like catering services, housekeeping, operation of clinic etc. Visual inspection or checking without using any tools and without opening equipment and instrumentation enclosures (if such work involves confined space entry, confined space authorization is required). Any other work approved by Construction Manager and HSE Manager as permit-free upon written request from the concerned Department Manager. Refer to HEC-AH-H04-H04 Permit to Work Procedure (found in Annex P-8-III) for the detailed procedure of obtaining a permit to work. Attachment 2 of this procedure provides templates for all the different types of permits (e.g. cold permit, hot permit, confined space entry certificate, etc.) and the Permit to Work Log Sheet template (also found in Annex P-8-III).	Throughout construction	HEC Construction Manager, Discipline Supervisor, HSE Manager
P-8-10.	Welding hazards incl. high temps, fumes, radiation, electric shock	Actions to control hazards associated with the use of welding plant and fuel/oxygen cylinders are provided in HEC-AH-H04-H25 Welding Safety Procedure . These actions will be implemented by supervisors, workers and sub-contractors for the project construction. Training, housekeeping of work area and use of PPE will assist in reducing hazards.	Throughout construction	Welding supervisor, welders
P-8-11.	Moving vehicles	Vehicles with restricted rear visibility will be outfitted with audible back-up alarms. As detailed in P11 Traffic Management Plan (TMP) , the following measures will be taken to ensure driver safety: <ul style="list-style-type: none"> Clear signage will be installed, and the use of signs, flagmen and signals will be set up where necessary. Where temporary traffic signals are required, the details and locations of the signals will be discussed with the relevant authorities. The signs will be fixed safely and securely to ensure they do not become detached or dislocated and will be visible and comprehensible by all. HEC will also carry out maintenance checks to clean and re-secure signs if necessary. Appropriate supervision will be provided by HEC to control the flow of traffic when machinery needs to crossroads. Liaison with the Police and other authorities will occur before the movement of any abnormal loads. In particular, liaison with the Ministry of Infrastructure Development will occur prior to transportation on Kukum Highway and any other public road HEC will use. Access to commercial and residential properties along Lot 1 will be maintained and speed limits will be established and enforced over all construction traffic routes. 	Throughout construction	HEC HSE Manager HEC Maintenance Manager
P-8-12.	Working at Heights	Fall prevention, protection measures and emergency rescue planning will be implemented whenever a worker is exposed to the hazard of falling: <ul style="list-style-type: none"> more than 1.8 meters Into operating machinery into an excavation into water or other liquid into hazardous substances through an opening in a work surface. Refer to HEC-AH-H04-H18 Working at Height Safety Procedure and HEC-AH-H04-H19 Scaffolding Safety Procedure	As required throughout construction	HEC HSE Manager Discipline Supervisor
P-8-13.	Operating mobile and heavy equipment	<ul style="list-style-type: none"> The procedures provided in HEC-AH-H04-H21 Control and Use of Plant and Equipment Procedure will be implemented at the Project site. It includes requirements for managing, maintaining and controlling the use of plant and equipment during construction activities. The types of plant and equipment that may be used onsite during construction activities and covered by this procedure include earth moving plant, road making plant and equipment, drilling rigs, augers, mobile elevating work platforms, vehicle mounted platform, mast climbing work platforms, man-riding skips and cradles, crushing plant, asphalt plant, concrete batching plant, winches, water pumps, bar bending and cropping machine. 	Throughout construction	HEC Construction Manager HEC HSE Manager, Supervisors, Attendants

		<ul style="list-style-type: none"> A register of all plant and equipment used for construction will be kept as described in P11 Traffic Management Plan. A chock will be used when vehicles/mobile plant are not parked on a flat surface. All vehicles/mobile plant will include Traveling First Aid, mini spill kit and a fire extinguisher. Safe use of mobile cranes is covered by HEC-AH-H04-H20 Lifting Safety Procedure. All vehicles and heavy equipment will be visually inspected at the beginning of each work day for any malfunctions that could affect safe operation (refer to HEC-AH-H04-H10 HSE Inspection Procedure). 		
