10 ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLANS

10.1 Introduction

This section describes how the mitigation measures identified in this environmental and social impact assessment (ESIA) will be implemented and monitored. This section has been prepared in accordance with the requirements of the:

- National Environment Act, Cap 153, 1995
- Ugandan Environmental Impact Assessment Regulations, 1998
- Guidelines for Environmental Impact Assessment in Uganda (National Environmental Management Authority (NEMA) 1997)
- Environmental Impact Assessment Guidelines for the Energy Sector in Uganda, 2004 and the Environmental and Social Impact Assessment Guidelines for the Energy Sector in Uganda, 2014[1].
- International Finance Corporation Performance Standard 1.

Every effort has been taken, informed by technical experience and industry knowledge, to evaluate all potential impacts and identify appropriate mitigation measures. Should unforeseen impacts arise during the implementation of the pipeline, the project will undertake the necessary assessments, develop adequate mitigation measures and, inform NEMA.

In accordance with the Environmental Impact Assessment Guidelines for the Energy Sector in Uganda, 2004 and the Environmental and Social Impact Assessment Guidelines for the Energy Sector in Uganda, 2014, an environmental and social management plan (ESMP) has been developed and is included in this section.

A suite of construction phase management plans will be prepared before construction activities begin and a suite of operational phase management plans will be prepared before operational activities begin; these management plans, described in Section 10.7 will support implementation of the ESMP.

The commitments register (Appendix E4) lists the management plans and the associated mitigation measures. The commitments will inform the management plans which, once drafted, will control, manage and monitor the environmental and social impacts identified in this ESIA.

Stakeholder consultation has been ongoing and will continue during all project phases with lead agencies, local leaders and communities. The aim of continuous stakeholder consultation is to provide ongoing project information and receive

[1] The Environmental Impact Assessment Guidelines for the Energy Sector (NEMA 2004) encompass all types of energy projects, including oil pipelines, whereas the 2014 guidelines refer to oil only in the context of thermal generation. Nonetheless, the 2014 guidelines include text from both the 2004 guidelines and refinements, such as additional information on the ESMMOP, and hence are considered current best practice

feedback regarding the effectiveness of project mitigation. Received feedback will inform responsive and adaptive management of environmental and social impacts.

This section includes:

- health, safety, security, society and environment charter
- objectives and targets
- reporting system
- environmental and social management and monitoring plan (ESMP) matrix
- roles and responsibilities
- supporting management plans
- supporting subplans
- training needs and capacity building
- management of change.

10.2 Health, Safety, Security, Society and Environment Charter

The pipeline ESMP is guided by the pipeline Health, Safety, Security, Society and Environment (H3SE) Charter which is aligned with Total E&P Uganda Charter and which has the following ten principles, under which Total E&P Uganda:

1. Holds safety, security, health, respect for the environment, customer satisfaction, listening to all stakeholders by way of an open dialogue, as paramount priorities.
2. Complies with all applicable laws and regulations wherever it conducts its business and supplements them with specific requirements and commitments when necessary.
3. Promotes, among its employees a shared culture which the core components are professionalism, the rigorous compliance and application of regulations, skills management, incident feedback and continuous learning. This approach relies on the vigilance and commitment of all.
4. Expects each and every team member, at all levels, to be aware of their role and personal responsibility in the practice of their duties. Individuals must demonstrate the strictest discipline in preventing accidents and deliberate damage; in protecting health, the environment and product and service quality while addressing stakeholder expectations. Rigor and exemplarity in these fields are important criteria in evaluating the performance of each member of personnel, in particular for those in positions of responsibility.
5. Favours the selection of industrial and business partners on the basis of their ability to apply policies similar to its own concerning safety, security, health, the environment, quality and societal measures.
6. Implements, for all of its operations, appropriate management policies regarding safety, security, health, the environment, quality, societal commitment and a periodic risk assessment of relevant policies and measures. Any development of a project or launch of a product is undertaken upon full lifecycle risk assessment.

7. Applies appropriate safety, health, environmental, quality and societal commitment management systems which undergo regular assessment involving measurement of performance setting milestones, formulating relevant action plans and instituting suitable control procedures.
8. Implements incident response plans and means of intervention designed to face different types of events it may encounter. Such measures are periodically updated and reviewed during exercises.
9. Is committed to managing its energy consumption, emissions in natural environments (water, air and soils), production of final waste, use of natural resources and impact on biodiversity. It develops new processes, products and customer services in order to enhance energy efficiency and reduce environmental footprint.
10. Adopts a constructive attitude towards safety, security, health, the environment and quality, based on transparency and an open dialogue with stakeholders and outside parties. Through its societal commitment, TEAM is particularly keen on contributing to the sustainable development of neighbouring communities, with a focus on human, economic and social issues. It conducts its operations in such a way as to responsibly ensure security, in compliance with the Voluntary Principles on Security and Human Rights.

10.3 Objectives and Targets

A project objective is to design, construct and operate a pipeline that does not present risk, injury or harm to personnel and or host communities and their supporting ecosystem services.

The ESMP presents monitoring parameters and proposed performance indicators and targets that will steer environment and social performance toward continuous improvement.

10.4 Reporting System

A comprehensive reporting system will be developed including:

- internal reporting of environmental and social performance
- external reporting to government relating to:
  - permitting and licensing requirements, e.g., notice before starting an activity
  - monitoring results in accordance with the terms and conditions of any licences or consents
  - annual environmental and social compliance audits
  - environmental and social incidents as required by legal requirements.

10.5 Environmental and Social Management and Monitoring Plan Matrix

The ESMP (Section 10.12) reflects the findings of the ESIA and is based on the detailed impact assessment tables presented in Appendices E2 and E3 and summarised in Section 8.

Typically, it is not a single mitigation that reduces an impact but the application of several mitigations that all contribute to the management of an impact. The key mitigation measures presented in this section, and the associated management plan and other measures that are included in Section 10.7 and Appendix E4, have been collectively used to assess residual impacts, and to determine their significance.

The ESMP has been developed so that an impact can be monitored using an appropriate monitoring parameter that will, by default, provide information about potential secondary impacts. For example, monitoring of “contamination of surface water” will by default address potential impacts to aquatic biodiversity and ecosystem services associated with surface water, thus simplifying the monitoring programme while maximising information and control of impacts.

The monitoring parameters and performance indicators included in the ESMP are consistent with the SMART principle where applicable, namely specific, measurable, achievable, realistic and time-bound.

Three different ESMP matrices have been developed and are presented in Section 10.12:

- construction generic impacts
- operational generic impacts
- construction location-specific impacts.

The ESIA concluded that there are no predicted location-specific impacts during the operational phase.

10.6 Roles and Responsibilities

Roles and responsibilities of parties implementing management plans, associated mitigation measures and the ESMP are outlined below in Table 10.6-1.

Table 10.6-1 Roles and Responsibilities

Role	Responsibilities
The project	Defining the minimum content of the ESMP (see Section 10.7). Ensuring implementation and monitoring of the management plans and ESMP, and the negative impacts are adequately mitigated, and positive impacts enhanced. Allocation of adequate means within the project organisation for implementation of the plans and mitigation measures. Ensuring that all contractors set up their management systems with consideration of the ESIA findings. Approval of contractors' ESMP. Ensuring compliance with the project commitments. Notifying NEMA in the case of changes to the design or activities which can result in changes to the ESIA findings. Preventing pollution and actions that will harm or may cause harm to the environment. Preparing for emergencies. Notifying the relevant authorities in case of emergencies. Ensuring continuous stakeholder engagements throughout the project lifetime. Providing resources for adequate environmental and social training and awareness of its employees. Ensuring adequate financing for implementation of the ESMP to ensure compliance and desired outcomes. The implementation of some management plans and mitigation measures will depend not solely on the project but also on other parties, including government agencies and third parties operating in the project area of influence.
Project representative	Informing H3SE team on changes in the design. Ensuring development and approval of detailed management plans by respective contractors. Performing periodic audits of contractor's activities jointly with H3SE team Reporting on the implementation of management plans and any nonconformances.

Table 10.6-1 Roles and Responsibilities

Role	Responsibilities
Project H3SE team	Ensuring detailed management plans are produced are consistent with ESIA findings. Ensuring implementation of the management plans including impacts monitoring. Ensuring update of the H3SE Management System and ESMP: on a periodic basis or in case of important changes to the impacts or mitigation measures. Advising contractors on the ESIA findings. Monitoring pipeline activities on site, ensuring adherence to the management plans, and reporting nonconformances. Planning and undertaking stakeholder engagement throughout the pipeline lifetime. Performing audits of site activities and reporting accordingly. Reporting any significant environmental incidents to the responsible Authorities as may be required. Analysing incidents to prevent re-occurrence. Assessing design changes for further notification to NEMA where it may result in changes to the ESIA findings. Monitoring project related grievances according to grievance management procedure. Undertaking regular environment and social reporting. Providing environmental and social training and awareness to the employees.
Project Responsible on Site for Safety and Environment (RSES) The RSES is a delegate of the project on site, and all personnel working on that site are answerable to the RSES on HSE issues.	Ensuring H3SE leadership on site (training, site committees, managing site action plans). Ensuring risk assessment of pipeline activities and management of risks on site. Implementing the emergency preparedness system and managing on-site command posts in case of emergency.

Table 10.6-1 Roles and Responsibilities

Role	Responsibilities
Contractor on behalf of project	Developing detailed management plans consistent with Section 10.7 and the requirements of the ESMP and, project requirements relative to the scope of work. Ensuring work conducted is done within the framework of the contractor's management plans, Ugandan legislation and Good International Industry Practice. Ensuring that contractors' and subcontractors' employees are aware about the contents of the management plans relative to the scope of work and their roles and responsibilities in its implementation. Ensuring that all subcontractors have a copy of and are fully conversant with the contents of the management plans and associated roles and responsibilities. Providing regular reports to project representatives on implementation of contractor's management plans and nonconformances. Participating in monitoring compliance and impacts upon the surrounding environment through independent audits or led by the project, implement corrective mitigation measures where required. Appointing persons responsible on site for health, safety, security, social and environment. Informing project representatives on incidents or complaints from stakeholders. Addressing concerns raised from the activities including activities-related grievances according to grievance management procedure. Implementing the emergency response on site.

10.7 Estimated Costs

Preliminary estimates are presented for costs associated with implementing the ESMP during site preparation and enabling works, and construction and pre-commissioning until first oil (where most mitigations are to be implemented due to types of impacts and works intensity) and are included in the project proponents long-term planning for the Tilenga Project, including the feeder pipeline. They exclude costs associated with developing and implementing embedded mitigations (which are mainly design related and form part of the scopes assigned to the Tilenga Project engineers and contractors), those related to human resources and the global emergency preparedness and response as these are catered for aside.

The ESMP development and implementation for the Tilenga Project, which includes the costs for the feeder pipeline, is associated with costs presented below (out of which monitoring is estimated to represent about 0.8 million USD per year):

- environment, approximately 4.5 million USD per year
- social (including the resettlement action plan, RAP), about 14 million USD per year.

Some programmes are expected to cut across environment and social and some relate to the outcome of feasibility studies. Therefore, adaptive management is

expected to ensure the project objectives are met (including no net loss/net gain) and which may impact on cost estimates presented here. In addition, as indicated in this section, the implementation of the ESMP will be based on the H3SE Charter and subject to continuous improvement. It is expected that costs associated with commissioning and operations are lower, as work intensity will have reduced and related mitigation and monitoring will be more routine. However, the detail will be assessed closer to that stage.

10.8 Management Plans

This section describes the management plans that will support the implementation of the ESMP. Minimum content of these management plans are the mitigation commitments developed throughout the ESIA and used in Sections 8 and 9 and Appendices E2 and E3 (to facilitate impact evaluation and calculate the significance ranking of residual impacts). The commitments are presented in Appendix E4.

