

Ref. (ESIA or CCRA)	Project Phase	Topic Area	Impact	ESMP Measure	Measure Type
8.3.1.1	Construction	Soil, surface and groundwater quality	Erosion and sedimentation from road construction activities	<p>When construction activities are located within 500 m of surface water bodies, implement measures to reduce erosion and off-site sediment transport, such as:</p> <ul style="list-style-type: none"> • Prioritize scheduling of construction activities near surface water bodies to avoid heavy rainfall periods; • Contour and minimize the length and steepness of slopes; • Implement stabilization of slopes where required; • If steep channels and slopes are present, or cannot be avoided through design, line these with materials such as jute matting; • Spread mulch to stabilize exposed areas prior to re-vegetation; • Re-vegetate areas within 6 months of the completion of construction activities; • Using settlement ponds, silt fences and/or water treatment; • Modifying or suspending earth moving activities during extreme rainfall and high winds to the extent practical; • Regulate or divert any clean water runoff to prevent it mixing with water containing a high solids content to minimize the volume of water to be treated prior to release; and • Providing effective short-term measures for slope stabilization, sediment control and subsidence control until long-term measures for the operational phase can be implemented. 	World Bank EHS Guideline
8.3.1.1	Construction	Soil, surface and groundwater quality	Erosion and sedimentation from road construction activities	<p>Use stormwater management practices that slow peak runoff flow, reduce sediment load, and increase infiltration. Such measures may include: including vegetated swales (planted with salt-resistant vegetation), filter strips, terracing, check dams, detention ponds or basins, infiltration trenches, infiltration basins and constructed wetlands.</p>	World Bank EHS Guideline
8.3.1.1	Construction	Soil, surface and groundwater quality	Erosion and sedimentation from road construction activities	<p>Utilize sweeping practices rather than washing where practicable to reduce water runoff from dust suppression. Collect and returning swept material to aggregate base or dispose as solid waste.</p>	World Bank EHS Guideline
8.3.1.1, 8.3.1.2	Construction	Soil, surface and groundwater quality	Multiple	<p>Paving activities should be conducted during dry weather to prevent runoff of asphalt or cement materials.</p>	World Bank EHS Guideline
8.3.1.1, 8.3.1.2, 8.3.1.3	Construction	Soil, surface and groundwater quality	Multiple	<p>Where discharging water into the environment, water should meet the following levels:</p> <ul style="list-style-type: none"> • pH 6-9 • TSS 50mg/l • Oil and grease 10mg/l 	Bespoke from ESIA
8.3.1.1, 8.3.1.3	Construction	Soil, surface and groundwater quality	Multiple	<p>Develop and implement a Stockpile Management Plan to ensure responsible management of all bulk materials during construction.</p>	Bespoke from ESIA

8.3.1.2	Construction	Soil, surface and groundwater quality	Construction materials resulting in contamination of soil, surface, or groundwater	All storage and handling facilities and activities where hazardous materials are involved must be located at least 100 m away from surface water resources.	Bespoke from ESIA
8.3.1.2	Construction	Soil, surface and groundwater quality	Construction materials resulting in contamination of soil, surface, or groundwater	Avoid the generation of contaminated runoff from cleaning of asphalt equipment by implementing the following measures: only clean asphalt off equipment in dedicated washing facilities located away from surface water features or drainage structures, substituting diesel with vegetable oil as a release and cleaning agent, scraping before cleaning and containing cleaning products and contaminated asphalt residues. Dispose of contaminated residues as hazardous wastes.	World Bank EHS Guideline
8.3.1.2	Construction	Soil, surface and groundwater quality	Construction materials resulting in contamination of soil, surface, or groundwater	Avoid the generation of contaminated runoff from cleaning of concrete equipment by implementing the following measures: only clean concrete off equipment in dedicated washing facilities located away from surface water features or drainage structures, scraping before cleaning, and containing contaminated cement residues. Dispose of contaminated residues as hazardous wastes.	Bespoke from ESIA
8.3.1.2, 8.3.1.3	Construction	Soil, surface and groundwater quality	Multiple	Surface runoff from process areas or potential sources of contamination should be prevented, or where not practical, runoff from process and storage areas should be segregated from potentially less contaminated runoff.	World Bank EHS Guideline
8.3.1.2, 8.3.1.3	Construction	Soil, surface and groundwater quality	Multiple	In the event of an environmental incident, initiate a response in terms of the Emergency Response Plan	Bespoke from ESIA
8.3.1.3	Construction	Soil, surface and groundwater quality	Spills or leaks resulting in contamination of soil, groundwater, or surface water (unplanned)	<p>Prior to taking water from a borehole or well:</p> <ul style="list-style-type: none"> • Identify all other boreholes and wells within 100 m of the source. • Measure the quality and level of water in these wells. <p>Thereafter measure quality of water on a monthly basis, continuing until two months after abstraction ceases. If monitoring indicates a material reduction in water quality, then abstraction should cease. If the reduction is substantial enough to affect the usability of supply to the users, then Magil will need to provide and fund an alternate supply.</p>	Bespoke from ESIA
8.3.1.3	Construction	Soil, surface and groundwater quality	Spills or leaks resulting in contamination of soil, groundwater, or surface water (unplanned)	Stormwater should be separated from process and sanitary wastewater streams in order to reduce the volume of wastewater to be treated prior to discharge.	World Bank EHS Guideline
8.3.1.3	Construction	Soil, surface and groundwater quality	Spills or leaks resulting in contamination of soil, groundwater, or surface water (unplanned)	Oil water separators and grease traps should be installed and maintained as appropriate at refueling facilities, workshops, washbays, fuel storage and containment areas. Dispose of contaminated residues as hazardous wastes.	World Bank EHS Guideline

8.3.1.3	Construction	Soil, surface and groundwater quality	Spills or leaks resulting in contamination of soil, groundwater, or surface water (unplanned)	Develop and implement an Emergency Response Plan. This plan should be communicated to local stakeholders.	World Bank EHS Guideline
8.3.1.3	Construction	Soil, surface and groundwater quality	Spills or leaks resulting in contamination of soil, groundwater, or surface water (unplanned)	<p>Store and handle all hazardous materials to accepted industry standards as documented in a Hazardous Materials Management Plan.</p> <p>Hazardous materials, including chemicals and fuels, shall only be stored at a designated site. Such sites shall be located away from high risk areas including significant pedestrian or vehicle traffic, residential areas and water flow paths (> 50 m). Storage methods shall be in terms of the MSDS and manufacturers' instructions, typically in facilities with bunded, impervious floor and with provision to exclude rainfall and runoff. The bund for hydrocarbons should have 110% of the maximum storage capacity of the facility. Hazardous material storage sites shall have adequate signage in place identifying hazardous the materials and the nature of hazard. incompatible materials shall not be placed in common containment and different class of chemicals will be stored separately.</p> <p>Leaking containers will be removed immediately and be appropriately disposed.</p> <p>Maintain an inventory at the site office for all chemicals and their types and quantity stored on the project site.</p> <p>Material Safety Data Sheets for all chemicals must be kept at the site office and in every vehicle used to transport such chemicals.</p> <p>Personnel involved in handling hazardous materials, particularly those specifically assigned to storage areas, must be trained on how to respond in case of spill.</p> <p>Spill containment and clean-up kits, appropriate to the volume and type of materials stored, will be kept on-site.</p>	Bespoke from ESIA
8.3.1.3	Construction	Soil, surface and groundwater quality	Spills or leaks resulting in contamination of soil, groundwater, or surface water (unplanned)	<p>Refueling of vehicle fleet to primarily take place on-site at commercial fuel stations. Refueling of mechanized fleet to primarily take place in designated refueling area at site office. Refueling sites shall be located away from water flow paths (> 50 m) and any well. Fuel will only be stored in an industry approved and certified tank, with integrated bunding.</p> <p>The refueling area will be equipped with a bunded, impervious floor. The refueling area will not discharge to stormwater, sewer, sewage holding tanks, soak-away trenches or to any other external connection. Stormwater runoff, rainwater and other drainage sources from areas outside of the refueling area will be prevented from entering the area.</p> <p>Personnel involved in handling refueling, particularly those specifically assigned to refueling areas/equipment, must be trained on how to respond in case of spill.</p>	Bespoke from ESIA