P-8-14.	Confined spaces	<p>Workers entering, inspecting and working in confined spaces are potentially exposed to hazardous concentrations of toxic and flammable gases, vapours and oxygen enriched or oxygen deficient working environments. Refer to HEC-AH-H04-H22 Confined Space Entry for:</p> <ul style="list-style-type: none"> the detailed procedure for working in confined spaces that will be implemented safeguards and precautions that will be followed the arrangements that will be made on site for rescue in case of emergency situations. <p>Confined spaces encompass a variety of workplaces having limited access and deficient ventilation. These procedures and precautions apply to tunnelling activities that will be carried out for construction of the main works.</p>	Throughout construction	HEC Construction Manager HEC HSE Manager, Supervisors, Attendants
P-8-15.	Lifting and suspended loads (Loading/unloading rebar and form, use of crane)	<p>Refer to HEC-AH-H04-H20 Lifting Safety Procedure for all activities involving the use of cranes, lifting gear, hoists, forklifts and telescopic material handlers. The general requirements for this procedure apply to all lifting operations, irrespective of weight and complexity of arrangements. Foundations, stages, scaffolds, derrick masts, anchorages, guys etc that have to support lifting appliances must be strong enough for the plant under working conditions. This procedure provides detailed processes, procedures, and checklists for safe lifting actions.</p> <p>Regular inspection on a monthly basis will be conducted by a competent person to all lifting equipment, appliances, chains, ropes, lifting gears and hoist (refer to attachments to HEC-AH-H04-H20 and to HEC-AH-H04-H10 HSE Inspection Procedure).</p>	Throughout construction and commissioning	HEC Construction Manager, HEC HSE Manager, Lifting Supervisor, Lifting Operators, Riggers, Signalmen/Banksmen
P-8-16.	Working around and in excavations	<p>Hazards of excavating or trenching are associated with the potential for collapse and the use of heavy plant and equipment. Actions for managing the hazards include:</p> <ul style="list-style-type: none"> The Daily Report will register all excavations including date of back filling and any other relevant information related to the history of the excavation. These records will be kept in the office. Benching, sloping and shoring (depending on soil classification/stability) will be installed to prevent cave-in. Excavations will be checked daily or before use by a competent person who can recognize signs of subsidence or other evidence of potential failure of the support system. The excavations will also be checked following any inclement weather or other environmental conditions that may affect the integrity of the excavation. Spoil, soil and heavy equipment, construction material will be kept away from excavation edge (minimum 1m away from edge, but it is dependent on weight of material) Equipment will be shut down when the operator exits the equipment. Hard barriers around the excavation, reflective signs and safety signs/posters will be erected to keep unauthorized personnel clear and traffic will be monitored at the work area. Trucks used for the removal of spoil will be controlled by authorized driver/operator. A signal man will be in place for vehicle dumping material for backfilling to prevent them over running the edge. Adequate lighting will be provided in and around excavated area for working in night hours as per the job requirement. Excavation adjacent to, or beneath powerlines, or passing under power lines is prohibited unless conditions outlined in HEC-AH-H04-H17 are met. A signal person (banks man) will be in place when equipment operators cannot see the bottom of the excavation. Dewatering equipment will be sited in locations that avoid creating a tripping hazard and will be operated only by competent persons. If any diesel/petrol generator is provided as a source of power supply near excavation, then the exhaust fumes will be ducted away in order to avoid oxygen deficiency. <p>Refer to HEC-AH-H04-H17 Excavations Safety Procedure.</p>	Prior to and throughout construction	HEC Construction Manager, HEC HSE Manager, all workers and sub-contractors
P-8-17.	Tunnelling	<p>Tunnelling is highly complex and involves the use of a range of construction techniques, engineering, plant and equipment. The hazards of tunnelling include collapse, contaminated atmospheres, use of heavy plant or equipment (refer to Annex P-8-VI and Annex P-8-VII).</p> <ul style="list-style-type: none"> The emergency response plan will specify the emergency response procedure to be implemented in the event of a major incident during tunnel construction, such as communication, locating workers within the tunnel, evacuation procedures, first aid, notifications, source of emergency respirable air, safe places/refuges, rescue equipment, drills/testing and training. The HEC company standard requires installation of emergency call and speaker facilities every 300m as well as CCTV. The mechanical ventilation design will be such that there are no dead spots, no low air speed areas, no flow reversals, no areas of dust concentration, no recirculation, and inspection points are fitted where blockages are likely to occur. The ventilation pipe will be secured to the side of the tunnel. Lighting will also be provided. Materials on the surface