The management plans are applicable during construction and operation, other than for the decommissioning plan.

Where applicable, separate plans will be drafted for construction and operation that account for the activities and anticipated potential impacts.

Management plans will be revised annually as a minimum or, more frequently as required, in response to pipeline changes, lessons learnt and or adaptive management.

The project will be responsible for the content, drafting, implementation and revisions of the management plans described in this section.

A separate suite of management plans will be drafted for construction and operations.

An overview of each management plan is described in this section. The project will prepare management plans for the relevant phase of the pipeline that include, but are not limited to, this minimum content in support of implementation of the ESMP.

10.8.1 MP01: Biodiversity Management Plan

The biodiversity management plan (BMP) will define the approach to reduce impacts on biodiversity and will address:

- pre-construction surveys and pre-clearance surveys
- biodiversity action plan
- construction biodiversity considerations, such as signage, reducing habitat disturbance, habitat and species protection, biosecurity plan
- mitigation measures to be applied immediately before the onset of construction, such as translocation plan for flora and fauna, immediate pre-clearance checks.

10.8.2 MP02: Pollution Prevention Plan

The pollution prevention plan (PPP) will define the approach to prevent pollution and will specify minimum requirements for:

- good international industry practice that will be used in project activities to attenuate impacts resulting from noise, light, dust, nuisances and other sources of pollution
- blast management
- energy management, including sources of emissions and project emission limits
- selection, safe management, use and disposal of chemicals
- handling and disposal of contaminated soil (from chance finds as well as potential project incidents)
- watercourse crossings addressing issues such as fuel and chemical handling and storage, surface runoff into watercourses at crossing points and, management of potential project-related sediment loading of the watercourse.
- management of washwater from vehicles and concrete delivery trucks
- planned maintenance of facilities and equipment.

10.8.3 MP03: Waste Management Plan

The waste management plan (WMP) will define the approach to reduce potential waste related impacts and will address:

- development of a waste management hierarchy
- identification and classification of project waste streams
- requirements for waste collection, segregation, treatment, storage and transportation
- final disposal options
- waste management documentation to show compliance with duty of care.

10.8.4 MP04: Natural Resource Management Plan

The natural resource management plan (NRMP) will define the approach to manage natural resource use and will address:

- aggregates management (sourcing, storage, use, reuse and disposal)
- water management including potable water and sharing community resources
- timber management.

10.8.5 MP05: Soil Management Plan

The soil management plan (SMP) will define the approach to soil management and temporary erosion control and will address:

- construction planning surveys and assessments
- soil handling, including topsoil stripping and segregation of soil types during temporary soil storage
- disturbance of contaminated land
- temporary erosion control.

10.8.6 MP06: Cultural Heritage Management Plan

The cultural heritage management plan (CHMP) will define the approach to the identification, assessment and mitigation of potential impacts on tangible and intangible cultural heritage and will address:

- pre-construction surveys and assessments avoidance and or preservation of known archaeological or cultural heritage assets
- chance finds procedure for tangible and intangible cultural heritage
- interface meetings.

10.8.7 MP07: Reinstatement Plan

The reinstatement plan (RP) will define the approach to manage reinstatement incorporating permanent erosion control and bio-restoration, and will address:

- permanent erosion control
- bio-restoration, revegetation and / or reseeding
- site reinstatement, including decommissioning of temporary work sites and facilities
- watercourse and wetland crossings reinstatement including vegetation removal and bank stabilisation
- the procedure to identify where location-specific reinstatement plans are required as per the findings of the ESIA
- exit surveys documenting site condition on construction completion.

10.8.8 MP08: Stakeholder Engagement Plan

The stakeholder engagement plan (SEP) will define the approach to maintain a social licence to operate[2] among project-affected communities (PACs) and will address:

- effective messaging, including: construction safety awareness, communicable diseases, employment opportunities and limitations, expectation management, grievance procedure
- activities of community liaison officers
- information sharing
- community relations training
- initiatives to establish good community relations
- the grievance procedure.

10.8.9 MP09: Resettlement Action Plan

The resettlement action plan (RAP) will define the approach for addressing physical and/or economic displacement of project affected persons (PAPs) and will detail:

- the applicable national and international laws, policies and standards which will govern the resettlement programme and the land acquisition process

[2] A social licence to operate exists when a project has ongoing approval or acceptance within the local community and other stakeholders.

- the methods of identifying PAPs
- resettlement, valuation and compensation mechanism for planned activities and accidental damage
- livelihood restoration process for land and water-based livelihoods
- stakeholder engagement and participation.

10.8.10 MP10: Labour Management Plan

The labour management plan (LMP) will define the approach to ensure recruitment practices and working conditions comply with legal requirements and project standards.

The LMP will:

- comply with international labour standards, National labour laws and regulations concerning transparency, accountability, anticorruption and human rights
- recognise workers' right to trade union representations and organise collective bargaining
- providing suitable working conditions, including rest facilities and breaks
- provide a mechanism for compliance with the International Labour Organisation Maternity Protection Convention (2000)
- respect workers' rights to privacy including data protection requirements.

The LMP will detail:

- recruitment policies and process, including guidance for local recruitment
- provision for national content, development of local enterprise and capacity development
- location and operation of recruitment centres
- labour contracts, including workers' rights, workers' conduct, camp rules and workers' grievance procedure
- disciplinary procedures
- a retrenchment plan to manage retrenchment at the end of the construction phase
- workforce environmental and social training and awareness programmes and, local skills development.
- training to ensure workforce have the skills to perform their responsibilities.

10.8.11 MP11: Project Induced In-Migration Management Plan

The project induced in-migration management plan (PIIMP) will define the approach to prevent project induced in-migration and manage negative impacts of potential project induced in-migration and will address:

- measures to avoid or limit consequences associated with the in-migration of people into project areas as a result of the project's presence and activities.
- measures to manage planned and unplanned in-migration and the indirect impacts of this on biodiversity and host communities.

10.8.12 MP12: Procurement and Supply Chain Management Plan

The procurement and supply chain management plan (PSCMP) will define the approach to supply chain management including environmental, social and quality considerations, maximise the purchase of local goods and services, and will address:

- procurement and supply standards
- national content policy for local business and community development
- third-party vendors of services, materials and products
- third-party aggregate extraction and batching facilities
- capacity development
- ring-fencing contracts
- workers' rights compliance.

The PSCMP will include a national content plan informed by the National Content Regulations 2016 (Clause 7.1). The national content plan will address the following where applicable:

- the employment and training of Ugandans
- the required quality, health, safety and environment standards for goods and services to be procured
- the transfer of technology, knowledge and skills to Ugandan companies, Ugandan citizens and registered entities
- research and development in Uganda
- the procurement of goods and services obtainable in Uganda
- local supplier development
- partnership with Ugandan companies, Ugandan citizens and registered entities
- the succession of expatriates by Ugandan citizens
- support to local education institutions
- support to partnerships and collaborations
- services to be provided by Ugandan companies, Ugandan citizens and registered entities
- any other information as the Authority may require.

10.8.13 MP13: Infrastructure and Utilities Management Plan

The infrastructure and utilities management plan (IUMP) will define the approach to monitor use of and/ or accidental damage to infrastructure and utilities and define the process of corrective action and will address:

- crossing schedule and planning
- use of public roads and associated infrastructure
- utilities and service integrity
- irrigation and drainage systems
- flood control
- buildings.

10.8.14 MP14: Community Health, Safety and Security Plan

The community health, safety and security plan (CHSSP) will define the approach to manage community health, safety and security matters and will address:

- community health including the management of sexual and communicable diseases, and vector control plan
- construction activity awareness and community safety
- community security.

10.8.15 MP15: Occupational Health, Safety and Security Plan

The occupational health, safety and security plan (OHSSP) will define the management of workforce occupational health, safety and security and will address:

- camp workforce health and wellbeing
- drug and alcohol policy
- camp facilities, including health clinics and potable water provision
- workforce fitness for work, sexual and communicable diseases prevention plan, vaccine preventable diseases management plan and vector control plan
- pest control and appropriate measures to reduce workforce interactions with wildlife (e.g., reptile control at camp-sites)
- safe procedure should unexploded ordnance be encountered during construction and or operation activities.

10.8.16 MP16: Transport and Road Safety Management Plan

The transport and road safety management plan (TRSMP) will guide pipeline logistics and support community and driver road safety during pipeline related transportation activities and will address:

- definition of pipeline transport routes
- local road upgrades
- notification of over-sized loads
- journey management, including convoys and scheduling of traffic movements
- suitable diversions routes during temporary closure of roads
- safety awareness education for local communities
- signage of hazards.

10.8.17 MP18: Emergency Preparedness and Response Plan

The emergency preparedness and response plan (EPRP) will define the approach to emergency preparedness and response and will address:

- emergency risk analysis, emergency preparedness and response planning and definition of the relationships with contractors' emergency response plans
- incident management, including spill response planning, location of emergency response equipment and PPE, material recovery and remediation techniques
- the type and content of emergency response exercises and the minimum personnel participation in these exercises

- the location of emergency response equipment; minimum equipment and PPE at these locations
- roles and responsibilities and specify communication and notification requirements (according to Tier 1, 2 and 3 thresholds).

10.8.18 MP19: Monitoring and Reporting Plan

The monitoring and reporting plan will define the approach to ensure that:

- monitoring, inspections and audits are undertaken in a systematic way
- the implementation of the environmental and social mitigation measures is monitored
- monitoring programmes would involve appropriate external stakeholders such as local government and civil society
- data on environmental and social conformance is gathered
- investigation of nonconforming monitoring results.
- internal and external reporting requirements are met.

The monitoring approach for potential impacts are described in the ESMP matrices (Section 10.12), with monitoring parameter(s), target criteria and monitoring frequency. The plan will address:

- a monitoring programme identifying monitoring locations (based on sensitive VECs and receptors) and monitoring methodologies
- environmental and social inspections and audit programme
- noncompliance management
- monitoring results tracking system
- responsibilities for reporting, content, level of detail and format of reports and reporting deadlines
- internal and external notifications and reporting.

10.8.19 MP20: Decommissioning Plan

The decommissioning plan will define the decommissioning of operation[3] infrastructure at the end of the life of the project and will:

- identify applicable laws and standards that will guide the decommissioning process
- define a schedule during the project life for developing a decommissioning process, including financing arrangements
- outline the approvals process for decommissioning
- define the environmental and social evaluation process.

10.9 Supporting Subplans

The management plans described in Section 10.7 define the minimum requirements based on the findings of the ESIA.

[3] Decommissioning of construction phase infrastructure will be addressed in the reinstatement plan (see Section **Error! Reference source not found.**).

There will be a requirement for other, more specialised supporting subplans to be developed, including but not limited to:

- location-specific biodiversity management plans specifying features and species for retention and protection, translocation, biorestoration requirements
- plans for erosion and sediment control and reinstatement for areas of fragile, sensitive or thin topsoil, side slopes or narrow ridges and at watercourse crossings
- OHSSP subplans, addressing, among other things: substance misuse, malaria (and vector controls) and, communicable diseases.

The subplans, as with all the primary management plans, will be revised annually or more frequently if required, in response to project evolution, new information and or adaptive management.

10.10 Training Needs and Capacity Building

10.10.1 Training Needs

An environmental and social training programme will be implemented and will include a system for assessing personnel competence and training needs.

The environmental and social training programme will include:

- induction training – both worksite induction and construction camp induction
- worker awareness training, including:
  - toolbox talks to be conducted as a minimum before any new work activity or work at a new site to include site-specific requirements such as sensitive vegetation, features of biodiversity and cultural heritage value to be protected
  - workers' rights and grievance procedure
  - health awareness
- financial literacy
- skills training to:
  - ensure competent and safe performance of duties, appropriate to the work being performed
  - training that optimises skills development for local personnel.