8.3.1.3	Construction	Soil, surface and groundwater quality	Spills or leaks resulting in contamination of soil, groundwater, or surface water (unplanned)	Where refueling in the designated area is not possible due to the mobility of machinery, implement secondary containment such as catch pans or drip trays during refueling. Refueling vehicles / mobile delivery tanker will have the following: i. metal drip tray/s of sufficient capacity; ii. ground protective sheet/s; iii. a labelled, sealable container for storing spilled fuel; iv. any equipment required for transferring fuel captured in drip trays into the storage drum; v. a suitable spill clean-up kit vi. a shovel for use in spill clean-up	Bespoke from ESIA
8.3.1.3	Construction	Soil, surface and groundwater quality	Spills or leaks resulting in contamination of soil, groundwater, or surface water (unplanned)	If a project related leak or spillage has the potential to impact on groundwater usability/acceptability to a local user then Magil must investigate and provide an alternate, equivalent water supply for the duration of the period that an effect occurs.	Bespoke from ESIA
8.3.1.3	Construction	Soil, surface and groundwater quality	Spills or leaks resulting in contamination of soil, groundwater, or surface water (unplanned)	Daily visual inspections shall be undertaken of the site office, material stockyards, hazardous material storage sites, fleet parking areas and stockpile areas for signs of hazardous material spillages. Daily visual inspections of the mechanized fleet shall be undertaken to observe leaks of hydrocarbons.	Bespoke from ESIA
8.3.1.3	Construction	Soil, surface and groundwater quality	Spills or leaks resulting in contamination of soil, groundwater, or surface water (unplanned)	The project will carry out baseline water quality monitoring, including upstream and downstream locations, at all water flow pathways that interact the roadway. The monitoring will include an analysis of water quality and will be collected over a period of at least 3 months. Monitoring of downstream water quality in surface water within 500 m (Section 4.1, page 89-91, General EHS Guidelines) should be undertaken to detect changes in pH, Total Dissolved Solids (TDS) and Oil and Grease concentrations, when compared to baseline monitoring levels. Refer to the Water Quality Monitoring Program.	Bespoke from ESIA
8.3.1.3	Construction	Social	Temporary disruptions to municipal services	Planned collaboration with HYSACAM to anticipate and plan for disruptions to waste collection.	Bespoke from ESIA
8.3.1.3	Construction	Social	Temporary disruptions to municipal services	Raising awareness among the local population by posting signs on health issues associated with uncontrolled deposition of domestic waste in the construction area.	Bespoke from ESIA
8.3.1.3	Construction	Social	Temporary disruptions to municipal services	The Project will coordinate with local service providers (i.e. power, water, and telecommunications) to identify locations of all known infrastructure within the ROW. These will be mapped and either relocated prior to construction, or where these can remain in situ, they must be visibly marked (if buried). Where practical the developer should ensure that an installation of install new service networks before removing existing ones occurs, so as to limit the length of the inconvenience.	Bespoke from ESIA
8.3.1.3	Construction	Social	Temporary disruptions to municipal services	The Project must maintain a prohibition of unauthorized work (earthworks, site machinery) within a defined perimeter around cables or electrical poles.	Bespoke from ESIA
8.3.1.3	Construction	Social	Temporary disruptions to municipal services	The Project should work with local service providers to map any planned service interruptions and estimate the anticipated dates and times of interruption. The Project must inform the population by means of posters before each planned service disruption event through the local media and posters in the neighborhoods concerned.	Bespoke from ESIA

8.3.1.3, 8.4.1.2	Construction	Soil, surface and groundwater quality	Multiple	<p>Maintain the mechanized fleet to accepted industry and manufacturers' standards as documented in a Fleet Maintenance Plan.</p> <p>Maintenance or repair of mechanized fleet to primarily take place off-site at designated workshop facilities with bunded, impervious floor and oil traps.</p> <p>Where it is not possible or practical to conduct maintenance and repair offsite, such maintenance and repair on-site must be undertaken at a designated maintenance area, fitted with bunded, impervious floor and oil traps. The maintenance area floor will not discharge to stormwater, sewer, sewage holding tanks, soak-away trenches or to any other external connection. Stormwater runoff, rainwater and other drainage sources from areas outside of the maintenance area will be prevented from entering the area.</p> <p>Where it is not practicable to move damaged equipment to the designated maintenance area, secondary containment such as catch pans, drip trays, and ground protective sheets must be used during emergency works to prevent contamination of soil or water.</p>	Bespoke from ESIA
8.3.1.3, 8.6.1.1, 8.6.1.2, 8.6.1.4, 8.6.1.5, 8.6.1.9, 8.6.1.10, 8.7.1.1	Construction	Social, Waste	Multiple	<p>Develop and implement a Community Grievance Mechanism to provide a means for raising concerns. The process should be understandable and transparent, and provide timely feedback to those concerned, without retribution.</p> <p>Use of the mechanism shall be communicated to local communities through the Project's stakeholder engagement process.</p>	World Bank EHS Guideline
8.3.1.4	Construction	Soil, surface and groundwater quality	Mobilization of pollutants from contaminated land encountered during earthworks (unplanned)	<p>Preparing plans and procedures to respond to the discovery of contaminated media and to minimize or reduce the risk to health, safety, and the environment, consistent with the approach for Contaminated Land in Section 1.6 of the EHS Guidelines.</p> <p>This should include consideration of what level of Personal Protective Equipment is appropriate for employees working in the immediate vicinity of the contaminated land (e.g. face masks).</p>	World Bank EHS Guideline
8.3.1.4, 8.4.1.3	Construction	Soil, surface and groundwater quality, Waste	Multiple	<p>The Waste Management Plan should make provision for the handling and disposal of obsolete, abandoned, hazardous materials or oil consistent with the approach to hazardous waste management described in Section 1.6 of the EHS Guidelines. Successful implementation of any management strategy may require identification and cooperation with whomever is responsible and liable for the contamination.</p>	World Bank EHS Guideline
8.3.1.4, 8.4.1.3, 8.7.1.1	Construction	Soil, surface and groundwater quality, Waste	Multiple	<p>The Waste Management Plan should make provision for the handling and disposal of improperly disposed materials encountered during earthworks.</p>	Bespoke from ESIA

8.4.1.1	Construction	Air quality	Impacts associated with dust emissions	<p>Prepare and implement a Dust Management Plan (or equivalent). The dust management measures should include measures such as those set out below. This should include both management measures and monitoring measures to control and verify dust levels, as well as detail who will be responsible for implementing these controls. The suitability of these measures shall be verified on an on-going basis considering monitoring results and any dust-related community grievances received.</p> <p>Preparing and Maintaining the Site</p> <ul style="list-style-type: none"> • Put measures in place to avoid site runoff of water or mud. • Remove materials that have a potential to produce significant dust from the site as soon as possible (e.g. <48 hrs), unless being re-used on site. Where this is not possible, these materials will be covered. • Cover or fence any stockpiles of dusty materials. • Use enclosed chutes and conveyors and covered skips. • Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods. • Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction e.g. suitable local exhaust ventilation systems. • After all site works are completed, all remaining exposed land should be verified as stable with regards to dust. • Suitable water-carts in good working condition and of not less than 10,000 liters capacity per 7.5 hectares of disturbed site, or other suitable alternatives, shall be available to commence watering on the site within 2 hours of being required to do so per the Dust Management Plan. <p>Vehicle Trackout</p> <ul style="list-style-type: none"> • Vehicles will be kept clean and free of residual dirt and mud • Access gates to be located at least 10 m from receptors where possible. <p>Monitoring</p> <ul style="list-style-type: none"> • Monitoring may include monitoring of dust deposition, dust flux, and visual inspections. • Ensure that adequate quality assurance/quality controls (e.g. equipment calibration) are in place for all monitoring. 	World Bank EHS Guideline
8.4.1.1	Construction	Air quality	Impacts associated with dust emissions	<p>The project will carry out curb-side, baseline air quality monitoring at several locations along the route prior to construction. This will include an analysis of PM10 and PM2.5 and will be collected over a period of at least 3 months. This monitoring will include upwind and downwind locations and associated meteorological monitoring (i.e. wind direction and strength).</p> <p>If ongoing dust complaints are received as part of the project's Community Grievance Mechanism, this monitoring will be extended to occur throughout the duration of construction and the results of which will be used to inform the effectiveness of the dust suppression measures identified in the Dust Management Plan. Refer to the Dust Monitoring Program</p>	Bespoke from ESIA
8.4.1.1	Construction	Air quality	Impacts associated with dust emissions	<p>The project will implement a Community Grievance Mechanism to manage any complaints from surrounding community members, including those related to dust. In responding to any such complaints, the project will consider dust abatement measures (e.g. dust suppression, suspension of activities during dry and windy periods, screens) to help manage these types of impacts.</p>	World Bank EHS Guideline
8.4.1.2	Construction	Air quality	Human health impacts associated with combustion emissions	<p>Drivers should be instructed on the benefits of driving practices that reduce fuel consumption, including measured acceleration and driving within safe speed limits.</p>	World Bank EHS Guideline
8.4.1.2	Construction	Air quality	Human health impacts associated with combustion emissions	<p>Open burning of solid materials will be prohibited on-site.</p>	World Bank EHS Guideline