will be stored in places away from where ventilation fresh air intakes could be compromised through a surface fire or chemical spill. A ventilation system will be provided while the tunnel is being constructed such that it is monitored and upgraded to ensure air flows are always provided and is promptly repaired and maintained. To minimize the dust hazard arising from drilling operations in rock excavations, all holes shall be wet drilled. Water sprays or atomizers shall be used to prevent dust rising during mucking operations including keeping the floors of haulage ways. At least a weekly check shall be conducted at the tunnel face and elsewhere for concentrations of noxious or other harmful gases or dust. The maximum concentrations shall not exceed the following limits: <ul style="list-style-type: none"> Carbon dioxide 1,5000 parts/million by volume. Carbon monoxide 100 parts/million by volume. Nitric oxide 35 parts/million by volume. Nitrogen dioxide 5 parts/million by volume. Hydrogen sulphide 15 parts/million by volume The air shall not contain more than the following concentrations of total respirable airborne particles of dust (sizes from 5.0 to 0.2 microns). 	Prior to and throughout tunnelling activities	HEC Construction Manager, HSE Manager, Discipline Supervisor, tunnel workers

		<ul style="list-style-type: none"> o quartz content < 1% 8 mg/m³ o quartz content > 1% < 4% 4 mg/m³ o quartz content > 4% 0,15 mg/m³ <ul style="list-style-type: none"> • The ventilation system in each section of the Works shall ensure that the following minimum air quantity requirements are provided at all times: <ul style="list-style-type: none"> o 3.0 m³/min for each person or worker o 6.0 m³/min for each installed kW power of diesel plant or equipment o The average air velocity in all excavation areas shall not be less than 0.3 m/s. o The minimum quantity of fresh air delivered at the advancing face shall be 7 m³/s. • The gas detection devices shall be placed at the Power Tunnel and Surge Tank. • Oxygen mask & cylinder harness will be kept in adequate numbers as stand -by for emergency rescue. • Press-in ventilation system shall be provided. • A fan will be installed at the entrance of the tunnel to meet the requirements of tunnel construction (diameter of 600mm, power of 45kW, air volume of 340m³/min and wind pressure of 7.84kpa (800mmAq)). The high-power and high-performance fan duct will have an effective distance of air supply of more than 3km to ensure the requirements of long-distance ventilation. • In general, the noise of ventilation equipment shall not exceed 75 dB, the fresh air volume for tunnel workers shall not be less than 30m³ per hour, and the relative humidity shall be between 65% and 80%. Meanwhile, the oxygen content in the air inhaled by the staff shall not be less than 20%, the concentration of H₂S, CH₄ and other toxic or harmful gases shall not exceed the concentration harmful to human health, and the concentration of flammable gas shall not exceed 10% of the minimum explosive concentration. • The ventilation equipment shall achieve the following maximum permissible level: <ul style="list-style-type: none"> o Nitrous fumes 3ppm o Carbon dioxide 5000ppm o Carbon monoxide 25 ppm • Air monitoring equipment shall be positioned at each working face, in bye each airlock and also within 20m of the tunnel entrance when the tunnel has advanced 250m or more. • The ventilation equipment shall commence its operation 30 minutes before any man-access e.g. in the morning or after lunch to ensure there is no accumulation of carbon monoxide or dioxide etc. • Oxygen mask & cylinder harness will be kept in adequate numbers as stand -by for emergency rescue. • Re-entry testing procedures including re-entry times after blasting will be provided to workers. The monitoring will include air testing for: <ul style="list-style-type: none"> o flammable fumes or gases o oxygen deficiency and the presence of asphyxiant gases o unsuitable temperature and humidity o airborne contaminants like toxic gases, fumes or respirable dusts. • Warning signage for areas without adequate ventilation will be installed. The danger, warning, caution or information signs shall be provided, erected, maintained and removed by HEC. The signs shall be no less than 1.5m x 1.0m in size written boldly in English as well as incorporating visual images of the safety message. These signs shall be erected on existing footpaths and at points of access likely to be used by the public to warn, caution or inform them. • Plant cut-offs will be used in explosive atmosphere. • In the event that the risk assessment identifies dusts and silicas may be hazards, extraction at or close to the point of generation will be maintained by suing brattice curtains or half-curtains to reduce dust roll-back; and ventilation capacity will be increased where needed. • Water sprays will be used where necessary to suppress dust. • Workers will be provided with PPE respirators rated for the concentration and duration of dust exposure. All tunnel personnel shall wear appropriate personal protective equipment. (In addition to safety helmets and protective footwear, safety equipment such as safety glasses, rubber gloves, ear protectors, goggles or face shields, self-rescuers, dust masks, breathing apparatus etc.) • Sign in/sign out procedures will be implemented for entry and re-entry into the tunnel. 		