10.10.2 Capacity Building

The labour management plan and the procurement and supply chain management plan will identify priorities for capacity development and measures to increase the capacity of the project workforce, contractors and subcontractors. Capacity development priorities include:

- waste management
- safe driving
- handling of chemicals
- rules of engagement for security personnel
- basic health and safety training
- first aid training.

10.11 Management of Change

Changes to the project may occur subsequent to preparation and submission of this ESIA. A management of change procedure will be implemented, that includes:

- environmental and social appraisal of the change, including the identification of new or revised mitigation measures
- health and safety evaluation
- consultation with engineering and H3SE disciplines
- consultation with NEMA on the need for amendments to the ESIA permit
- management of change approval process.

Following management of change approval, changes to the ESMP and supporting management plans will be implemented.

10.12 ESMP Matrices

A generic impact is an impact that potentially occurs at multiple locations across the project area of influence (AOI) where the valued environmental and social component (VEC) and or impact characteristics are similar across those multiple locations. A location-specific impact is a potential impact that may occur at a specific location or, where the sensitivity of a VEC at a particular location warrants generic mitigation as well as additional, location-specific mitigation.

Proposed mitigation has been designed to ameliorate generic type impacts and location-specific type impacts to a level that is considered not significant.

Section 10.12.1 presents the environmental and social management plan (ESMP) that has been prepared to address generic impacts and identifies respective mitigation with proposed monitoring parameters, performance indicators, targets and acceptance criteria as applicable and, monitoring frequency.

Section 0 presents the location-specific ESMP. For each unique location-and-impact-mitigation combination a separate line item is presented, together with proposed monitoring parameters, performance indicators, targets and acceptance criteria as applicable and, monitoring frequency. The ESIA concluded that there are no predicted location specific impacts during the operational phase.

Monitoring parameters and performance indicators have been identified that are consistent with the SMART principle where applicable, namely: being specific, measurable, achievable, realistic and time-bound.

The specific costs of mitigations will be provided under separate cover.

10.12.1 Generic ESMP Matrix

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Soil compaction	Habitats of conservation importance	Impaired re-establishment of vegetation after construction	Biodiversity management plan Soil management plan Reinstatement plan. Community health, safety and security plan	Load-bearing/ground protection materials, such as bog mats and geotextile membranes under temporary haul roads, will be used to support heavy loads in areas of soft ground, including wetland areas. Local communities will be discouraged from using the Right-of-Way (RoW) as an access road during construction through signage, awareness raising and the use of communication materials. If topsoil is stored for more than six months, the stacks will be monitored for: • the presence of weeds, which will be controlled in accordance with the weed and pest control programme • compaction and erosion – corrective measures will be implemented if either is identified. Reinstatement will be undertaken as early as practicable following completion of construction activities in any RoW section or site. Ways to achieve an increasing trend in vegetation regrowth and diversity of desired species, specifically species composition and, plant species that support forage, refuge and nesting for species of conservation importance, in reinstated areas will be sought, with reference to nearby areas undisturbed by project activities. The re-establishment of vegetation will be monitored following reinstatement until long term re-vegetation targets have been reached.	Adherence to the soil management plan in terms of topsoil storage and control of erosion and compaction. Compliance with reinstatement plan in terms of drainage, contouring and revegetation.	Zero noncompliance with the soil management plan and the reinstatement plan.	Weekly during construction and reinstatement.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, PAU, district environment officers, DWRM, WMD, NFA and UWA
Soil erosion	Habitats of conservation importance	Loss of topsoil through erosion by wind or water causing impaired reinstatement	Soil management plan Reinstatement plan	Procedures will be developed, incorporating plans for erosion and sediment control and reinstatement. These will be produced before work begins at areas of fragile, sensitive or thin topsoil, side slopes or narrow ridges and at watercourse crossings. Sediment interception measures will be installed, inspected and maintained to prevent sediment runoff from the RoW or construction sites affecting watercourses, wetlands, waterbodies or environmentally sensitive areas. Procedures will include additional precautions to be taken and increased monitoring (minimum twice per week), with the aim of preserving the topsoil for subsequent replacement.	Rills or gullies on topsoil stacks and or reinstated areas	No visible signs of erosion	Bi-Weekly until vegetation is established in reinstated areas	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, DWRM, MEMD, PAU, district environment officers

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Soil erosion	Habitats of conservation importance	Reduced primary productivity in watercourses, smothering of invertebrates, lethal or sublethal effects on fish, degradation of spawning habitat	Soil management plan Reinstatement plan	Procedures will be developed, incorporating plans for erosion and sediment control and reinstatement. These will be produced before work begins at areas of fragile, sensitive or thin topsoil, side slopes or narrow ridges and at watercourse crossings. Sediment interception measures will be installed, inspected and maintained to prevent sediment runoff from the RoW or construction sites affecting watercourses, wetlands, waterbodies or environmentally sensitive areas. Procedures will include additional precautions to be taken and increased monitoring (minimum twice per week), with the aim of preserving the topsoil for subsequent replacement. Surface water that could be affected by runoff from the pipeline route or worksites will be visually inspected on a regular basis and remedial measures implemented if sediment or contamination arising from project activities are visible. During open-cut watercourse crossing activities, bank and bed material will be segregated, stored away from the active channels, and not be placed where flow or drainage will be obstructed. As much riparian vegetation as possible will be left in place until immediately before a watercourse crossing needs to be made to maintain stability of the banks. During site preparation, the height of vegetation on the riverbanks will be reduced, but roots will not be disturbed, to dissuade animals from nesting. The vegetation will then be removed when the crossing is made and the area reinstated as quickly as possible.	Installation of erosion and sediment controls. Separate storage of bank and bed material during crossings. River crossing method statements developed for wet crossings. Compliance with permit-to-pump.	Zero incidence of sedimentation above background levels greater than 50 m up- or downstream of crossings during construction. Zero incidence of collapsed banks after reinstatement Zero incidence of sediment loaded surface water run-off entering watercourses (causing sediment load above background levels) from the RoW. Zero noncompliance with permit-to-pump.	Daily - during watercourse construction activities. Daily during rain seasons. Weekly after reinstatement until vegetation is re-established. Daily when pumping trench and or spread water.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, DWRM, MEMD, PAU, district environment officers, MAAIF, NFA UWA and WMD
Loss of soil structure, fertility and seed bank	Habitats of conservation importance	Poor recolonisation due to anaerobic conditions in stored soil, reduced fertility and loss of entrained seeds	Soil management plan	If topsoil is stored for more than six months, the stacks will be monitored for: • the presence of weeds, which will be controlled in accordance with the weed and pest control programme • compaction and erosion – corrective measures will be implemented if either is identified. Reinstatement will be undertaken as early as practicable following completion of construction activities in any RoW section or site.	Compliance with soil management plan. Topsoil storage longer than 6 months; corrective measures implemented.	Zero noncompliance with the soil management plan.	Weekly during period between stripping and reinstatement.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, DWRM, MEMD, PAU and district environment officers

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Impeded flow of river or channel	Habitats of conservation importance	Loss of aquatic and water-margin habitats	Natural resource management plan	Where water is abstracted from a surface waterbody, the flow, water level or water volume in the waterbody will be assessed before and during abstraction. Abstraction rates and the frequency of assessment of the water flow, level or volume will be monitored based on permit conditions. During abstraction from surface waters, inlet hoses will be fitted with suitably sized fish screens.	Documentation (reports, checklists, etc) demonstrating that water flow and volume have been assessed. Visual observation of use of fish screens on hoses.	Zero noncompliance with water abstraction permit or the Natural Resource Management Plan.	Weekly – during water abstraction activities.	Project and project contractors; Relevant government bodies who may conduct independent monitoring or review the data include: NEMA, UWA, DWRM, district environment officers, PAU, MAAIF and WMD

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Loss of habitat	Habitats of conservation importance	Permanent loss of habitat from AGIs and operational RoW	Biodiversity management plan	Preconstruction biodiversity surveys will be undertaken at locations identified in the baseline appendices of the environmental and social impact assessment to record details of habitats and species of conservation importance within the working areas. This information will be used to produce site specific biodiversity management plans that will identify fine-scale route changes (where feasible), mark features for retention and protection, develop biorestoration measures including seed collection, translocation and species propagation and provide details of the specific mitigation measures (such as seasonal construction restrictions) to be implemented to reduce impacts on biodiversity during construction. As part of the Biodiversity Management Plan a vegetation removal method statement to reduce impacts on biodiversity will be developed. This will include but not be limited to measures such as: • directional felling of trees on land inside the RoW • avoiding damage to trees outside the RoW • identifying areas where strimming, coppicing or other works will be undertaken in advance of clearing. A biodiversity survey strategy will be developed to include timings and methods of surveys to be undertaken, including but not limited to: • supplemental preconstruction flora and fauna surveys • supplemental preconstruction biodiversity surveys of pre identified species of conservation concern • a biodiversity assessment of watercourses and wetlands • an assessment of fish spawning habitat at open-cut river crossings where the watercourse crossing is planned to occur during the fish-spawning season and International Union for Conservation of Nature or Red Data Book species are known or likely to occur • preconstruction checks on the RoW. Ways to achieve an increasing trend in vegetation regrowth and diversity of desired species, specifically species composition and, plant species that support forage, refuge and nesting for species of conservation importance, in reinstated areas will be sought, with reference to nearby areas undisturbed by project activities. The re-establishment of vegetation will be monitored following reinstatement until long term re-vegetation targets have been reached.	Changes in species populations and habitats, particularly in habitats of conservation importance; Documentation (reports, checklists, etc) demonstrating that supplementary preclearance surveys have been completed; and site-specific biodiversity management plans have been drafted and implemented where necessary	Comprehensive data records from supplementary preconstruction surveys Compliance with site-specific management plans	Minimum of 7 days before soil stripping commences for preclearance surveys. There-after weekly until sites are reinstated for compliance with biodiversity management plan; there-after monthly until sites are fully restored.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, DWRM, MEMD, PAU and district environment officers, PAU, NFA and WMD

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Loss of habitat	Habitats of conservation importance	Temporary loss of habitat from construction activities (RoW, other temporary worksites main camp and pipe yard MCPY)	Biodiversity management plan	Preconstruction biodiversity surveys will be undertaken at locations identified in the baseline appendices of the environmental and social impact assessment to record details of habitats and species of conservation importance within the working areas. This information will be used to produce site specific biodiversity management plans that will identify fine-scale route changes (where feasible), mark features for retention and protection, develop biorestoration measures including seed collection, translocation and species propagation and provide details of the specific mitigation measures (such as seasonal construction restrictions) to be implemented to reduce impacts on biodiversity during construction. As part of the Biodiversity Management plan a vegetation removal method statement to reduce impacts on biodiversity will be developed. This will include but not be limited to measures such as: • directional felling of trees on land inside the RoW • avoiding damage to trees outside the RoW • identifying areas where strimming, coppicing or other works will be undertaken in advance of clearing. A biodiversity survey strategy will be developed to include timings and methods of surveys to be undertaken, including but not limited to: • supplemental preconstruction flora and fauna surveys • supplemental preconstruction biodiversity surveys of pre identified species of conservation concern • a biodiversity assessment of watercourses and wetlands • an assessment of fish spawning habitat at open-cut river crossings where the watercourse crossing is planned to occur during the fish-spawning season and International Union for Conservation of Nature or Red Data Book species are known or likely to occur • preconstruction checks on the RoW. Ways to achieve an increasing trend in vegetation regrowth and diversity of desired species, specifically species composition and, plant species that support forage, refuge and nesting for species of conservation importance, in reinstated areas will be sought, with reference to nearby areas undisturbed by project activities. The re-establishment of vegetation will be monitored following reinstatement until long term re-vegetation targets have been reached.	Changes in species populations and habitats, particularly in habitats of conservation importance; Documentation (reports, checklists, etc) demonstrating that supplementary preclearance surveys have been completed; and site-specific biodiversity management plans have been drafted and implemented where necessary	Comprehensive data records from supplementary preconstruction surveys Compliance with site-specific management plans	Minimum of 7 days before soil stripping commences for preclearance surveys. There-after weekly until sites are reinstated for compliance with biodiversity management plan; there-after monthly until sites are fully restored.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, DWRM, district environment officers, PAU; WMD and NFA