8.4.1.2	Construction	Air quality	Human health impacts associated with combustion emissions	Open burning of improperly disposed materials will be prohibited on-site.	World Bank EHS Guideline
8.4.1.3	Construction	Air quality	Mobilization of VOCs from contaminated land encountered during earthworks (unplanned)	Prepare plans/procedures to respond to the discovery of contaminated media to minimize or reduce the risk to health, safety, and the environment consistent with the approach for Contaminated Land in Section 1.6 of the EHS Guidelines. This should include consideration of what level of Personal Protective Equipment is appropriate for employees working in the immediate vicinity of the contaminated land (e.g. face masks).	World Bank EHS Guideline
8.5.1.1	Construction	Noise and vibrations	Human health impacts associated with increased noise levels from construction activities	Schedule any highly noisy construction activities during periods of the day that will result in least disturbance to the surrounding community	World Bank EHS Guideline
8.5.1.1	Construction	Noise and vibrations	Human health impacts associated with increased noise levels from construction activities	Prohibit any routine night-time operation of noise generating equipment.	World Bank EHS Guideline
8.5.1.1	Construction	Noise and vibrations	Human health impacts associated with increased noise levels from construction activities	Local residents must be informed (i.e. through notice boards and/or direct community consultation) of any periods of night work that may be necessary.	Bespoke from ESIA
8.5.1.1	Construction	Noise and vibrations	Human health impacts associated with increased noise levels from construction activities	The description and timing of any particularly noisy activities (e.g. installation of guardrails, sandblasting of existing road signs, demolition of structures) must be communicated to the surrounding communities beforehand (i.e. through notice boards and/or direct community consultation).	World Bank EHS Guideline
8.5.1.1	Construction	Noise and vibrations	Human health impacts associated with increased noise levels from construction activities	Prior to construction, the Project will conduct a noise baseline survey in accordance with <i>ISO 1996-1: 2016: Acoustics – Description, Measurement and Assessment of Environmental Noise - Part 1 Basic Quantities and Assessment Procedures</i> . This survey should include representative noise sensitive receptors adjacent to the ROW along the extent of Phase 2. Particular consideration should be made of receptors adjacent to the site office and material storage areas and the Yassa and Japoma Roundabouts.	Bespoke from ESIA
8.5.1.1	Construction	Noise and vibrations	Human health impacts associated with increased noise levels from construction activities	The project will implement a Community Grievance Mechanism to manage any complaints from surrounding community members, including those related to noise. In responding to any such complaints, the project will consider noise abatement measures (e.g. provision of earplugs, temporary noise barriers, rescheduling of noisy activities) to help manage these types of impacts. Additionally, if significant noise complaints are received, the project may need to implement ongoing noise monitoring at affected receptors, following the methodology set out in in accordance with <i>ISO 1996-1: 2016: Acoustics – Description, Measurement and Assessment of Environmental Noise - Part 1 Basic Quantities and Assessment Procedures</i> .	World Bank EHS Guideline

8.6.1.1	Construction	Social	Loss of livelihood associated with clearance of the ROW	The project will offer street traders equivalent replacement sites (in all seven sites are planned) that will be developed at points on the road for the purposes of their trading. The replacement location needs to be monitored against baseline expectations to ensure that they perform the function for which they are intended. Key aspects are that the sites are used by the traders displaced by the project and are functionally able to act as trading venues that attract an income that replicates that lost. A survey of traders that make use of the site must be initiated once they become operational.	Bespoke from ESIA
8.6.1.1	Construction	Social	Loss of livelihood associated with clearance of the ROW	Where the construction may affect access to adjacent property (e.g. to fuel stations) ensure that planning includes provision for temporary access and the reinstatement of the permanent access. Notify and consult with the property owner(s) and occupier(s) prior to undertaking the construction.	Bespoke from ESIA
8.6.1.10	Construction	Social	Risk of project vehicle traffic accident (unplanned)	Train industrial vehicle operators in the safe operation of specialized vehicles, including safe loading/unloading practices and load limits. Ensure drivers undergo medical surveillance Ensure moving equipment with restricted rear visibility is outfitted with audible back-up alarms	World Bank EHS Guideline
8.6.1.11	Construction	Social	Destruction of fixed property in the ROW (planned and unplanned)	Compare current fixed structures with what was compensated as per the PIR. Interview those with fixed structures and those who have been previously compensated are excluded from further consideration. Those who were not compensated and can prove that structures existed prior to the PIR are liable for compensation.	Bespoke from ESIA
8.6.1.11	Construction	Social	Destruction of fixed property in the ROW (planned and unplanned)	Allow those not compensated to lodge a grievance and manage as per the Community grievance mechanism.	World Bank EHS Guideline
8.6.1.11	Construction	Social	Destruction of fixed property in the ROW (planned and unplanned)	Magil will coordinate with all owners of structures within the ROW that must be demolished well in advance of any activities to ensure that they are aware of the plans and have sufficient time to take necessary steps to vacate the structures. Additionally, Magil will notify immediately surrounding properties when any demolition activities are planned.	Bespoke from ESIA
8.6.1.11	Construction	Social	Destruction of fixed property in the ROW (planned and unplanned)	Magil will verify that all structures are empty prior to demolition.	Bespoke from ESIA
8.6.1.11	Construction	Social	Destruction of fixed property in the ROW (planned and unplanned)	Any accidental damage to be repaired by Magil	Bespoke from ESIA
8.6.1.12	Construction	Social	Destruction of fixed property in the ROW (planned and unplanned)	The Project will implement a Chance Finds Procedure in-line with national requirements and Performance Standard 8.	World Bank EHS Guideline
8.6.1.2	Construction	Social	Temporary disruptions to travel times and economic efficiency and increased travel safety risk	Work should be planned and schedule so as to enable ongoing public use of the NR3 when and wherever it remains safe, practicable and efficient to do so.	Bespoke from ESIA

8.6.1.2	Construction	Social	Temporary disruptions to travel times and economic efficiency and increased travel safety risk	Road closures (and related route diversions) should be limited to the shortest period necessary to implement the required works. Roads closures should be reversed prior to nightfall whenever this is reasonably possible.	Bespoke from ESIA
8.6.1.2	Construction	Social	Temporary disruptions to travel times and economic efficiency and increased travel safety risk	Road closures (and related route diversions) may not be left in place over construction holidays or any other period of construction inactivity unless it is essential to do so.	Bespoke from ESIA
8.6.1.2	Construction	Social	Temporary disruptions to travel times and economic efficiency and increased travel safety risk	Traffic diversions should be planned and implemented to ensure that public traffic can reasonably access all areas affected by construction and in a manner that minimizes traffic congestion.	Bespoke from ESIA
8.6.1.2	Construction	Social	Temporary disruptions to travel times and economic efficiency and increased travel safety risk	Inspect the condition of road surfaces, intersection function and signage on traffic diversions routes prior to their use and ensure that conditions are suitable for the volume of traffic anticipated.	Bespoke from ESIA
8.6.1.2	Construction	Social	Temporary disruptions to travel times and economic efficiency and increased travel safety risk	Maintain the road surfaces and signage on traffic diversions routes for the duration of their usage.	Bespoke from ESIA
8.6.1.2	Construction	Social	Temporary disruptions to travel times and economic efficiency and increased travel safety risk	On termination of the use of a diversion, remove all unnecessary signage and ensure that the condition of road surface has not been unduly affected by the diversion traffic.	Bespoke from ESIA
8.6.1.2	Construction	Social	Temporary disruptions to travel times and economic efficiency and increased travel safety risk	Flag bearers and traffic controls must be deployed at critical points / intersections along road diversions to maintain traffic safety and facilitate traffic flow.	Bespoke from ESIA
8.6.1.2	Construction	Social	Temporary disruptions to travel times and economic efficiency and increased travel safety risk	Provide illumination of key junctions at night when construction works are present.	Bespoke from ESIA