P-8-18.	Drowning hazard when working over or near water bodies	<ul style="list-style-type: none"> • Workers will be restricted to access particular areas (e.g. hazardous areas, working on river bed/in water). • Warning signs at the perimeter of construction areas and barricades will be installed to notify workers of hazards at work sites adjacent to watercourse. • Workers will not work alone near any water body. • If workers are required to enter a water body deeper than knee height a Personal Flotation Device will be worn, and this must be in good condition, regularly checked/serviced (if automatically inflating) and not outside of manufacturer's expiry period. • A lanyard/rope will be kept within easy reach of the work area, in case rescue/assistance is required. • Anyone working in water will be supervised by a spotter on the bank/edge of the water body; this person must be a competent swimmer and able to perform a rescue if needed. • Workers will only enter a watercourse if they are a competent swimmer. • No person shall enter any water body during a flood. 	Prior to and throughout construction	HSE Manager, Discipline Supervisor, all workers
P-8-19.	Sprains and strains from manual handling and ergonomic hazards	<p>The risks involved in manual lifting or handling of a load will be assessed by a person with experience of the tasks according to factors such as nature of the task, the load, the working environment and individual capability (per HEC-AH-H04-H03). The identified risks will be reduced by implementing practical control measures such as:</p> <ul style="list-style-type: none"> • providing mechanical assistance • making load smaller or lighter • training workers to identify potentially hazardous handling operations and training in good handling techniques. <p>Refer to HEC-AH-H04-H29 Manual Handling for detailed actions for manual handling of loads.</p>	Throughout construction	HEC HSE Manager, Discipline Supervisor

P-8-20.	Live Electricity	<ul style="list-style-type: none"> • All energized electrical devices and lines will be marked with warning signs. • Electrical cords, cables, and hand power tools will be checked for frayed or exposed cords. Power cords and extension cords will be protected against damage from traffic by shielding or suspending above traffic areas. • The Electrical Work Superintendent will carry out at least monthly audits of compliance of the temporary electrical supplies on the project site. • A register of checked and tagged electrical equipment will be kept onsite. • Requirements contained in HEC-AH-H04-H24 Temporary Electrical Safety Procedure will be followed by HEC managers, supervisors, workers and sub-contractors. This procedure applies to all construction works including, generating station, switchyard, 11kV site distribution system Intake controlling and monitoring station, use and maintenance of temporary electrical supplies and any other electrical equipment required for the permanent works. This procedure provides detailed actions regarding: <ul style="list-style-type: none"> – general electrical safety – lock out/tagout procedures – Insulation – earth leakage circuit breakers – checking/inspection of power generators/transformers, distribution and hand tools – clearance around electrical equipment – enclosures for circuits operating at 50V or more or storing more than 5J – electrical equipment rooms – overload protection – rating of equipment – equipment acceptability – cable clamping – clearance distances from energized overhead power lines – working conditions – management of extension cords – electrical hazard (electric shock, fires) and their prevention. • Actions for the erection and installation of electrical equipment are: <ul style="list-style-type: none"> – When new electrical equipment or an electrical installation is installed, it will be tested and examined to ensure the equipment or the installation is electrically safe before commissioning. This work will be performed by the subcontractor/workers with required level of competence and skills. – Risk assessments on these works must be carried out and control measures used must be implemented before start of works. The following control measures are commonly used for such works: <ul style="list-style-type: none"> o A. Barriers installed to prevent access by unauthorized persons o B. Remove any metallic jewellery or accessories before doing any erection/installation works of electrical equipment o C. Remove any sources of water which makes the environment wet o D. Insulating mat used in close situation or when high fault currents exist o E. Insulating gloves used in close