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Loss of habitat	Habitats of conservation importance	Modified habitat structure following habitat reinstatement after construction	Biodiversity management plan	Preconstruction biodiversity surveys will be undertaken at locations identified in the baseline appendices of the environmental and social impact assessment to record details of habitats and species of conservation importance within the working areas. This information will be used to produce site specific biodiversity management plans that will identify fine-scale route changes (where feasible), mark features for retention and protection, develop biorestoration measures including seed collection, translocation and species propagation and provide details of the specific mitigation measures (such as seasonal construction restrictions) to be implemented to reduce impacts on biodiversity during construction. As part of the Biodiversity Management plan a vegetation removal method statement to reduce impacts on biodiversity will be developed. This will include but not be limited to measures such as: • directional felling of trees on land inside the RoW • avoiding damage to trees outside the RoW • identifying areas where strimming, coppicing or other works will be undertaken in advance of clearing. A biodiversity survey strategy will be developed to include timings and methods of surveys to be undertaken, including but not limited to: • supplemental preconstruction flora and fauna surveys • supplemental preconstruction biodiversity surveys of pre identified species of conservation concern • a biodiversity assessment of watercourses and wetlands • an assessment of fish spawning habitat at open-cut river crossings where the watercourse crossing is planned to occur during the fish-spawning season and International Union for Conservation of Nature or Red Data Book species are known or likely to occur • preconstruction checks on the RoW. Ways to achieve an increasing trend in vegetation regrowth and diversity of desired species, specifically species composition and, plant species that support forage, refuge and nesting for species of conservation importance, in reinstated areas will be sought, with reference to nearby areas undisturbed by project activities. The re-establishment of vegetation will be monitored following reinstatement until long term re-vegetation targets have been reached.	Documentation (reports, checklists, etc) demonstrating that supplementary preclearance surveys have been completed; and site-specific biodiversity management plans have been drafted and implemented where necessary	Comprehensive data records from supplementary preconstruction surveys Compliance with site-specific management plans	Minimum of 7 days before soil stripping commences for preclearance surveys. There-after weekly until sites are reinstated for compliance with biodiversity management plan; there-after monthly until sites are fully restored.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, DWRM, district environment officers, PAU; WMD and NFA

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Loss of habitat	Habitats of conservation importance	Loss of wetland and riparian habitat through open cut crossing during construction of the RoW	Biodiversity management plan	Preconstruction biodiversity surveys will be undertaken at locations identified in the baseline appendices of the environmental and social impact assessment to record details of habitats and species of conservation importance within the working areas. This information will be used to produce site specific biodiversity management plans that will identify fine-scale route changes (where feasible), mark features for retention and protection, develop biorestoration measures including seed collection, translocation and species propagation and provide details of the specific mitigation measures (such as seasonal construction restrictions) to be implemented to reduce impacts on biodiversity during construction. As part of the Biodiversity Management plan a vegetation removal method statement to reduce impacts on biodiversity will be developed. This will include but not be limited to measures such as: • directional felling of trees on land inside the RoW • avoiding damage to trees outside the RoW • identifying areas where strimming, coppicing or other works will be undertaken in advance of clearing. A biodiversity survey strategy will be developed to include timings and methods of surveys to be undertaken, including but not limited to: • supplemental preconstruction flora and fauna surveys • supplemental preconstruction biodiversity surveys of pre identified species of conservation concern • a biodiversity assessment of watercourses and wetlands • an assessment of fish spawning habitat at open-cut river crossings where the watercourse crossing is planned to occur during the fish-spawning season and International Union for Conservation of Nature or Red Data Book species are known or likely to occur • preconstruction checks on the RoW. Ways to achieve an increasing trend in vegetation regrowth and diversity of desired species, specifically species composition and, plant species that support forage, refuge and nesting for species of conservation importance, in reinstated areas will be sought, with reference to nearby areas undisturbed by project activities. The re-establishment of vegetation will be monitored following reinstatement until long term re-vegetation targets have been reached.	Documentation (reports, checklists, etc) demonstrating that supplementary preclearance surveys have been completed; and site-specific biodiversity management plans have been drafted and implemented where necessary	Comprehensive data records from supplementary preconstruction surveys Compliance with site-specific management plans	Minimum of 7 days before soil stripping commences for preclearance surveys. There-after weekly until sites are reinstated for compliance with biodiversity management plan; there-after monthly until sites are fully restored.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, DWRM, district environment officers, PAU; WMD and NFA

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Introduction of competitive species or plants/animal diseases	Habitats of conservation importance	Poor re-colonisation by local flora through competition by non-natives following reinstatement	Biodiversity management plan	Biosecurity measures will be developed and implemented that will include a strategy for weed and pest control and measures to prevent the introduction or spread of alien invasive species on the RoW, work sites and camp facilities. The biosecurity measures will also outline specifics to protect the aquatic environment from alien invasive species.	Visual inspection for incidence of alien invasive species. including; Changes in the extent and density of previously existing alien/invasive species populations; Occurrence of alien/invasive species attributed to the Project; Occurrences of newly introduced alien/invasive species Documentation supporting that the biosecurity measures are implemented.	Zero noncompliance with the Biodiversity Management Plan.	Weekly.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, DWRM, district environment officers, PAU and NFA
Disturbance or harm to wildlife	Habitats of conservation importance	Interaction between construction workers and habitats of conservation importance, especially relating to food and fuel	Biodiversity management plan Project-induced in-migration plan Community health, safety and security plan Occupational health, safety and security plan	Hunting, fishing, unauthorised gathering of products (including plants and firewood) and deliberate disturbance or harassment of fauna will be prohibited for project personnel. The Project will restrict the purchase of wildlife related products and crafts by project workers. Construction camp will be designated as having “closed” status to prevent interactions between the workforce and PACs and prevent the spread of communicable disease. Policies will be developed to manage transgressions within the project disciplinary procedures and structures. Provision of food to workers will be planned to cater for workforce requirements and therefore minimise food waste as far as possible.	Training records that specifically target hunting and gathering. Number of incidents or grievances (received / addressed) related to poaching, accidental poisoning, traffic, animal intrusion	Total coverage of all personnel living in camp.	Monthly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, DWRM, district environment officers, PAU and MAAIF

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Disturbance or harm to wildlife	Habitats of conservation importance	PIIM to areas around camp causing increased pressure on natural resources (farming, deforestation for fuel)	Project-induced in-migration plan	A PIIMP will aim to reduce the number of people that arrive into project-affected communities; the PIIM will also identify requirements for: • Monitoring effects of in-migration and demographic change. • Monitoring relations between communities and in-migrants. • Education of project workers and local communities on impacts related to in-migration.	Local recruitment process; Settlements developing around or near camp.	Zero unplanned settlements.	Monthly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, DWRM, district environment officers, PAU, NFA and MGLSD

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Treatment and disposal of known/unknown contamination	Flora and fauna species of conservation importance (terrestrial and aquatic)	Injury or mortality of flora and fauna due to mobilisation of soil contaminants	Pollution prevention plan	The storage of hazardous materials will be restricted to designated hazardous materials storage areas at least 50 m from any wetlands, surface watercourse or seasonal water channel. Such storage locations will be subject to site-specific environmental and social risk assessment that will inform site selection and the adoption of any additional mitigation measures. Storage areas for hazardous materials will be bunded (no drainage valves/holes), have impermeable floor and will be covered to minimise the ingress of rainwater. A refuelling procedure will be developed and implemented which will include but not be limited to: • details of mobile and static refuelling areas and equipment (e.g. impermeable drip trays) • regulatory / GIIP constraints of refuelling operations to sensitive environmental receptors • spill prevention measures • training on refuelling procedures. Areas of surface contamination identified prior to construction within the project footprint will be remediated before or during project construction. Where clean-up of pre-existing contaminated land is required, a remediation proposal will be implemented including but not limited to: • remediation techniques • the clean-up standard to be achieved • monitoring and analysis of remediated land to be undertaken • all regulatory and project documentation requirements • appropriate environmental and occupational health and safety protection measures to be adopted. All clean-up and remediation activities will be adequately documented. Contaminated material storage areas will be provided with containment measures (e.g., bunds, ditches, impermeable base membranes and covers) to prevent runoff and airborne losses.	Waste disposal and handling methods on project sites; Site verification and records demonstrating that hazardous materials are handled, managed and stored according to the pollution prevention plan and waste management plan.	Zero noncompliance with pollution prevention plan and waste management plan.	Site verification daily when contaminated soils are discovered. Quarterly to review documentation.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, DWRM, district environment officers, PAU and WMD

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Disposal of solid and liquid waste	Flora and fauna species of conservation importance (terrestrial and aquatic)	Mortality of flora and fauna through contamination of food and water supply	Pollution prevention plan Waste management plan	The storage of hazardous materials will be restricted to designated hazardous materials storage areas at least 50 m from any wetlands, surface watercourse or seasonal water channel. Such storage locations will be subject to site-specific environmental and social risk assessment that will inform site selection and the adoption of any additional mitigation measures. Storage areas for hazardous materials will be bunded (no drainage valves/holes), have impermeable floor and will be covered to minimise the ingress of rainwater. A refuelling procedure will be developed and implemented which will include but not be limited to: • details of mobile and static refuelling areas and equipment (e.g. impermeable drip trays) • regulatory / GIIP constraints of refuelling operations to sensitive environmental receptors • spill prevention measures • training on refuelling procedures. Areas of surface contamination identified prior to construction within the project footprint will be remediated before or during project construction. Where cleanup of pre-existing contaminated land is required, a remediation proposal will be implemented including but not limited to: • remediation techniques • the clean-up standard to be achieved • monitoring and analysis of remediated land to be undertaken • all regulatory and project documentation requirements • appropriate environmental and occupational health and safety protection measures to be adopted. All clean-up and remediation activities will be adequately documented. Contaminated material storage areas will be provided with containment measures (e.g., bunds, ditches, impermeable base membranes and covers) to prevent runoff and airborne losses.	Littering of solid waste. Spillage of liquid waste. Site verification and records demonstrating that hazardous materials are handled, managed and stored according to the pollution prevention plan and waste management plan.	Zero noncompliance with pollution prevention plan and waste management plan.	Daily during wet river crossings. Twice weekly for all other work areas.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, DWRM, district environment officers, PAU and MAAIF

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Disposal of solid and liquid waste	Flora and fauna species of conservation importance (terrestrial and aquatic)	Increase in vermin around waste storage and consequent increase in prey availability for carnivorous birds and mammals	Occupational health, safety and security plan Pollution prevention plan Waste management plan	Provision of food to workers will be planned to cater for workforce requirements and therefore minimise food waste as far as possible. As part of the OHSSP, a pest control plan will be developed for implementation on construction camp.	Waste disposal and handling methods on project sites; Documentation demonstrating that project activities are in compliance with the waste management plan and pollution prevention plan Site verification	Zero noncompliance with the pollution prevention plan and waste management plan	Weekly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, DWRM, district environment officers, PAU and MAAIF