8.6.1.2	Construction	Social	Temporary disruptions to travel times and economic efficiency and increased travel safety risk	Signage warnings of deviations must be put in place to inform the population, so that they may pursue alternative routes. This must include advance warning of any planned deviations, as well as effective signage along deviation routes to inform the users.	Bespoke from ESIA
8.6.1.2	Construction	Social	Temporary disruptions to travel times and economic efficiency and increased travel safety risk	Provision must be made for ongoing conveyance of heavy motor vehicles along the NR3 with the least disruption. Heavy motor vehicles should not be permitted to access road diversions unless the road is of a class suitable for such use.	Bespoke from ESIA
8.6.1.2, 8.5.1.1, 8.6.1.10	Construction	Social, Noise and vibrations	Multiple	Develop and implement a Traffic Management Plan (or equivalent) that evaluates potential routes for the main project related vehicle movements for construction machinery, goods (e.g. deliveries of aggregates, bitumen and concrete), worker transport, and waste removal vehicles. This plan should prioritize routes that, where possible, avoid noise sensitive areas included but not limited to schools and residential areas. If avoidance is not possible, the plan will consider alternative minimization measures such as timing of vehicle movements, speed restrictions, staff training etc.	World Bank EHS Guideline
8.6.1.4	Construction	Social	Unauthorized community access	Measures will be put in place to restrict access to the Project site. These measures will include fencing and warning signs.	World Bank EHS Guideline
8.6.1.4	Construction	Social	Unauthorized community access	As part of local community stakeholder engagement activities, the health and safety risks of unauthorized access will be communicated.	World Bank EHS Guideline
8.6.1.5	Construction	Social	Work force presence and project related health impacts on immediate community	In order to mitigate a potential increase in STI/HIV/AIDS increase in the areas, the following measures will be undertaken: <ul style="list-style-type: none"> • Sensitization of the local population and site personnel on the prevention of STI/HIV/AIDS. (Note that international and national structures such as UNAIDS, African Synergies, the Provincial Technical Group (PWG), the National AIDS Control Committee (NACC) and the Local AIDS Control Committees (LACC) are already operational on this subject.) • Distribution of condoms to employees. • Encouraging voluntary testing. 	Bespoke from ESIA
8.6.1.5	Construction	Social	Work force presence and project related health impacts on immediate community	In order to mitigate the resurgence of the COVID pandemic, the following measures will be undertaken: <ul style="list-style-type: none"> • Development of detailed COVID-19 management plan for all contractors and sub-contractors. • Equipping workers with FFP2 masks or washable masks; • Closely follow recognized health organization recommendation (such as the WHO) for preventative steps. • Enforce the recommended social distancing parameters. • Raising employee awareness of hygiene with the provision of soap for washing hands. 	Bespoke from ESIA
8.6.1.5	Construction	Social	Work force presence and project related health impacts on immediate community	In order to mitigate the resurgence of malaria, the following measures will be undertaken: <ul style="list-style-type: none"> • Rehabilitate temporary construction sites at the end of their use, and drain them, taking into account the gradient so as to avoid the formation of mosquito-breeding areas. • Avoid depositing excavated material near natural water flow routes as provided for in the MINTP environmental guidelines. • Maintain adequate water pumps on site for rapid interventions in the event of flooding due to the work. 	Bespoke from ESIA

8.6.1.5	Construction	Social	Work force presence and project related health impacts on immediate community	<p>In order to mitigate general health and safety risks, the following measures will be undertaken:</p> <ul style="list-style-type: none"> • Train and raise the awareness of site personnel on safety at work (in particular note the number of accident-free working days) and potential threats to community members. • Make community health and safety a key component of "Tool Box Talks". • Provide staff with appropriate personal protective equipment relevant to their work. • Provide for, penalties, for employees refusing to wear equipment for their protection or disregarding community safety to comply with safety requirements. • Put in place notice boards that are publicly visible that describe hazards and preventative measures. • Ensure that the construction site is bounded and cordoned and that these cordons are maintained on a very regular basis. 	Bespoke from ESIA
8.6.1.6	Construction	Social	Employment	Set up a local labor desk and the staff recruitment policy is transparent.	Bespoke from ESIA
8.6.1.6	Construction	Social	Employment	Give employment priority to nationals, specifically to the inhabitants of Douala and the inhabitants located along the project's axes during recruitment.	Bespoke from ESIA
8.6.1.6	Construction	Social	Employment	Issue end-of-contract work certificates or attestations to employees to enable them to be more competitive in the event that they are offered another opportunity for similar jobs.	Bespoke from ESIA
8.6.1.6	Construction	Social	Employment	As far as possible, subcontract certain work to local SMEs using the Employment intensive investments program (EIIP).	Bespoke from ESIA
8.6.1.7	Construction	Social	Infringement on workers' human rights (unplanned)	Ensure application of Labor Law specifically Parts IV (Wages), V (Conditions of employment) and VI (Workplace Safety and Hygiene)	
8.6.1.7	Construction	Social	Infringement on workers' human rights (unplanned)	<p>Develop an Occupational Health Management Plan (or equivalent) for construction. This should identify measures related to risks from:</p> <ul style="list-style-type: none"> • Over exertion • Slips and Falls • Working at height • Object strikes <p>All employees should be trained on the Occupational Health Management Plan, with particular focus on those risks specific to their roles.</p>	World Bank EHS Guideline
8.6.1.7	Construction	Social	Infringement on workers' human rights (unplanned)	Develop a Human Resources Management Plan (or equivalent). This Plan will specify clear contracting procedures and worker rights in accordance with national law and IFC PS2. The Human Resources Management Plan will incorporate human rights and non-discrimination principles. Priority will be given to local workers provided they are suitably qualified to undertake the work.	World Bank EHS Guideline
8.6.1.7	Construction	Social	Infringement on workers' human rights (unplanned)	Implement training for all workers, including contract workers, on the principles of the Human Resources Management Plan including worker rights, non-discrimination and human rights.	World Bank EHS Guideline
8.6.1.7	Construction	Social	Infringement on workers' human rights (unplanned)	All contracts for workers, including contract workers, will be in accordance with applicable national labor law and IFC PS2 requirements. Worker contracts must clearly detail workers' rights.	World Bank EHS Guideline
8.6.1.7	Construction	Social	Infringement on workers' human rights (unplanned)	<p>Develop and implement a grievance mechanism for all workers (including direct employees and contractors) to provide a means for raising workplace concerns. The process should be understandable and transparent, and provide timely feedback to those concerned, without retribution.</p> <p>The mechanism shall be communicated to all workers, including subcontractors via accessible means (e.g. notice boards) and in employment contracts.</p>	World Bank EHS Guideline