situation or when high fault currents exist o F. Live parts not involved in the installation works to be covered o G. Work in a buddy system (not alone) o H. Lock-out/Tag-out procedures to be implemented o I. Minimum Personal Protective Equipment (PPE) to be worn. • Actions for the testing and commissioning of electrical equipment are: <ul style="list-style-type: none"> – Remove metallic jewellery or body piercing when conducting tests. – Non-flammable clothing with long sleeves and long trousers worn in high fault current situations or in a close testing environment. – Insulating mat used in a close situation or when high fault currents exist. – Insulating gloves used in a close situation when high fault currents exist or when the ground or surrounds are wet. – Instrument checked to ensure it is suitable for prospective fault current, is in test and the leads are in a satisfactory condition. – Tools checked to ensure insulation is complete and in good condition RCD used on supply for equipment connected by a plug and socket. – Barriers installed to prevent access by the unauthorized people. – Live parts not involved in the testing activity covered for safety. – Safety Observer is used if high fault currents exist at work site or a risk assessment identifies sufficient additional hazards. 	Throughout construction	HEC HSE Manager, HSE Supervisor, Electrical Work Superintendent, subcontractors, electricians,
P-8-21.	Chemical hazards	<p>Chemical hazards will be managed through implementation of P-12 Waste Management and Point Source Pollution Plan and P-13 Hazardous Materials Management Plan. Actions may include:</p> <ul style="list-style-type: none"> • replacement with less hazardous substitute • engineered or administrative controls to avoid or minimise release of hazardous substances • limiting number of employees exposed to hazardous substances • labelling hazardous substances in accordance with international requirements • training workers in safe work practices and use of PPE. 	Throughout construction	HEC Construction Manager, HSE Manager, HSE Supervisor, Training Supervisor

P-8-22.	Ionising radiation	Workers conducting non-destruction testing onsite need to be protected against over exposure to ionising radiation. Refer to HEC-AH-H04-H26 Site Radiography for actions for the safe use of both radiographic and non-radiographic equipment.	Throughout non-destructive testing	HEC Construction Manager, HEC HSE Manager, NDT Inspector
P-8-23.	Explosives	Explosives will be stored in a purpose-built magazine, checked/monitored by security personnel. The transportation, storage, processing, packaging on site, blasting and the disposal of the blasting material will comply with Solomon Island regulations on the use of explosives. Explosive boxes will be clearly labelled with an "explosive" sign. Further actions are provided in C11 Drill and Blast Management Plan .	Throughout construction	HEC Construction Manager, Security Services
P-8-24.	Excessive noise	Hearing protection will be provided in the case where an employee is exposed to a noise level greater than 85 dB(A) for a duration of more than 8 hours per day. No unprotected ear will be exposed to a peak sound pressure level (instantaneous) of more than 140 dB(C).	As required throughout construction	HSE Supervisor, HSE Officers
P-8-25.	Eye hazards	Use of machine guards or splash shields and/or face and eye protection devices, such as safety glasses with side shields, goggles, and/or a full-face shield is required if eye hazards are identified.	Throughout construction	HEC HSE Manager, HSE Supervisor
P-8-26.	Remote Locations	Where workers are required to perform work under lone or isolated circumstances, PPE and safety measures will be in place including verbal contact with the worker at least once every hour, and provision for the worker to summon emergency aid.	As required throughout construction	HSE Supervisor
P-8-27.	Heat Stress	Actions related to preventing heat stress in HEC-AH-H04-H35 Heat and Cold Stress will be implemented at site to minimise workers developing heat stroke, heat exhaustion, heat cramps and heat rash. In the event a worker develops symptoms of heat stress, they will report to the first aid facility and treated.	Throughout construction	HSE and discipline supervisors