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Disposal of solid and liquid waste	Flora and fauna species of conservation importance (terrestrial and aquatic)	Stress or mortality to flora and fauna from spills of waste	Pollution prevention plan Waste management plan	A spill response procedure based on Tier 1, 2 and 3 spill responsibilities defined in the Emergency Preparedness and Response Plan will be developed together with other responsible parties, and the necessary equipment and resources will be procured to implement it. The procedure will cover: • responses for any unintended or unauthorised release of a potentially hazardous material, identification of locations where spill response equipment and resources will be provided, and procedures for its deployment • contact details for the rapid response team and spill response organisation • notification requirements. All Tier 1, 2 and 3 spills will be reported in accordance with the project incident reporting system. In the event of a spillage of hazardous materials the following actions will take place: • A trained rapid response team will be mobilised • Spill response personnel and equipment will be provided to contain, clean-up and remediate (Tier 1 spills). A wider range of resources will be utilised to contain, clean-up and remediate Tier 2 and Tier 3 spills. The storage of hazardous materials will be restricted to designated hazardous materials storage areas at least 50 m from any wetlands, surface watercourse or seasonal water channel. Such storage locations will be subject to site-specific environmental and social risk assessment that will inform site selection and the adoption of any additional mitigation measures. Storage areas for hazardous materials will be bunded (no drainage valves/holes), have impermeable floor and will be covered to minimise the ingress of rainwater.	Waste disposal and handling methods on project sites; Effectiveness of oil spill equipment; Documentation demonstrating that project activities are in compliance with the waste management plan and pollution prevention plan Site verification	Zero noncompliance with the pollution prevention plan and waste management plan	Weekly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, DWRM, district environment officers, PAU and OPM (Disaster Preparedness)

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Disposal of surplus water from working areas and hydrotest water	Flora and fauna species of conservation importance (terrestrial and aquatic)	Reduced primary productivity in watercourses, smothering of invertebrates, lethal or sublethal effects on fish, degradation of spawning habitat	Pollution prevention plan Waste management plan	As a requirement of the PPP, locations for discharging excavated pipeline trench water will be identified as part of a 'Permit to Pump Procedure' which will be implemented during the construction phase. Appropriate sediment control measures in line with recognised industry best practices will be implemented at each location. Surface water run-off from construction areas and AGI will be discharged in accordance with project environmental standards. All licences and consents for hydrostatic test water discharge will be obtained following preparation of a hydrostatic test effluent disposal risk assessment. This will undergo internal technical evaluation before submitting the permit application to the appropriate water resources regulatory authority.	Quality of discharge water; Documentation demonstrating that project activities are in compliance with the waste management plan and pollution prevention plan Site verification	Zero noncompliance with the pollution prevention plan and waste management plan and waste water discharge permit requirements	Weekly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, DWRM, district environment officers, PAU, MAAIF and WMD
Impeded flow of river or channel	Flora and fauna species of conservation importance (terrestrial and aquatic)	Restriction of fish (ranging from general fish species (nonmigratory) to potamodromous fish) movement and reduced reproductive success, impaired movement and reduced habitat suitability of other aquatic organisms	Biodiversity management plan Natural resource management plan	During open-cut watercourse crossing activities, bank and bed material will be segregated, stored away from the active channels, and not be placed where flow or drainage will be obstructed. If temporary damming of a watercourse is required, a preconstruction engineering, social and environmental evaluation will be undertaken to plan the work and so the duration of the flow interruption is limited and to determine the need for pump around to maintain flows.	Natural drainage patterns, particularly streams and rivers; Documentation identifying that a Watercourse Crossing Plan has been approved (for crossings when watercourses are flowing) Compliance with Watercourse Crossing Plan	Zero noncompliance with Watercourse Crossing Plan	Daily during watercourse crossing and reinstatement construction activities	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, DWRM, district environment officers and MAAIF

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Abstraction of water from river or channel	Flora and fauna species of conservation importance (terrestrial and aquatic)	Decreased water level due to water abstraction for project use leading to loss of aquatic and water-margin habitats causing reduced spawning activity	Biodiversity management plan Natural resource management plan	Where water is abstracted from a surface waterbody, the flow, water level or water volume in the waterbody will be assessed before and during abstraction. Abstraction rates and the frequency of assessment of the water flow, level or volume will be monitored based on permit conditions. During abstraction from surface waters, inlet hoses will be fitted with suitably sized fish screens.	Volumes of water abstracted; Documentation (reports, checklists, etc) demonstrating that water-use checks have occurred and are within permit conditions.	Zero noncompliance with water abstraction permit or the Natural Resource Management Plan.	Weekly during water abstraction activities.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, DWRM, WMD, district environment officers and MAAIF
Abstraction of water from river or channel	Flora and fauna species of conservation importance (terrestrial and aquatic)	Mortality to aquatic organisms from the river through direct abstraction	Natural resource management plan	If dams and pumps are used to maintain water flow during the construction of watercourse crossings or abstraction of water from watercourses is required, fish screens will be used on the end of the pump inlet hose. Any fish caught within dammed areas either side of the crossing will be transferred up or downstream as appropriate by suitably experienced personnel. Where water is abstracted from a surface waterbody, the flow, water level or water volume in the waterbody will be assessed before and during abstraction. Abstraction rates and the frequency of assessment of the water flow, level or volume will be monitored based on permit conditions. During abstraction from surface waters, inlet hoses will be fitted with suitably sized fish screens.	Use of meshes, screens or fish guards during water abstraction	Zero incidence of abstraction without suitably sized fish guards.	Weekly during water abstraction activities.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, DWRM, WMD, district environment officers and MAAIF

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Management of black and grey water	Flora and fauna species of conservation importance (terrestrial and aquatic)	Injury or mortality of flora and fauna due to surface water contamination	Natural resource management plan Waste management plan	The grey water stream will be separated from black water (e.g. sewage), treated and either reused (e.g., for toilet flushing, dust suppression) or discharged, in accordance with the environment project standards and national environmental guidance and regulations. All wastewater discharges will comply with permit conditions and the project environmental standards. An environmental and social evaluation of potential treated wastewater discharge locations will be undertaken as the basis for the development of measures to mitigate impacts from discharges on surface water ecology, downstream water users or terrestrial ecology. The evaluations will take into account the compliance with project environmental standards and will support applications for discharge permits. All licences and consents will be obtained before planned liquid discharges. Treated sewage effluent which is not reused will be preferentially discharged to land. Before any discharge, the soil permeability will be evaluated, and engineered soakaways will be constructed, where required, to avoid impacts on land, surface water drainage and groundwater.	Disposal locations of treated effluent. Effectiveness of waste water treatment plant/process; Quality of discharge effluent before disposal on land Documentation to support treated wastewater (to be disposed of) meets the relevant waste water discharge standards.	Zero noncompliance with statutory limits.	Monthly or as per permit conditions	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, DWRM, WMD and district environment officers
Abstraction of groundwater	Flora and fauna species of conservation importance (terrestrial and aquatic)	Decreased water level due to water abstraction for project use leading to loss of habitat for stygofauna	Natural resource management plan	Where water is abstracted from a surface waterbody, the flow, water level or water volume in the waterbody will be assessed before and during abstraction. Abstraction rates and the frequency of assessment of the water flow, level or volume will be monitored based on permit conditions. During abstraction from surface waters, inlet hoses will be fitted with suitably sized fish screens.	Water abstraction is as per the permit conditions and Natural Resource Management Plan.	Zero noncompliance with the Natural Resource Management Plan and abstraction permit requirements.	Monthly - site verification of Natural Resource Management Plan Water abstraction monitoring as per permit requirement	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, DWRM, WMD and district environment officers

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Loss of habitat for species of conservation importance	Flora and fauna species of conservation importance (terrestrial and aquatic)	Permanent loss of breeding and foraging habitat for fauna through site clearance before construction	Biodiversity management plan	Preconstruction biodiversity surveys will be undertaken at locations identified in the baseline appendices of the environmental and social impact assessment to record details of habitats and species of conservation importance within the working areas. This information will be used to produce site specific biodiversity management plans that will identify fine-scale route changes (where feasible), mark features for retention and protection, develop biorestoration measures including seed collection, translocation and species propagation and provide details of the specific mitigation measures (such as seasonal construction restrictions) to be implemented to reduce impacts on biodiversity during construction. As part of the Biodiversity Management plan a vegetation removal method statement to reduce impacts on biodiversity will be developed. This will include but not be limited to measures such as: • directional felling of trees on land inside the RoW • avoiding damage to trees outside the RoW • identifying areas where strimming, coppicing or other works will be undertaken in advance of clearing. A biodiversity survey strategy will be developed to include timings and methods of surveys to be undertaken, including but not limited to: • supplemental preconstruction flora and fauna surveys • supplemental preconstruction biodiversity surveys of pre identified species of conservation concern • a biodiversity assessment of watercourses and wetlands • an assessment of fish spawning habitat at open-cut river crossings where the watercourse crossing is planned to occur during the fish-spawning season and International Union for Conservation of Nature or Red Data Book species are known or likely to occur • preconstruction checks on the RoW. Ways to achieve an increasing trend in vegetation regrowth and diversity of desired species, specifically species composition and, plant species that support forage, refuge and nesting for species of conservation importance, in reinstated areas will be sought, with reference to nearby areas undisturbed by project activities. The re-establishment of vegetation will be monitored following reinstatement until long term re-vegetation targets have been reached.	Conducting of pre-clearance surveys; Extent of site clearance for construction ROW; Change in extent and state of the habitats; Documentation (reports, checklists, etc) demonstrating that supplementary preclearance surveys have been completed; and site-specific biodiversity management plans have been drafted and implemented where necessary	Comprehensive data records from supplementary preconstruction surveys Compliance with site-specific management plans	Minimum of 7 days before soil stripping commences for preclearance surveys. There-after weekly until sites are reinstated for compliance with biodiversity management plan; there-after monthly until sites are fully restored.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, DWRM, WMD, district environment officers and MAAIF

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Loss of habitat for species of conservation importance	Flora and fauna species of conservation importance (terrestrial and aquatic)	Temporary loss of breeding and foraging habitat for fauna through site clearance before construction	Biodiversity management plan	Preconstruction biodiversity surveys will be undertaken at locations identified in the baseline appendices of the environmental and social impact assessment to record details of habitats and species of conservation importance within the working areas. This information will be used to produce site specific biodiversity management plans that will identify fine-scale route changes (where feasible), mark features for retention and protection, develop biorestoration measures including seed collection, translocation and species propagation and provide details of the specific mitigation measures (such as seasonal construction restrictions) to be implemented to reduce impacts on biodiversity during construction. As part of the Biodiversity Management plan a vegetation removal method statement to reduce impacts on biodiversity will be developed. This will include but not be limited to measures such as: • directional felling of trees on land inside the RoW • avoiding damage to trees outside the RoW • identifying areas where strimming, coppicing or other works will be undertaken in advance of clearing. A biodiversity survey strategy will be developed to include timings and methods of surveys to be undertaken, including but not limited to: • supplemental preconstruction flora and fauna surveys • supplemental preconstruction biodiversity surveys of pre identified species of conservation concern • a biodiversity assessment of watercourses and wetlands • an assessment of fish spawning habitat at open-cut river crossings where the watercourse crossing is planned to occur during the fish-spawning season and International Union for Conservation of Nature or Red Data Book species are known or likely to occur • preconstruction checks on the RoW. Ways to achieve an increasing trend in vegetation regrowth and diversity of desired species, specifically species composition and, plant species that support forage, refuge and nesting for species of conservation importance, in reinstated areas will be sought, with reference to nearby areas undisturbed by project activities. The re-establishment of vegetation will be monitored following reinstatement until long term re-vegetation targets have been reached.	Extent of site clearance for construction ROW; Documentation (reports, checklists, etc) demonstrating that supplementary preclearance surveys have been completed; and site-specific biodiversity management plans have been drafted and implemented where necessary	Comprehensive data records from supplementary preconstruction surveys Compliance with site-specific management plans	Minimum of 7 days before soil stripping commences for preclearance surveys. There-after weekly until sites are reinstated for compliance with biodiversity management plan; there-after monthly until sites are fully restored.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, DWRM, WMD, district environment officers and MAAIF