8.6.1.7	Construction	Social	Infringement on workers' human rights (unplanned)	Ensure the project, including subcontractors will utilize no child or forced labor (as defined by Performance Standard 2)..	World Bank EHS Guideline
8.6.1.8	Construction	Social	Local content and procurement	Encouraging contractors to prioritize local supply points will enhance the benefit.	Bespoke from ESIA
8.6.1.8	Construction	Social	Local content and procurement	Making meal breaks available and allowing for trade from local vendors to directly supply the work force will be of particular benefit.	Bespoke from ESIA
8.6.1.9	Construction	Social	Reduced availability of water to community users	Before finalizing water use plans, the Project will conduct a study to evaluate 1) the ability of the potential boreholes identified to accommodate the water demand and 2) how this water usage could affect other groundwater users in the area, especially during the dry season. This study will also identify any associated monitoring required during construction	Bespoke from ESIA
8.6.1.9	Construction	Social	Reduced availability of water to community users	<p>Prior to taking water from a borehole or well:</p> <ul style="list-style-type: none"> • Identify all other boreholes and wells within 100 m of the source. • Measure the level and quality of water in these wells. <p>Thereafter measure the level and quality of water on a monthly basis, continuing until two months after abstraction ceases.</p> <p>If monitoring indicates a material reduction in water level or water quality then abstraction should cease.</p> <p>If the reduction is substantial enough to affect the availability or usability of supply to the users, then Magil will need to provide and fund an alternate, equivalent supply for the duration of the period that an effect occurs.</p>	Bespoke from ESIA
8.6.1.9	Construction	Social	Reduced availability of water to community users	Obtain permits necessary to abstract groundwater.	Bespoke from ESIA
8.6.1.9	Construction	Social	Reduced availability of water to community users	Record volume of water abstracted on a monthly basis.	Bespoke from ESIA
8.7.1.1	Construction	Waste	Project generated waste affecting local environment or community receptors	<p>Develop and implement a Waste Management Plan to ensure responsible management of all waste arising from construction. The waste management plan should cover the following aspects:</p> <ul style="list-style-type: none"> • Purpose/Objectives – of the Plan • Context – legal requirements and general principles • Roles and Responsibilities – of different staff and contractors • Waste Arising (Types and quantities of key waste streams and Waste classification – local/international) • Waste Minimization • Waste Storage and On-site Handling (including segregation of different waste types) • Reuse and Recycling • Waste Collection and Transfer • Treatment and Disposal • Waste Tracking, Data Management and Reporting • Communications/Community Liaison 	World Bank EHS Guideline

8.7.1.1	Construction	Waste	Project generated waste affecting local environment or community receptors	<p>The Waste Management Plan shall be disseminated to all staff responsible for managing the construction sites and accommodation camp and to all sub-contractors working on the Project. Personnel at an appropriate level of seniority will be nominated to be responsible for good site practices and arrangements for collection and effective disposal of all wastes generated by the Project. All personnel will be trained in proper waste management procedures as appropriate to their level of responsibility and duties. This will include training in concepts of site cleanliness and on appropriate waste management procedures, including waste reduction, reuse and recycling.</p>	World Bank EHS Guideline
8.7.1.1	Construction	Waste	Project generated waste affecting local environment or community receptors	<p>Wastes which cannot be recycled, will be transported to the closest suitable treatment or disposal site. This will depend on the individual type of waste. The WMP will detail the preferred treatment options for all of the expected types of waste and will also include a procedure for determining how any other wastes, not expected at this stage but which arise during the Project, will be treated.</p> <p>Waste disposal will only be undertaken at permitted facilities specifically designed to receive, handle and dispose of the waste.</p> <p>Potential waste management facilities will be assessed by the Project prior to being used for managing the Project's waste to confirm that they do have the necessary licenses for the particular waste(s) and to check that their environmental, health and safety performance is in line with good international industry practice (GIIP) as indicated in IFC guidelines. This assessment will extend to third-party waste management contractors use of waste facilities.</p> <p>The WMP will define procedures for onsite waste storage, biological, chemical, or physical treatment (including treatment of hazardous waste materials to render them non-hazardous prior to disposal) and final disposal.</p>	World Bank EHS Guideline
8.7.1.1	Construction	Waste	Project generated waste affecting local environment or community receptors	<p>Maximize the re-use of soils and aggregates arising from cuttings as far as practicable in terms of material properties.</p> <p>Spoil inert soils and aggregates to identified properties up to the maximum volume receivable at the designated localities. The balance of soils and aggregates to be disposed to appropriate landfill sites in terms of the waste management plan.</p>	Bespoke from ESIA
8.7.1.1	Construction	Waste	Project generated waste affecting local environment or community receptors	<p>Provide sanitary facilities with capacity to meet sanitation requirements of personnel at all construction locations. All personnel must have access to toilet facilities within 500 m of their place of work. Personnel must use the provided facilities, which shall be serviced daily to ensure hygienic conditions.</p> <p>No facilities containing sewage may be located within 100 m of a surface water resource.</p> <p>Raw sewage must be contained and subject to treatment and disposal by a registered service provider at an appropriately permitted facility. Records of safe treatment and disposal of sewage must be maintained.</p>	Bespoke from ESIA
CC01, CC02, CC08	Construction	Climate Change	Multiple	<ul style="list-style-type: none"> • Sealcoating during the construction phase to protect asphalt from heat damage and rain. • Adopting a high softening point of bonding agents for asphalt mixes. • Reviewing bitumen mix methodology with expected lowering of pH levels as a result of water damage • Utilization of durable construction materials that are water resistant and capable of withstanding high temperatures and levels of humidity (i.e. consistent with the future climate projections listed in Tables 6-8 of CCRA). • Sealcoating during the construction phase to protect asphalt from heat damage and rain. 	Bespoke from CCRA
CC03	Construction	Climate Change	Unsafe Travel Conditions and Potential Injuries	<ul style="list-style-type: none"> • Sealcoating during the construction phase to protect asphalt from heat damage and rain. 	Bespoke from CCRA

CC03, CC08	Construction	Climate Change	Multiple	<p>All areas which could be prone to landslide/mudslides should have some or all of the following preventative measures applied (to the extent that they are possible to implement):</p> <ol style="list-style-type: none"> 1. Maintain as much vegetation as possible on the slope to retain the soil. 2. Create surface and underwater drainage systems to divert water. 3. Create retaining walls using strong materials, e.g. masonry, brick, stone or steel. <p>Underpasses should have drainage systems in place to remove excess water after heavy downpours to avoid flooding.</p> <p>Stone pitching can be installed around culvert headwalls to protect batters from erosion as a result of concentrated runoff. Examples of areas that will benefit from stone pitching are culverts, driveway access points (rural areas) and in other areas where changes or obstructions in the direction of flow occur. Magil will determine where it is appropriate to install stone pitching based on 1) the soil quality and 2) the proximity of sensitive receptors.</p>	Bespoke from CCRA
CC05	Construction	Climate Change	Reduction in productivity and risk of injury of project workforce	<p>Development of an Emergency Response Plan that considers flood, landslide, and mudslide risks.</p> <p>Development of a Workforce Health and Safety Plan that includes the following measures:</p> <ol style="list-style-type: none"> 1. Plan workforce schedules in advance based on weather forecasts, to limit or eliminate working during extreme heat days and when there may be high risk of climate hazards such as flooding, landslides, and mudslides. 2. Modify work schedules and arrange frequent rest periods with water breaks in shaded or air-conditioned areas. 3. Designate a responsible person to monitor conditions and protect workers who are at risk of heat stress. 4. Provide appropriate protective personal equipment (PPE) including water- and air-cooled vests, UV-protective and anti-fogging goggles, waterproof boots and gloves, and protective headwear. 5. Provide training about potential hazards and effects, and how to manage and/or prevent them. 	Bespoke from CCRA
CC06	Construction	Climate Change	Delay in maintenance activities and increase in costs	<p>Development of an Emergency Response Plan that considers flood, landslide, and mudslide risks.</p> <p>Development of a Workforce Health and Safety Plan that includes the following measures:</p> <ol style="list-style-type: none"> 1. Plan workforce schedules in advance based on weather forecasts, to limit or eliminate working during extreme heat days and when there may be high risk of climate hazards such as flooding, landslides, and mudslides. 2. Modify work schedules and arrange frequent rest periods with water breaks in shaded or air-conditioned areas. 3. Designate a responsible person to monitor conditions and protect workers who are at risk of heat stress. 4. Provide appropriate protective personal equipment (PPE) including water- and air-cooled vests, UV-protective and anti-fogging goggles, waterproof boots and gloves, and protective headwear. 5. Provide training about potential hazards and effects, and how to manage and/or prevent them. 	Bespoke from CCRA
CC07	Construction	Climate Change	Damage to project traffic, machinery, and material	<p>Seeding the roadway greenspaces to leave bare soil for as short a time as possible.</p> <p><u>Storing materials carefully to ensure they are not damaged by excessive heat or water.</u></p>	Bespoke from CCRA
CC08	Operation	Climate Change	Increased journey times	<p>Utilization of durable materials that are water resistant and capable of withstanding high temperatures and levels of humidity (i.e. consistent with the future climate projections listed in Tables 6-8 of the Climate Change Risk Assessment).</p>	Bespoke from CCRA