P-8-28.	Health and Hygiene	<ul style="list-style-type: none"> Sanitation facilities, for both men and women will be provided on site and at the workers accommodation camp. Regular inspection of the sanitation facilities will be conducted. Hand hygiene stations will be provided. Adequate supply of drinking water will be provided to workers. Drinking water supplies will be clearly marked. Worker's accommodation camp kitchen/caterers will maintain high standards of hygiene. First aid equipment and facilities will be provided (see separate hazard/issue) and a designated vehicle will be stationed outside the first aid facility for medical evacuations to Honiara. Domestic rubbish will be managed in accordance with P12 Waste Management Point Source Pollution Plan. Indoor and outdoor spraying/thermal fogging of workers accommodation camp will be conducted for reduction of disease carrying mosquitos. COVID-19 protocols will be implemented (refer to P10 Community Health and Disease Vector Management Plan). Refer to HEC-AH-H04-H33 Sanitation and Food Hygiene for detailed actions that will be implemented to protect the health of workers.	Throughout construction	All workers
P-8-29.	Fitness for work	<p>Health checks will be conducted for all project drivers/operators annually to assess their fitness to work and drive.</p> <p>The use of drugs, alcohol, tobacco and betel nut has the potential to affect fitness for work. Compliance of workers with the Alcohol and Drug policy attached to P-9 Worker's Code of Conduct will be checked and disciplinary action taken for non-compliance. Relevant health and safety actions are:</p> <ul style="list-style-type: none"> All workers are prohibited from consuming illicit drugs. Any workers found to possess illicit substances, and/or consuming illicit substances will subject to disciplinary action up to and including termination. All workers are prohibited from consuming alcohol during working hours and working while under the influence of alcohol. Alcohol is not permitted in the workers' accommodation camp. Any workers found unfit for work due to alcohol consumption will be disciplined in accordance with P4 Human Resources and Labour Management Plan. Workers may also be requested to take a breath alcohol test at the discretion of the HEC HSE Manager, HEC Camp Manager or Security Manager (subcontractor – Midlands Security Services). Only medically prescribed drugs are permitted to be consumed by workers. Workers using medically prescribed drugs may be required to produce a medical certificate stating that they are fit for work or specifying any restrictions. Smoking will only be permitted in designated smoking areas during work breaks. Chewing of betel nuts is strictly prohibited during working hours and anywhere on the Project site (Direct Impact Area and Infrastructure Area, including the Workers' Camp). Indiscriminate littering of cigarette butts and spitting of betel nut stain are prohibited. Drugs and alcohol must not be consumed in the workplace, while driving vehicles, while using access roads, while staying in the workers' accommodation camp, or in local communities. 	Throughout construction	All workers
P-8-30.	Emergency Response to incident	Refer to the Emergency Response Plans as detailed in P-14 Spill Prevention and Emergency Response Plan .	Prior to and throughout construction	HEC Construction Manager, HSE Manager
P-8-31.	Incident investigation and reporting	<p>A procedure for reporting, investigating and managing occupational accidents and diseases, and dangerous occurrences and incidents will be implemented. It will enable workers to report immediately to their immediate supervisor any situation they believe presents a hazard to life or health. The overall process involves the following steps:</p> <ol style="list-style-type: none"> Assessment of incident severity and initial classification (HSE Manager) Fill-out Notification report (HSE Manager) Designation of Incident Owner and approval (Construction Manager) Issue Notification report (HSE Manager) Investigation (Incident Owner) Action plan development (Investigation Team) Review and approval of action plan (Construction Manager) Action plan implementation (Incident Owner) Confirmation of implementation (HSE Manager) 	Prior to and throughout construction	HEC Construction Manager, HEC HSE Manager, all workers

		10. Close-out (Construction Manager) Near Misses will be investigated for the benefit of the project. All project employees (HEC, Subcontractors) can report a Near Miss incident by submitting the Near-miss report form to HSE office at site. Since a near miss is an incident, which resulted in no injury, illness, damage to environment or harm to the reputation is has an actual severity rating of 0 (zero). However, it can have a potential severity. A level of investigation effort will be based on potential severity of the near miss event. Refer to HEC-AH-H04-H14 Incident Investigation and Reporting for the detailed procedure.		