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Loss of habitat for species of conservation importance	Flora and fauna species of conservation importance (terrestrial and aquatic)	Temporary habitat fragmentation causing disrupted species movement during construction of RoW	Biodiversity management plan	The total duration of construction disturbance (i.e. the time between initial site clearing and final reinstatement/biorestoration) will be minimised.	Adherence to work schedule, particularly in sensitive locations; Documentation demonstrating that the duration of disturbance is minimised.	Disturbance limited to a single growing season.	Quarterly.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, DWRM, WMD, district environment officers and MAAIF
Introduction of competitive species or plants/animal diseases	Flora and fauna species of conservation importance (terrestrial and aquatic)	Modified habitats due to non-native species establishment leading to increased competition and loss of habitat for breeding and foraging	Biodiversity management plan	Biosecurity measures will be developed and implemented that will include a strategy for weed and pest control and measures to prevent the introduction or spread of alien invasive species on the RoW, work sites and camp facilities. The biosecurity measures will also outline specifics to protect the aquatic environment from alien invasive species.	Visual inspection for incidence of alien invasive species. including; Changes in the extent and density of previously existing alien/invasive species populations; Occurrence of alien/invasive species attributed to the Project; Occurrences of newly introduced alien/invasive species. Documentation supporting that the biosecurity measures are implemented.	Zero noncompliance with the Biodiversity Management Plan.	Weekly.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, DWRM, WMD and district environment officers

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Disturbance or harm to wildlife	Flora and fauna species of conservation importance (terrestrial and aquatic)	Increased predation owing to removal of habitat used to shelter and forage	Biodiversity management plan Labour management plan Community health, safety and security plan Stakeholder engagement plan	Preconstruction biodiversity surveys will be undertaken at locations identified in the baseline appendices of the environmental and social impact assessment to record details of habitats and species of conservation importance within the working areas. This information will be used to produce site specific biodiversity management plans that will identify fine-scale route changes (where feasible), mark features for retention and protection, develop biorestoration measures including seed collection, translocation and species propagation and provide details of the specific mitigation measures (such as seasonal construction restrictions) to be implemented to reduce impacts on biodiversity during construction. As part of the Biodiversity Management plan a vegetation removal method statement to reduce impacts on biodiversity will be developed. This will include but not be limited to measures such as: • directional felling of trees on land inside the RoW • avoiding damage to trees outside the RoW • identifying areas where strimming, coppicing or other works will be undertaken in advance of clearing. Where a section of the RoW is through habitats with high biodiversity value (as identified in the baseline appendices of the environmental and social impact assessment), the area will be reviewed to determine if the working width can be reduced to limit impacts as much as possible. A strategy for tree removal and replanting will be developed; the strategy will consider: • where trees are to be removed, the species and size/age of trees that will be recorded prior to removal; data to be recorded includes: trunk diameter at chest height, number of each species, species and, location • the number of trees and species to be removed during construction • conservation value of the species to be removed • variety of species to be replanted • provenance of species used for replanting • the region-specific environmental characteristics influencing replanting success. Preconstruction surveys will be referred to when deciding suitable locations for replanting of translocated species or species planted to compensate for those removed during construction.	Adherence to work schedule, particularly in sensitive locations; Conducting of pre-clearance surveys; Extent of site clearance for construction ROW; Documentation (reports, checklists, etc) demonstrating that supplementary preclearance surveys have been completed; and site-specific biodiversity management plans have been drafted and implemented where necessary	Comprehensive data records from supplementary preconstruction surveys Compliance with site-specific management plans	Minimum of 7 days before soil stripping commences for preclearance surveys. There-after weekly until sites are reinstated for compliance with biodiversity management plan; there-after monthly until sites are fully restored.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, DWRM, WMD, district environment officers and MAAIF

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Disturbance or harm to wildlife	Flora and fauna species of conservation importance (terrestrial and aquatic)	Increased gathering of flora and hunting of fauna species of conservation importance from PIIM to construction camp, from improved access along new or upgraded project access roads and access provided by RoW during construction and reinstatement.	Project induced in-migration management plan	Hunting, fishing, unauthorised gathering of products (including plants and firewood) and deliberate disturbance or harassment of fauna will be prohibited for project personnel. The Project will restrict the purchase of wildlife related products and crafts by project workers. Construction camp will be designated as having "closed" status to prevent interactions between the workforce and PACs and prevent the spread of communicable disease. Policies will be developed to manage transgressions within the project disciplinary procedures and structures. A public awareness programme to communicate employment and training opportunities will be implemented that includes but is not limited to: • The local recruitment strategy. • Criteria for employment. • The number and types of employment opportunities. • The procedure for applying for employment. Information will be disseminated publicly, including via media announcements at regional and national levels and during public meetings in PACs. Care will be taken to reach women and vulnerable groups if necessary through targeted meetings scheduled at times and locations that may increase women's participation A PIIMP will aim to reduce the number of people that arrive into project-affected communities; the PIIM will also identify requirements for: • Monitoring effects of in-migration and demographic change. • Monitoring relations between communities and in-migrants. • Education of project workers and local communities on impacts related to in-migration. Local communities will be discouraged from using the RoW as an access road during construction through signage, awareness raising and the use of communication materials.	Local recruitment process; Project supply chain; Training records that specifically target hunting and gathering. Settlements developing around or near camp. Effective messaging to PACs (stakeholder engagement records).	Total coverage of all personnel living in camp. Zero unplanned settlements.	Monthly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, DWRM, WMD, district environment officers MAAIF and NFA

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Open excavations	Flora and fauna species of conservation importance (terrestrial and aquatic)	Injury or fatality of fauna from falling into excavations	Biodiversity management plan	Appropriate measures will be implemented to prevent fauna or people from entering welded pipe sections or open excavations; there will be fauna ladders placed at suitable intervals in all open excavations. Animals will be removed safely and released into suitable habitat away from the working area. The maximum length of open trench at any one time (per spread) will be defined based on: • the habitats present and potential ecological sensitivities (e.g., terrestrial commuting routes for large mammals) • community safety. Gaps will also be left in soil stacks and pipe strings at strategic locations to allow passage of animals where it is considered safe to do so.	Location and length of open excavations. Location and number of faunal ladders. Incidents of fauna trapped in excavations; Documentation (reports, checklists, etc) demonstrating that appropriate risk assessment has been implemented.	Zero injury or death of animals in excavations.	Daily	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, DWRM, WMD and district environment officers
Disturbance or harm to wildlife	Flora and fauna species of conservation importance (terrestrial and aquatic)	Disturbance from activities causing noise, vibration, human and vehicle activity affecting breeding and behaviour of animals	Pollution prevention plan Biodiversity management plan Community health, safety and security plan Occupational health, safety and security plan Project induced in-migration management plan Transport and road safety management plan	Project noise emissions will not result in an exceedance of PES or national legislative noise criteria at any existing sensitive receptor site. Potential noise and vibration impacts will be assessed where piling is to be undertaken close to sensitive receptors. Where possible, alternative techniques or materials will be used to reduce potential impacts, e.g. restrictions on times and duration in any given day that piling activities are undertaken. To minimise emissions to air, vehicles, machines and equipment will: • be appropriate for the task required • have a valid maintenance and inspection certificate or log books • be allocated a unique identifier to be used in a maintenance log • be maintained regularly in accordance with the manufacturer's recommendations to maximise fuel efficiency and help reduce emissions • not be allowed to idle – engines will be switched off when not in use. The total duration of construction disturbance (i.e. the time between initial site clearing and final reinstatement/biorestoration) will be minimised. Vehicle movements will be restricted to defined access routes and demarcated working areas (unless in the event of an emergency). Construction camp will be designated as having “closed” status to prevent interactions between the workforce and PACs and prevent the spread of communicable disease. Policies will be developed to manage transgressions within the project disciplinary procedures and structures	Noise levels at sensitive receptors; field verification. Maintenance records of vehicles and equipment. Documentation demonstrating that the duration of disturbance is minimised. Journey management with regard to defined routes. Speed infringements and effective corrective action.	Zero exceedance of project environmental standards. Disturbance limited to a single growing season. Zero noncompliance with journey management. Decreasing trend of speed infringements.	Weekly for noise level monitoring at sensitive receptors. Monthly for maintenance records. Quarterly for documentation. Monthly for journey management records; daily during intense transport activities (pipe), weekly for people movement. Monthly for speed infringements.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, DWRM, WMD, district environment officers and MAAIF

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Use of raw materials and natural resources	Soil	Depletion of natural resources, for example, aggregate	Waste management plan Natural resource. management plan	All excavated materials will be screened and reused where possible to reduce the need for newly quarried aggregates. Any new aggregate extraction sites and batching plants sites, including 3rd party sites, will undergo environmental and social evaluation prior to use; and, where possible, new sites will be located as close as possible to the existing road network to reduce the requirement for new access roads.	Reuse of aggregate. Environmental and social evaluation for new aggregate extraction sites.	Zero aggregate not reused. Approved environmental and social evaluation of all new aggregate extraction sites.	Monthly for reuse of aggregate. 30 days before the opening of new aggregate extraction sites for evaluations.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, PAU and district environment officers
Soil compaction	Soil	Anaerobic conditions developing that restrict plant nutrient uptake efficiency and root development Loss of drainage capacity and poor plant establishment causing increased surface water ponding, runoff, soil erosion and decreased productivity	Soil management plan Community health, safety and security plan	Load-bearing/ ground protection materials, such as bog mats and geotextile membranes under temporary haul roads, will be used to support heavy loads in areas of soft ground, including wetland areas. Local communities will be discouraged from using the RoW as an access road during construction through signage, awareness raising and the use of communication materials. Topsoil and subsoil stockpiles will be stored in accordance with the Soil Management Plan, be free draining and include gaps left in strategic locations to allow potential floodwater through. • If topsoil is stored for more than six months, the stacks will be monitored for: • the presence of weeds, which will be controlled in accordance with the weed and pest control programme • compaction and erosion – corrective measures will be implemented if either is identified. Reinstatement will be undertaken as early as practicable following completion of construction activities in any RoW section or site.	Compressed soil; driving, parking and or storage of machinery, equipment or materials on reinstated RoW.	Zero noncompliance with the Soil Management Plan	Weekly after reinstatement until vegetation is re-established	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, WMD, PAU and district environment officers