Responsible Party	Performance Indicator	Frequency
Magil as EPC, Sub Contractor as applicable	Maintain records of measures used for all work within 500 m of the water courses and water flow paths.	One time verification for each area within 500 m of surface water bodies.
Subcontractor	Maintain records of stormwater management measures designed. Conduct monthly visual inspection of key stormwater management features (e.g. culverts and hydraulic structures to verify no obstructions and in good working order. Maintain records of inspection logs.	One time verification followed by monthly inspections and associated records.
Subcontractor	Maintain records of implementation. Maintain records of waste disposal.	Ongoing when dust generating activities are occurring
Subcontractor	Maintain date log of when paving activities occur. This should show no paving activities during the peak rainy period of July and August. Maintain log whenever paving activities are occurring documenting if conditions are dry or wet.	Ongoing when paving activities are occurring
Subcontractor	Sampling and analysis of all surface water discharge.	Weekly
Magil as EPC, Sub Contractor as applicable	Documented Stockpile Management Plan. Maintain records of implementation of measures specified in the plan.	Ongoing

Magil as EPC, Sub Contractor as applicable	Document the location of hazardous materials storage and handling facilities on plans showing distance to surface water resources. Conduct monthly site inspection to verify that all hazardous materials are being stored in designated areas. Maintain records of inspections.	One time verification followed by monthly inspections and associated records.
Subcontractor	Maintain records of measures used. Maintain records of waste disposal.	One time verification of measures to be used. Ongoing waste disposal records.
Subcontractor	Maintain records of measures used. Maintain records of waste disposal.	One time verification of measures to be used. Ongoing waste disposal records.
Subcontractor	Maintain records of stormwater management measures used.	One time verification
Magil as EPC, Sub Contractor as applicable	Maintain all records associated with the Emergency Response Plan.	Ongoing
Magil	Documented hydrocensus. Monthly record of water levels and quality.	One time verification. Monthly monitoring of water quality and well levels.
Magil as EPC, Sub Contractor as applicable	Maintain records of measures used.	One time verification
Magil as EPC, Sub Contractor as applicable	Maintain records of oil water separator installation. Maintain records of oil water separator maintenance and any associated waste disposal.	One time verification Ongoing

Magil as EPC, Sub Contractor as applicable	Documented Emergency Response Plan. Maintain records of communication of plan to stakeholders.	Ongoing
Magil as EPC, Sub Contractor as applicable	Documented Hazardous Materials Management Plan. Maintain records of implementation of measures specified in the plan.	Ongoing
Magil as EPC, Sub Contractor as applicable	Documented Hazardous Materials Management Plan and Emergency Response Plan. Maintain records of implementation of measures specified in the plan.	Ongoing

Magil as EPC, Sub Contractor as applicable	Maintain site diary to document refueling outside of designated areas. Maintain records of measures implemented to prevent spillage and contamination.	Ongoing
Magil as EPC, Sub Contractor as applicable	To be included and managed as a scenario in the Emergency Response Plan.	Ongoing
Subcontractor	Maintain daily site diary	Daily
Magil as EPC, Sub Contractor as applicable	Maintain records of water quality monitoring locations, dates sampled, methodology used, and analytical results.	One time, for a minimum of 3 months
Magil as EPC	Minimized disruption of services can be shown with service records.	Ongoing
Magil as EPC	Documentation of appropriate signage in place.	Ongoing
Magil as EPC, Sub Contractor as applicable	Minimized disruption of services can be shown with service records.	Ongoing
Magil as EPC, Sub Contractor as applicable	Daily site inspections and plans/procedures documenting prohibition.	Daily
Magil as EPC, Sub Contractor as applicable	Minimized disruption of services can be shown with service records.	Ongoing

Subcontractor	Documented Fleet Maintenance Plan. Maintain records of implementation of measures specified in the plan.	Ongoing
Magil as EPC	A functioning Community Grievance Mechanism that is accessible and used without fear or favor. Grievance log available for scrutiny.	Ongoing
Magil as EPC, Sub Contractor as applicable	Documented Waste Management Plan. Maintain records of implementation of measures specified in the plan.	Ongoing
Magil as EPC, Sub Contractor as applicable	Documented Waste Management Plan. Maintain records of implementation of measures specified in the plan.	Ongoing
Magil as EPC, Sub Contractor as applicable	Documented Waste Management Plan. Maintain records of implementation of measures specified in the plan.	Ongoing

Magil as EPC, Sub Contractor as applicable	Documented Dust Management Plan. Maintain records of implementation of measures specified in the plan.	Ongoing
Magil as EPC, Sub Contractor as applicable	Maintain records of air quality monitoring locations, dates sampled, methodology used, and analytical results.	One time, for a minimum of 3 months (to be extended if dust grievances received)
Magil as EPC	Documented Community Grievance Mechanism. Maintain records of complaints received and responses given/actions taken. Grievance log available for scrutiny.	Ongoing
Magil as EPC, Sub Contractor as applicable	Maintain records of driver instruction .	Ongoing
Subcontractor	Maintain daily site diary. Record waste burning as an incident.	Daily

Subcontractor	Maintain daily site diary. Record waste burning as an incident.	Daily
Magil as EPC, Sub Contractor as applicable	Documented Waste Management Plan. Maintain records of implementation of measures specified in the plan.	Ongoing
Subcontractor	Maintain daily site diary with times of noisy activities recorded.	Daily
Subcontractor	Maintain daily site diary with times of noisy activities recorded.	Daily
Subcontractor	Maintain records of implementation	Ongoing
Subcontractor	Maintain records of implementation	Ongoing
Magil as EPC	Maintain records of noise monitoring locations, dates and times sampled, methodology used, notes on any noise activities experienced during survey, and recorded noise levels.	One time
Magil as EPC	Documented Community Grievance Mechanism. Maintain records of implementation of measures specified in the mechanism. Grievance log available for scrutiny. Records of noise monitoring.	Ongoing

Magil as EPC	Maintain records of implementation of replacement sites. Monitoring records to demonstrate restoration of livelihoods and income related to trade and measured against baseline.	Ongoing
Magil as EPC	Maintain records of implementation of temporary access. No net loss of access to impacted entity and records to show remedial action where loss of access was triggered.	Ongoing
Magil as EPC	Evidence of appropriate training recorded against individual operators. Records showing appropriate medical surveillance of operators. All vehicles with restricted rear vicinity fitted with alarm system. Incident register developed and maintained and available for scrutiny.	Ongoing
Magil as EPC	Record of comparative analysis in place and outcomes summarized and available for scrutiny	Ongoing
Magil as EPC	Documentation of communication and management of community grievance mechanism.	Ongoing
Magil as EPC	Records of co-ordination and engagement with impacted structure owners to be kept and available. Records of outcome of demolition and remedial steps taken to be maintained and available for scrutiny.	Ongoing
Magil as EPC	Records of engagement and proof of no net harm.	Ongoing
Magil as EPC	Log of damages incurred and steps taken to repair or compensate for damages to be kept and open for scrutiny.	Ongoing
Magil as EPC	Chance Finds Procedure developed and available. Proof that all contractors and sub contractors have been trained in fundamentals of the Chance Finds Procedure as per induction requirements.	Ongoing
Magil as EPC, Sub Contractor as applicable	Maintain daily site diary. Minimal disruption of normative traffic patterns and records of avoidance of peak flow disruption.	Daily

Magil as EPC, Sub Contractor as applicable	Maintain daily site diary. Minimal disruption of normative traffic patterns and records of avoidance of peak flow disruption.	Daily
Magil as EPC, Sub Contractor as applicable	Maintain daily site diary. Record that roads open over periods when construction is not taking place.	Ongoing
Magil as EPC, Sub Contractor as applicable	Traffic diversion design demonstrating minimal disruption of normative traffic patterns.	Ongoing
Magil as EPC, Sub Contractor as applicable	Conduct inspection of traffic deviation 1 week prior to planned use. Maintain logs of inspection.	Ongoing
Magil as EPC, Sub Contractor as applicable	Conduct daily inspection of the condition of the road and signage for any traffic diversions. Maintain records of inspection verifying fit-for-purpose.	Daily when traffic diversion are being used
Magil as EPC, Sub Contractor as applicable	Conduct final inspection of the condition of the road. Maintain records of inspection, including documentation of signage removal.	One time verification
Magil as EPC, Sub Contractor as applicable	Location and nature of traffic controls should be noted in the daily inspection log for the traffic diversion.	Daily when traffic diversion are being used
Magil as EPC, Sub Contractor as applicable	Location and nature of illumination should be noted in the daily inspection log for the traffic diversion.	Daily when traffic diversion are being used