P-8-32.	Audit of P8 Workers Health and Safety Plan	The procedure outlined in HEC-AH-H04-H11 HSE Audit Procedure will be followed in order to conduct internal HSE audits. Compliance with this plan and effectiveness of the implementation of this plan will be verified. Audits will be conducted at least every six months.	Throughout construction	Audit Team formed for each audit
P-8-33.	Night Works for Access Road	Night work construction will be conducted to catch up or expedite the progress of Access Road construction. Relevant mitigation measures are as follows: <ul style="list-style-type: none"> Adequate lighting shall be provided depending on the type of activity and required lux levels (minimum 50lux). Tower lights and floodlights will be used based on site conditions. Supervisors, Site Engineers, and HSE Officers will always be present during night operations to supervise the works. In addition to regular PPE, all workers will be equipped with luminous reflective vests, reflective tapes on helmets, and emergency lights. Traffic Safety Baton lights will be used by signalmen to guide the movement of heavy equipment. A rotational day and night shift schedule will be operated, alternating day and night shifts for workers, with a rest day between the day shift week and the night shift week. Throughout the night shift, employees will be provided with additional short breaks to promote alertness and prevent fatigue. Night work operations will be weather-dependent, and all activities will be immediately halted in the event of heavy rain. All electrical equipment utilized for lighting and power supply at the construction site must comply with an IP65 rating. Refer to Plan for Construction Works at Night – Access Road for details.	Access Road Construction	HEC Project Manager HEC Construction Manager HEC HSE Manager

Monitoring Requirements

#	Title	Description	Target / Performance Indicator	Timing / Frequency	Responsibility
P-8-A.	Risk Assessments	<ul style="list-style-type: none"> Completion of a Risk Assessment prior to commencement of construction activities in accordance with HEC-AH-H04-H03, with a full list of all hazards and controls to be implemented on site 	Risk Assessments stored and visible to site staff	Prior to construction. Updates reported in quarterly E&S reports.	HEC H&S Manager
P-8-B.	Training Register	<ul style="list-style-type: none"> Records of all health and safety training for workers and visitors maintained. This shall include but not limited to worker and visitor site inductions, hazard-specific training (e.g. confined space, hot work etc.), annual H&S refresher training. 	Training Register with details of all training including date, nature of training, location, trainer, personnel in attendance, and signatures.	Reported in quarterly E&S reports	HEC H&S Manager
P-8-C.	Incident Register	<ul style="list-style-type: none"> Maintain a register of all incidents (including fatalities, lost time injuries, first aid, non-injury), near misses, and hazard observations. Actively promote and reward the reporting of leading indicators such as hazards and unsafe conditions. All incidents will be investigated as per HEC procedure HEC-AH-H04-H14 Incident Investigation and Reporting. 	Number of incidents, near misses and hazard observations. Frequency rate (injuries per million person hrs).	Reported in quarterly E&S reports	HEC H&S Manager
P-8-D.	Non-compliance Reports (FORs or NCRs)	<ul style="list-style-type: none"> Maintain a high standard of health and safety on site to avoid any H&S related NCRs. 	Zero NCRs issued for H&S breaches	Reported in quarterly E&S reports	HEC H&S Manager

Supporting Documents

Annex	Name	Description
P-8-I.	HEC Risk Assessment Samples	Sample of the risk assessment undertaken for road construction and earthworks in 2020. Also included are example Job Hazard Analyses.
P-8-II.	Risk Assessment Process	Diagram representing the process outlined in the Management Standard HEC-AH-H04-H03 Risk Assessment Procedure Process flow chart; Cold Work Permit template; excavation certificate template; Job Hazard Analysis template
P-8-III.	HEC Corporate Health, Safety and Environment Management System Documents	List of the relevant HEC Health and Safety Policies and Procedures available on the HEC Project Space
P-8-IV.	HSE Roles and Responsibilities	Details on HSE Roles and Responsibilities as outlined in Attachment 4 of HEC-AH-H04
P-8-V.	First Aid Facility	Description of first aid facility (including floor plan), roles and responsibilities, operation of the facility, equipment to be available at the facility, and the content of first aid boxes to be provided at work locations.
P-8-VI.	Hazard Assessment of Tunnelling	Identification of mitigation measures to minimise hazards of tunnelling.
P-8-VII.	Tunnel Work Safety Guideline	Prepared by HEC, 15.04.2020
P-8-VIII.	Plan for Construction Works at Night – Access Road	Prepared by HEC with inputs from Access Road Subcontractor 30.10.2023
P-8-IX.	Night Work Certificate	It is a compliance Statement to be filled by Subcontractor proposing Night construction Works, together with Night PTW.