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Soil erosion	Soil	Loss of topsoil causing reduced fertility and impaired reinstatement	Soil management plan Community health, safety and security plan	Load-bearing/ ground protection materials, such as bog mats and geotextile membranes under temporary haul roads, will be used to support heavy loads in areas of soft ground, including wetland areas. Local communities will be discouraged from using the RoW as an access road during construction through signage, awareness raising and the use of communication materials. Topsoil and subsoil stockpiles will be stored in accordance with the Soil Management Plan, be free draining and include gaps left in strategic locations to allow potential floodwater through. If topsoil is stored for more than six months, the stacks will be monitored for: • the presence of weeds, which will be controlled in accordance with the weed and pest control programme • compaction and erosion – corrective measures will be implemented if either is identified. Reinstatement will be undertaken as early as practicable following completion of construction activities in any RoW section or site.	Rills or gullies on topsoil stacks and or reinstated areas	No visible signs of erosion	Weekly until vegetation is established in reinstated areas	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, PAU, and district environment officers
Loss of soil structure, fertility and seed bank	Soil	Development of anaerobic conditions in stored soil Mixing of different soil or soil with foreign materials leading to loss of drainage and fertility	Soil management plan	Topsoil and subsoil stockpiles will be stored in accordance with the Soil Management Plan, be free draining and include gaps left in strategic locations to allow potential floodwater through. If topsoil is stored for more than six months, the stacks will be monitored for: • the presence of weeds, which will be controlled in accordance with the weed and pest control programme • compaction and erosion – corrective measures will be implemented if either is identified. Reinstatement will be undertaken as early as practicable following completion of construction activities in any ROW section or site.	Compliance with soil management plan. Topsoil storage longer than 6 months; corrective measures implemented. Separate topsoil and subsoil stacks	Zero noncompliance with the Soil Management Plan	Weekly during period between stripping and reinstatement.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, PAU and district environment officers

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Disturbance, treatment and management of contamination	Soil	Mobilisation of soil contaminants	Pollution prevention plan Reinstatement plan	The storage of hazardous materials will be restricted to designated hazardous materials storage areas at least 50 m from any wetlands, surface watercourse or seasonal water channel. Such storage locations will be subject to site-specific environmental and social risk assessment that will inform site selection and the adoption of any additional mitigation measures. Storage areas for hazardous materials will be bunded (no drainage valves/holes), have impermeable floor and will be covered to minimise the ingress of rainwater. A refuelling procedure will be developed and implemented which will include but not be limited to: • details of mobile and static refuelling areas and equipment (e.g. impermeable drip trays) • regulatory/GIIP constraints of refuelling operations to sensitive environmental receptors • spill prevention measures • training on refuelling procedures. Areas of surface contamination identified prior to construction within the project footprint will be remediated before or during project construction. Where clean-up of pre-existing contaminated land is required, a remediation proposal will be implemented including but not limited to: • remediation techniques • the clean-up standard to be achieved • monitoring and analysis of remediated land to be undertaken • all regulatory and project documentation requirements • appropriate environmental and occupational health and safety protection measures to be adopted. All clean-up and remediation activities will be adequately documented. Contaminated material storage areas will be provided with containment measures (e.g., bunds, ditches, impermeable base membranes and covers) to prevent runoff and airborne losses.	Waste disposal and handling methods on project sites; Site verification and records demonstrating that hazardous materials are handled, managed and stored according to the pollution prevention plan and reinstatement plan.	Zero noncompliance with pollution prevention plan and reinstatement plan.	Daily during wet river crossings. Twice weekly for all other work areas.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, PAU, WMD, DWRM, and district environment officers

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Management of waste and accidental release of oil or chemicals	Soil	Soil contamination	Pollution prevention plan Waste management plan	A spill response procedure based on Tier 1, 2 and 3 spill responsibilities defined in the Emergency Preparedness and Response Plan will be developed together with other responsible parties, and the necessary equipment and resources will be procured to implement it. The procedure will cover: • responses for any unintended or unauthorised release of a potentially hazardous material, identification of locations where spill response equipment and resources will be provided, and procedures for its deployment • contact details for the rapid response team and spill response organisation • notification requirements. All Tier 1, 2 and 3 spills will be reported in accordance with the project incident reporting system. In the event of a spillage of hazardous materials the following actions will take place: • A trained rapid response team will be mobilised • Spill response personnel and equipment will be provided to contain, clean-up and remediate (Tier 1 spills). A wider range of resources will be utilised to contain, clean-up and remediate Tier 2 and Tier 3 spills. The storage of hazardous materials will be restricted to designated hazardous materials storage areas at least 50 m from any wetlands, surface watercourse or seasonal water channel. Such storage locations will be subject to site-specific environmental and social risk assessment that will inform site selection and the adoption of any additional mitigation measures. Storage areas for hazardous materials will be bunded (no drainage valves/holes), have impermeable floor and will be covered to minimise the ingress of rainwater. A refuelling procedure will be developed and implemented which will include but not be limited to: • details of mobile and static refuelling areas and equipment (e.g. impermeable drip trays) • regulatory / GIIP constraints of refuelling operations to sensitive environmental receptors • spill prevention measures • training on refuelling procedures.	Waste disposal and handling methods on project sites; storage of oil, chemicals and hazardous materials; Site verification and records demonstrating that hazardous materials are handled, managed and stored according to the pollution prevention plan and waste management plan.	Zero noncompliance with pollution prevention plan and waste management plan.	Daily during wet river crossings. Twice weekly for all other work areas.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, PAU, district environment officers and OPM (Disaster Preparedness)

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Management of surplus subsoil and aggregate	Soil	Loss of soil structure, drainage, fertility and seed bank	Waste management plan	Environmental and social evaluations will be undertaken to identify suitable offsite disposal sites for waste soil and rock, and appropriate management measures to be implemented. All temporary borrow pits and soil and rock disposal sites will be reinstated, unless instructed otherwise by the regulatory authorities, in accordance with pre-entry agreements with landowner and location-specific reinstatement plans will be prepared and implemented. Options will be considered for the use of surplus rock from blasting including: • crushing and onsite re-use • offsite re-use • offsite disposal • onsite placement. • if this is in keeping with the local landscape character.	Presence of excess soil / rock remaining on site immediately after reinstatement is completed	Zero noncompliance with the waste management plan.	Immediately after reinstatement Weekly until all excess soil is removed, reused and or disposed of	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, PAU and district environment officers

Erosion	Surface water	Erosion of river or channel banks, scour, sediment contamination of surface waters	Soil management plan Reinstatement plan	During open-cut watercourse crossing activities, bank and bed material will be segregated, stored away from the active channels, and not be placed where flow or drainage will be obstructed. As much riparian vegetation as possible will be left in place until immediately before a watercourse crossing needs to be made to maintain stability of the banks. During site preparation, the height of vegetation on the riverbanks will be reduced, but roots will not be disturbed, to dissuade animals from nesting. The vegetation will then be removed when the crossing is made and the area reinstated as quickly as possible. Where watercourse bank reinforcement is required, the impact on riparian habitats and riparian fauna will be assessed to determine if the reinstatement or reinforcement is sufficient to maintain connectivity along the riparian elements of the watercourse. Mitigation will be installed to maintain habitat connectivity. A strategy for tree removal and replanting will be developed; the strategy will consider: • where trees are to be removed, the species and size/age of trees that will be recorded prior to removal; data to be recorded includes: trunk diameter at chest height, number of each species, species and, location • the number of trees and species to be removed during construction • conservation value of the species to be removed • variety of species to be replanted • provenance of species used for replanting • the region-specific environmental characteristics influencing replanting success. Preconstruction surveys will be referred to when deciding suitable locations for replanting of translocated species or species planted to compensate for those removed during construction. Site specific erosion risk assessments will be completed by a qualified fluvial geomorphologist or soil scientist as appropriate; the information will be used to prepare a soil management plan and a reinstatement plan prior to construction. Erosion control measures will include but not be limited to: • consideration of information from preconstruction surveys • locations where soil compaction may result in increased sediment laden runoff to watercourses and waterbodies • details on construction through soft ground, considering the use of load-bearing materials to support heavy loads in soft ground • measures for working in areas of fragile and sensitive soils • restrictions to the storage of materials on steep slopes • provision for erosion and sediment control at watercourses.	Visual evidence of erosion of river banks and bank stability (cracks, sag, shearing) within 50m up and down stream of construction activities. Visual evidence of significant sedimentation (water colour, turbidity) greater than 50 m of construction activity.	Zero incidence of sedimentation greater than 50 m up- or downstream of crossings during construction Zero incidence of collapsed banks after reinstatement	Weekly after reinstatement until vegetation is re-established	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, PAU, district environment officers, DWRM, WMD, NFA and UWA

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Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
				Location-specific method statements will be produced for watercourse crossing construction. These method statements will incorporate plans for: • erosion control • sediment control • maintaining environmental base flows downstream of water crossings for example by using measures such as pumping, channel diversions and fluming • notifying fisherfolk as appropriate • reinstatement • spill response equipment.				

Management of waste and accidental release of oil or chemicals	Surface water	Contamination of surface water	Soil management plan Reinstatement plan Waste management plan	The storage of hazardous materials will be restricted to designated hazardous materials storage areas at least 50 m from any wetlands, surface watercourse or seasonal water channel. Such storage locations will be subject to site-specific environmental and social risk assessment that will inform site selection and the adoption of any additional mitigation measures. Storage areas for hazardous materials will be bunded (no drainage valves/holes), have impermeable floor and will be covered to minimise the ingress of rainwater. A refuelling procedure will be developed and implemented which will include but not be limited to: • details of mobile and static refuelling areas and equipment (e.g. impermeable drip trays) • regulatory / GIIP constraints of refuelling operations to sensitive environmental receptors • spill prevention measures • training on refuelling procedures. The grey water stream will be separated from black water (e.g. sewage), treated and either reused (e.g., for toilet flushing, dust suppression) or discharged, in accordance with the environment project standards and national environmental guidance and regulations. All wastewater discharges will comply with permit conditions and the project environmental standards. An industry-recognised manufactured grease trap will be installed at the outlet of the kitchen(s) facilities to prevent greases and fats from entering the grey water streams. Treated sewage effluent which is not reused will be preferentially discharged to land. Before any discharge, the soil permeability will be evaluated, and engineered soakaways will be constructed, where required, to avoid impacts on land, surface water drainage and groundwater. A spill response procedure based on Tier 1, 2 and 3 spill responsibilities defined in the Emergency Preparedness and Response Plan will be developed together with other responsible parties, and the necessary equipment and resources will be procured to implement it. The procedure will cover: • responses for any unintended or unauthorised release of a potentially hazardous material, identification of locations where spill response equipment and resources will be provided, and procedures for its deployment • contact details for the rapid response team and spill response organisation • notification requirements. All Tier 1, 2 and 3 spills will be reported in accordance with the project incident reporting system. In the event of a spillage of hazardous materials the following actions will take place: • A trained rapid response team will be mobilised	Waste disposal and handling methods on project sites; storage of oil, chemicals and hazardous materials; Documentation demonstrating that project activities are in compliance with the soil management plan, reinstatement plan and waste management plan Site verification	Zero noncompliance with the soil management plan, reinstatement plan and waste management plan	Weekly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, PAU, district environment officers, DWRM and WMD

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Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
				• Spill response personnel and equipment will be provided to contain, clean-up and remediate (Tier 1 spills). A wider range of resources will be utilised to contain, clean-up and remediate Tier 2 and Tier 3 spills.				
Impeded flow of river or channel	Surface water	Deterioration of water quality	Biodiversity management plan Soil management plan Pollution prevention plan	During open-cut watercourse crossing activities, bank and bed material will be segregated, stored away from the active channels, and not be placed where flow or drainage will be obstructed. Open-cut river crossings will be undertaken during the dry season where possible; where not possible site-specific method statements will be developed addressing ecological sensitivities. Location-specific method statements will be produced for watercourse crossing construction. These method statements will incorporate plans for: • erosion control • sediment control • maintaining environmental base flows downstream of water crossings for example by using measures such as pumping, channel diversions and fluming • notifying fisherfolk as appropriate • reinstatement • spill response equipment. Other than when required for crossings excavations, construction equipment and traffic will normally not enter watercourses. Vehicles and equipment will cross watercourses via appropriately sized temporary culverts and bridging arrangements. Bathing or washing clothes, vehicles and equipment by project employees will be prohibited in watercourses.	Separate storage of bank and bed material during crossings. River crossing method statements developed for wet crossings. Bank and bed material is stored separately away from water flow. Vehicles and machinery entering water courses.	Zero incidence of sedimentation above background levels greater than 50 m up- or downstream of crossings during construction. Zero incidence of sediment loaded surface water run-off entering water-courses (causing sediment load above background levels) from the RoW. Zero noncompliance with crossing method statement, soil management plan and reinstatement plan. Zero incidence of vehicles and machinery in water-courses other than during crossings.	Daily during watercourse crossing and reinstatement activities. Weekly spot checks of watercourses along defined travel routes.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, PAU, district environment officers, DWRM and WMD
Altered drainage pattern	Surface water	Trench can act as conduit for groundwater, draining higher areas and flooding lower areas	Reinstatement plan	Trench breakers will be installed in the pipeline trench where downhill flow within the backfilled trench may lead to erosion.	Site verification that trench breaks are installed; document verification that trench break numbers and locations are fit for purpose.	Trench breaks installed as per plan.	Minimum of 7 days prior to backfill.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, PAU, district environment officers, DWRM and WMD