Magil as EPC, Sub Contractor as applicable	Conduct inspection of traffic deviation 1 week prior to planned use. Log should note all advanced signage used. Maintain logs of inspection.	Ongoing
Magil as EPC, Sub Contractor as applicable	Conduct inspection of traffic deviation 1 week prior to planned use. Maintain logs of inspection. Log should verify if route is suitable for heavy vehicles.	Ongoing
Magil as EPC	Documented Traffic Management Plan. Maintain records of implementation of measures specified in the plan.	Ongoing
Magil as EPC, Sub Contractor as applicable	Fencing and warning signs in place. No reported injuries to workers or residents. Daily site inspections	Daily
Magil as EPC	Stakeholder engagement materials and minutes	Ongoing
Magil as EPC, Sub Contractor as applicable	Records of sensitization program in place. No reported net increase in STI/HIV/AIDS reported by community health authorities. Participation in voluntary testing program.	Ongoing
Magil as EPC	Records of COVID-19 Management Plan in place. Appropriate PPE in place for workers. WHO and appropriate health guidelines in place and observed by workforce.	Ongoing
Subcontractor	All sites rehabilitated as necessary to prevent mosquito infestation. Sites properly developed and drained. Daily site inspection logs	Daily

Magil as EPC, Sub Contractor as applicable	Documentation of training and provision of PPE. Daily site inspection logs indicating appropriate signage on site demarcating hazards and appropriate bounding and cordons in place.	Ongoing Daily
Magil as EPC	Labor Desk in place. Community grievances with respect to labor recruitment not excessive and expectations managed	One time verification
Subcontractor	List of employees available and demonstration that expatriates only hired where no viable alternative is available.	Ongoing
Magil as EPC, Sub Contractor as applicable	Appropriate end of term contracts issued.	Ongoing
Magil as EPC, Sub Contractor as applicable	Local procurement plan developed. Record of subcontracting developed and maintained. Records of local procurement spend.	Ongoing
Magil as EPC	No legal challenges pursuant to wages or conditions of employment.	Ongoing
Magil as EPC	Occupational Health Management Plan as risk appropriated developed and maintained and proof of training provided. Incident register developed and maintained and available for scrutiny.	Ongoing
Magil as EPC	Human Resources Management Plan and records kept to demonstrate compliance with plan and targets. Available for scrutiny.	Ongoing
Magil as EPC, Sub Contractor as applicable	Records of training maintained and available.	Ongoing
Magil as EPC, Sub Contractor as applicable	Signed contracts available for scrutiny.	Ongoing
Magil as EPC	A functioning Worker Grievance Mechanism that is accessible and used without fear or favor. Grievance log available for scrutiny.	Ongoing

Magil as EPC	Record of workers and proof of age of all employees (e.g. national id card) available for scrutiny.	Ongoing
Magil as EPC	Local procurement plan developed. Proof of disclosure to sub contractors. Record of subcontracting developed and maintained. Records showing degree to which sub contractors are monitored.	Ongoing
Magil as EPC, Sub Contractor as applicable	Meal breaks scheduled and provision for appropriate access to local service providers for workforce.	One time verification
Magil as EPC	Baseline water supply analysis and records of water supply during construction period showing no negative impact.	One time verification
Magil as EPC	Documented hydrocensus. Monthly record of water levels.	One time verification. Monthly monitoring of well levels.
Magil as EPC	Groundwater permits available for scrutiny	One time verification
Magil as EPC	Records of water use available.	Ongoing
Magil as EPC	Documented Waste Management Plan. Maintain records of implementation of measures specified in the plan.	Ongoing

Magil as EPC	Maintain records of training provided.	Ongoing
Magil as EPC, Sub Contractor as applicable	Maintain records of types and volumes of waste that are generated, recycled and disposed. Records to include locality of disposal.	Ongoing
Magil as EPC, Sub Contractor as applicable	Maintain records of types and volumes of materials to the spoil sites. Maintain records of material reuse and disposal.	Ongoing
Magil as EPC, Sub Contractor as applicable	Maintain records of provision of sanitary facilities and records of sewage treatment/disposal.	Ongoing
Magil as EPC	Maintain design records verifying	One time verification
Magil as EPC	Maintain design records verifying	Ongoing

Magil as EPC	Maintain design records and an inspection log to verify implementation	Ongoing
Magil as EPC	Documented Emergency Response Plan and Workforce Health and Safety Plan. Maintain records of implementation of measures specified in the plans.	Ongoing
Magil as EPC	Documented Emergency Response Plan and Workforce Health and Safety Plan. Maintain records of implementation of measures specified in the plans.	Ongoing
Magil as EPC	Inspection log verifying implementation	Ongoing
MINTP or delegated au	Maintain records of maintenance inspections and activities undertaken	Ongoing

Ref. (ESIA or CCRA)	Project Phase	Topic Area	Impact	ESMP Measure	Measure Type
8.3.2.1	Operation	Soil, surface and groundwater quality	Increase in impermeable surfaces reducing infiltration and resulting in increased surface water runoff	Conduct regular inspection and maintenance of permanent erosion and runoff control features.	World Bank EHS Guideline
8.3.2.1	Operation	Soil, surface and groundwater quality	Increase in impermeable surfaces reducing infiltration and resulting in increased surface water runoff	Quarterly maintenance and cleaning of the hydraulic structures to ensure that the flow of water is not obstructed by objects, waste, sediments or vegetation.	Bespoke from ESIA
8.5.2.1	Operation	Noise and vibrations	Human health impacts associated with increased noise levels from traffic	The project will implement a Community Grievance Mechanism to manage any complaints from surrounding community members, including those related to noise. In responding to any such complaints, the project will consider noise abatement measures, including the construction of noise barriers, to help manage these types of impacts.	World Bank EHS Guideline
8.5.2.1	Operation	Noise and vibrations	Human health impacts associated with increased noise levels from traffic	Additional noise monitoring may be required to inform selection of appropriate noise abatement measures such that no receptor experiences sustained noise levels above those presented in Table 8-6 of this ESIA. If additional noise monitoring is required, it should be in accordance with <i>ISO 1996-1: 2016: Acoustics – Description, Measurement and Assessment of Environmental Noise - Part 1 Basic Quantities and Assessment Procedures</i> .	Bespoke from ESIA
8.6.2.1, 8.6.2.2	Operation	Social	Multiple	Maintenance of the road to reduce mechanical failure of vehicles due to road conditions and users' ability to follow the designed traffic speeds.	World Bank EHS Guideline
8.6.2.1, 8.6.2.2	Operation	Social	Multiple	Maintenance of all signs, signals, markings, and other devices used to regulate traffic.	World Bank EHS Guideline
8.6.2.3	Operation	Social	Risk of traffic accident (unplanned)	The following measures related to pedestrian safety should implemented: <ul style="list-style-type: none"> • Maintenance of speed control and traffic calming devices at pedestrian crossing areas. • Maintenance of all signs, signals, markings, and other devices used to regulate traffic, specifically those related to pedestrian facilities. 	World Bank EHS Guideline

8.6.2.3	Operation	Social	Risk of traffic accident (unplanned)	<p>The following general safety measures should be implemented to minimize the risk of accidents along the road:</p> <ul style="list-style-type: none"> • Maintenance of all signs, signals, markings, and other devices used to regulate traffic; • Setting and enforcement of speed limits appropriate to the road and traffic conditions; • Maintenance of the road to prevent mechanical failure of vehicles due to road conditions; • Installation of measures to reduce collisions between animals and vehicles (e.g. use of signs to alert drivers on road segments where animals frequently cross; construction of animal crossing structures; installation of fencing along the roadway to direct animals toward crossing structures; and use of reflectors along the roadside to deter animal crossings at night when vehicles are approaching). 	World Bank EHS Guideline
8.6.2.3	Operation	Social	Risk of traffic accident (unplanned)	Implementing a real-time warning system with signage to warn drivers of congestion, accidents, adverse weather or road conditions, and other potential hazards ahead.	World Bank EHS Guideline
8.6.2.4	Operation	Social	Infringement on workers' human rights (unplanned)	<p>Develop an Occupational Health Management Plan (or equivalent) for road maintenance activities. This should identify measures related to risks from:</p> <ul style="list-style-type: none"> • Over exertion • Slips and Falls • Object strikes <p>All employees should be trained on the Occupational Health Management Plan, with particular focus on those risks specific to their roles.</p>	World Bank EHS Guideline
8.6.2.4	Operation	Social	Infringement on workers' human rights (unplanned)	<p>Develop a Human Resources Management Plan (or equivalent). This Plan will specify clear contracting procedures and worker rights in accordance with national law and IFC PS2. The Human Resources Management Plan will incorporate human rights and non-discrimination principles. Priority will be given to local workers provided they are suitably qualified to undertake the work.</p> <p>Implement training for all workers, including contract workers, on the principles of the Human Resources Management Plan including worker rights, non-discrimination and human rights.</p>	World Bank EHS Guideline
8.6.2.4	Operation	Social	Infringement on workers' human rights (unplanned)	All contracts for workers, including contract workers, will be in accordance with applicable national labor law and IFC Performance Standard 2 requirements. Worker contracts must clearly detail workers' rights.	World Bank EHS Guideline
8.6.2.4	Operation	Social	Infringement on workers' human rights (unplanned)	<p>Develop and implement a grievance mechanism for all workers (including direct employees and contractors) to provide a means for raising workplace concerns. The process should be understandable and transparent, and provide timely feedback to those concerned, without retribution.</p> <p>The mechanism shall be communicated to all workers, including subcontractors via accessible means (e.g. notice boards) and in employment contracts.</p>	World Bank EHS Guideline
8.6.2.4	Operation	Social	Infringement on workers' human rights (unplanned)	Ensure the project, including subcontractors will utilize no child or forced labor (as defined by Performance Standard 2).	World Bank EHS Guideline

8.7.2.1	Operation	Waste	Project generated waste affecting local environment or community receptors	<p>Develop and implement a Waste Management Plan (or equivalent) to ensure responsible management of all waste arising from activities. The waste management plan should cover the following aspects:</p> <ul style="list-style-type: none"> • Purpose/Objectives – of the Plan • Context – legal requirements and general principles • Roles and Responsibilities – of different staff and contractors • Waste Arising (Types and quantities of key waste streams and Waste classification – local/international) • Waste Minimization • Waste Storage and On-site Handling (including segregation of different waste types) • Reuse and Recycling • Waste Collection and Transfer • Treatment and Disposal • Waste Tracking, Data Management and Reporting • Communications/Community Liaison 	World Bank EHS Guideline
8.7.2.1	Operation	Waste	Project generated waste affecting local environment or community receptors	<p>Wastes which cannot be recycled, will be transported to the closest suitable treatment or disposal site. This will depend on the individual type of waste. The WMP will detail the preferred treatment options for all of the expected types of waste and will also include a procedure for determining how any other wastes, not expected at this stage but which arise during the Project, will be treated.</p> <p>Waste disposal will only be undertaken at permitted facilities specifically designed to receive, handle and dispose of the waste.</p> <p>Potential waste management facilities will be assessed by the Project prior to being used for managing the Project's waste to confirm that they do have the necessary licenses for the particular waste(s) and to check that their environmental, health and safety performance is in line with good international industry practice (GIIP) as indicated in IFC guidelines . This assessment will extend to third-party waste management contractors use of waste facilities.</p> <p>The WMP will define procedures for onsite waste storage, biological, chemical, or physical treatment (including treatment of hazardous waste materials to render them non-hazardous prior to disposal) and final disposal.</p>	World Bank EHS Guideline
8.7.2.1	Operation	Waste	Project generated waste affecting local environment or community receptors	<p>Incorporate the principles of recycling into cut and fill and repaving activities. This means maximizing the rate of recycling of road resurfacing waste either in the aggregate (e.g. reclaimed asphalt pavement or reclaimed concrete material) or as a base and incorporating recyclable materials (e.g. glass, scrap tires, certain types of slag and ashes) to reduce the volume and cost of new asphalt and concrete mixes.</p>	World Bank EHS Guideline
8.7.2.1	Operation	Waste	Project generated waste affecting local environment or community receptors	<p>The project will implement a Community Grievance Mechanism (or equivalent) to manage any complaints from surrounding community members, including those related to waste management.</p>	World Bank EHS Guideline
CC01, CC02, CC04, CC08	Operation	Climate Change	Damage to the structure, integrity, and durability of pavement and supporting paved infrastructure, and shortened road longevity	<p>Scheduling regular maintenance, e.g. every year, to check for cracks and repair them before water damage causes further cracks. Sealcoating should be reapplied at regular intervals to stop moisture from penetrating the surface.</p>	Bespoke from CCRA

CC04	Operation	Climate Change	Unsafe Travel Conditions and Potential Injuries	Implementation of a Roadside Vegetation Management Program that would ensure the regular maintenance of vegetation along the service roads and within the roundabouts, particularly during the rainy seasons. This can include strategies such as mowing, weeding, and brush cutting.	Bespoke from CCRA
CC05, CC06	Operation	Climate Change	Reduction in productivity and risk of injury of project workforce	Where feasible, avoid scheduling maintenance activities during seasons of high rainfall, when the risk of flooding and mudslides is highest.	Bespoke from CCRA
CC07	Operation	Climate Change	Damage to project traffic, machinery, and material	Carefully manage maintenance machinery to ensure that it does not overheat during particularly hot spells (e.g. ensuring sufficient water levels for cooling) and avoiding machinery use at peak temperature hours.	Bespoke from CCRA

Responsible Party	Performance Indicator	Frequency
MINTP or delegated authority	Conduct at least quarterly inspections and maintain inspection logs.	Quarterly
MINTP or delegated authority	Conduct at least quarterly maintenance and cleaning and maintain logs or works.	Quarterly
MINTP or delegated authority	Documented Community Grievance Mechanism. Maintain records of implementation of measures specified in the mechanism. Grievance log available for scrutiny.	Ongoing
MINTP or delegated authority	Records of additional noise monitoring, if required	Ongoing (as needed)
MINTP or delegated authority	Quarterly road inspection logs documenting status of road.	Quarterly
MINTP or delegated authority	Records of all ongoing maintenance activities.	Ongoing
MINTP or delegated authority	Quarterly road inspection logs documenting appropriate signage in place and well maintained.	Quarterly
MINTP or delegated authority	Records of all ongoing maintenance activities.	Ongoing
MINTP or delegated authority	At least quarterly inspection of all pedestrian crossing areas and speed controls/signage.	Quarterly
MINTP or delegated authority	Implementation of Community Grievance Mechanism with associated records.	Ongoing

MINTP or delegated authority	Design records Quarterly inspection logs	One time verification, followed by quarterly inspections
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MINTP or delegated authority	Occupational Health Management Plan as risk appropriate, developed and maintained. Records of training provided. Records of monitoring and incidents maintained.	Ongoing
MINTP or delegated authority	Human Resources Management Plan and records kept to demonstrate compliance with plan and targets. Available for scrutiny. Evidence of induction training maintained and available.	Ongoing
MINTP or delegated authority	Contracts as per legal requirements drawn up and signed by all employees. Available for scrutiny.	Ongoing
MINTP or delegated authority	A functioning Worker Grievance Mechanism that is accessible and used without fear or favor. Grievance log available for scrutiny.	Ongoing
MINTP or delegated authority	Record of workers and proof of age of all employees (e.g. national id card) available for scrutiny.	Ongoing

MINTP or delegated authority	Documented Waste Management Plan. Maintain records of implementation of measures specified in the plan.	Ongoing
MINTP or delegated authority	Maintain records of types and volumes of waste that are generated, recycled and disposed. Records to include locality of disposal.	Ongoing
MINTP or delegated authority	Maintain records of use of recycled materials	Ongoing
MINTP or delegated authority	A functioning Community Grievance Mechanism that is accessible and used without fear or favor. Grievance log available for scrutiny.	Ongoing
MINTP or delegated authority	Maintain records of maintenance inspections and activities undertaken	Ongoing

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MINTP or delegated authority	Maintain date log of when maintenance activities occur. This should show no such activities during the peak rainy period of July and August. Maintain log whenever paving activities are occurring documenting if conditions are dry or wet.	Ongoing
MINTP or delegated authority	Maintain records of maintenance inspections and activities undertaken	Ongoing