Management of waste and accidental release of oil or chemicals	Groundwater	Potential for groundwater contamination	Waste management plan Pollution prevention plan Natural resource management plan Emergency preparedness and response plan.	The storage of hazardous materials will be restricted to designated hazardous materials storage areas at least 50 m from any wetlands, surface watercourse or seasonal water channel. Such storage locations will be subject to site-specific environmental and social risk assessment that will inform site selection and the adoption of any additional mitigation measures. Storage areas for hazardous materials will be bunded (no drainage valves/holes), have impermeable floor and will be covered to minimise the ingress of rainwater. A refuelling procedure will be developed and implemented which will include but not be limited to: • details of mobile and static refuelling areas and equipment (e.g. impermeable drip trays) • regulatory / GIIP constraints of refuelling operations to sensitive environmental receptors • spill prevention measures • training on refuelling procedures. The grey water stream will be separated from black water (e.g. sewage), treated and either reused (e.g., for toilet flushing, dust suppression) or discharged, in accordance with the environment project standards and national environmental guidance and regulations. All wastewater discharges will comply with permit conditions and the project environmental standards. An industry-recognised manufactured grease trap will be installed at the outlet of the kitchen(s) facilities to prevent greases and fats from entering the grey water streams. Treated sewage effluent which is not reused will be preferentially discharged to land. Before any discharge, the soil permeability will be evaluated, and engineered soakaways will be constructed, where required, to avoid impacts on land, surface water drainage and groundwater. A spill response procedure based on Tier 1, 2 and 3 spill responsibilities defined in the Emergency Preparedness and Response Plan will be developed together with other responsible parties, and the necessary equipment and resources will be procured to implement it. The procedure will cover: • responses for any unintended or unauthorised release of a potentially hazardous material, identification of locations where spill response equipment and resources will be provided, and procedures for its deployment • contact details for the rapid response team and spill response organisation • notification requirements. All Tier 1, 2 and 3 spills will be reported in accordance with the project incident reporting system. In the event of a spillage of hazardous materials the following actions will take place: • A trained rapid response team will be mobilised	Storage of hazardous materials; Waste disposal and handling methods on project sites; Effectiveness of spill prevention measures; Documentation demonstrating that project activities are in compliance with the waste management plan and pollution prevention plan Site verification	Zero noncompliance with the pollution prevention plan and waste management plan	Weekly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, PAU, district environment officers, DWRM and WMD

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
				• Spill response personnel and equipment will be provided to contain, clean-up and remediate (Tier 1 spills). A wider range of resources will be utilised to contain, clean-up and remediate Tier 2 and Tier 3 spills.				

Visual intrusion of project components into landscape	Landscape	Change of landscape character and views caused by project components	Biodiversity management plan Reinstatement plan Soil management plan	A strategy for tree removal and replanting will be developed; the strategy will consider: • where trees are to be removed, the species and size/age of trees that will be recorded prior to removal; data to be recorded includes: trunk diameter at chest height, number of each species, species and, location • the number of trees and species to be removed during construction • conservation value of the species to be removed • variety of species to be replanted • provenance of species used for replanting • the region-specific environmental characteristics influencing replanting success. Preconstruction surveys will be referred to when deciding suitable locations for replanting of translocated species or species planted to compensate for those removed during construction. Environmental and social evaluations will be undertaken to identify suitable offsite disposal sites for waste soil and rock, and appropriate management measures to be implemented. All temporary borrow pits and soil and rock disposal sites will be reinstated, unless instructed otherwise by the regulatory authorities, in accordance with pre-entry agreements with landowner and location-specific reinstatement plans will be prepared and implemented. Where benching is required then the areas will be re-contoured to original profiles. Side casting in areas of steep terrain will be prohibited. The effects of accidental spoil slippage on steep slopes will mitigated, e.g., by using fences or a geotextile membrane. Recontouring should be sympathetic and in keeping with preconstruction profiles, where this is not precluded by risk to integrity of the pipeline or erosion considerations. Before construction personnel and equipment are demobilised, temporary buildings and equipment, aboveground and belowground infrastructure, utilities, tools and any excess material brought onsite or generated during construction and commissioning will be removed. All off ROW sites impacted upon will be reinstated to meet pre-entry agreements with the landowner and in accordance with location-specific reinstatement method statements or plans to be prepared and implemented. Location-specific closeout reports, including photographs, will be produced to document the condition of temporary sites at handover following reinstatement. A preconstruction survey, including photographs, will be undertaken to document the condition of the land on which the RoW, construction and permanent facilities and access roads will be located. The survey will include immovable assets, crops and any remediation required to the land before construction. The survey will:	Height of stockpiles to avoid significant change in views and landscape; Restriction of vegetation clearance to only within the construction RoW; Before and after photographs with regard to contouring, drainage, waste and debris. reinstatement of borrow pits	No significant change in landscape	Weekly during reinstatement	Project government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, WMD, district environment officers, NFA and PAU

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
				• provide baseline evidence in the event of a claim for damage • identify existing contamination such as illegal disposal • inform pre-entry agreements including: o agreement for temporary measures to be installed (e.g., during disruption to drainage or irrigation, temporary fencing) o reinstatement requirements. Pre-entry agreements will be made with landowners, including reinstatement requirements, prior to access onto a site.				
Disposal of surplus subsoil and aggregate	Landscape	Permanent change of views as a result of disposal of surplus subsoil and aggregate	Soil management plan Waste management plan Reinstatement plan	Before construction personnel and equipment are demobilised, temporary buildings and equipment, aboveground and belowground infrastructure, utilities, tools and any excess material brought onsite or generated during construction and commissioning will be removed. All of RoW sites impacted upon will be reinstated to meet pre-entry agreements with the landowner and in accordance with location-specific reinstatement method statements or plans to be prepared and implemented. Location-specific closeout reports, including photographs, will be produced to document the condition of temporary sites at handover following reinstatement.	Height of stockpiles to avoid significant change in views and landscape; Restriction of vegetation clearance to only within the construction RoW; reinstatement of borrow pits; Presence of excess soil remaining on site immediately after reinstatement is completed	Zero noncompliance with the Reinstatement Plan	Immediately after reinstatement Weekly until all excess soil is removed, reused and or disposed of	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, District Environment Officers, PAU
Release of gases, exhausts and vapours to atmosphere	Air quality	Reduced air quality from combustion of fuel in construction equipment and vehicles	Pollution prevention plan	To minimise emissions to air, vehicles, machines and equipment will: • be appropriate for the task required • have a valid maintenance and inspection certificate or log books • be allocated a unique identifier to be used in a maintenance log • be maintained regularly in accordance with the manufacturer's recommendations to maximise fuel efficiency and help reduce emissions • not be allowed to idle – engines will be switched off when not in use. Vehicles or equipment seen to be emitting excessive black smoke will not be permitted to continue work and will be sent for maintenance.	Servicing and maintenance of project vehicles, machines and equipment; Documentation to support that all combustion equipment on any Project or contractor site is up to date on manufacturer's recommended maintenance and servicing	Zero noncompliance with scheduled servicing and maintenance of combustion equipment	Monthly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, district environment officers, PAU and MGLSD

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Release of gases, exhausts and vapours to atmosphere	Air Quality	Hydrocarbon vapour emissions from refuelling operations causing reduced air quality	Pollution prevention plan	A refuelling procedure will be developed and implemented which will include but not be limited to: • details of mobile and static refuelling areas and equipment (e.g. impermeable drip trays) • regulatory / GIIP constraints of refuelling operations to sensitive environmental receptors • spill prevention measures • training on refuelling procedures.	Refuelling procedures; Effectiveness of spill prevention measures; Training records targeting refuelling.	All personnel responsible undertaking refuelling activities are trained to reduce spills and vapour emissions.	Monthly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, district environment officers, PAU and MGLSD
Dust	Air Quality	Nuisance from dust emissions from construction site activities	Pollution prevention plan Transport and road safety management plan	Where construction generated dust may affect sensitive receptors, the following mitigation measures will be considered: • dust suppression at work-sites and transport routes • adherence to RoW speed limits supplemented by awareness training • sheeting of fine materials being transported or stored on-site.	Implementation of dust suppression measures Site verification Number of related complaints	Zero noncompliance with dust suppression measures described in the Pollution Prevention Plan Continuous improvement on percentage of unresolved complaints on project vehicle dust emissions after Project has proposed solution(s) during engagement	Weekly – site verification Monthly – complaints, documentation	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, district environment officers and PAU

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Noise	Acoustic Environment	Disturbance or nuisance from noise from construction on the RoW	Pollution prevention plan	Project noise emissions will not result in an exceedance of PES or national legislative noise criteria at any existing sensitive receptor site. Location specific assessments will be undertaken at sensitive receptors in proximity to project activities occurring between 7 p.m. and 7 a.m. to identify appropriate mitigation where there is potential to cause disturbance from noise and vibration. Preference will be given to selecting low noise and vibration emitting equipment for all construction works. To minimise emissions to air, vehicles, machines and equipment will: • be appropriate for the task required • have a valid maintenance and inspection certificate or log books • be allocated a unique identifier to be used in a maintenance log • be maintained regularly in accordance with the manufacturer's recommendations to maximise fuel efficiency and help reduce emissions • not be allowed to idle – engines will be switched off when not in use.	Noise levels at sensitive receptors; field verification. Number of related complaints. Documentation to support that all combustion equipment on any Project or contractor site is up to date on manufacturer's recommended maintenance and servicing.	Zero exceedance of project environmental standards. Continuous improvement on percentage of unresolved complaints on noise after Project has proposed solution(s) during engagement. Zero noncompliance with scheduled servicing and maintenance of combustion equipment.	Weekly for noise level monitoring at sensitive receptors. Monthly for documentation.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, district environment officers, OSH Department – MGLSD
Noise	Acoustic Environment	Disturbance or nuisance from noise from traffic movement	Pollution prevention plan Transport and road safety management plan	Project noise emissions will not result in an exceedance of PES or national legislative noise criteria at any existing sensitive receptor site. Location specific assessments will be undertaken at sensitive receptors in proximity to project activities occurring between 7 p.m. and 7 a.m. to identify appropriate mitigation where there is potential to cause disturbance from noise and vibration. Preference will be given to selecting low noise and vibration emitting equipment for all construction works. To minimise emissions to air, vehicles, machines and equipment will: • be appropriate for the task required • have a valid maintenance and inspection certificate or log books • be allocated a unique identifier to be used in a maintenance log • be maintained regularly in accordance with the manufacturer's recommendations to maximise fuel efficiency and help reduce emissions • not be allowed to idle – engines will be switched off when not in use.	Noise levels at sensitive receptors; field verification. Number of related complaints. Documentation to support that all combustion equipment on any Project or contractor site is up to date on manufacturer's recommended maintenance and servicing.	Zero exceedance of project environmental standards. Continuous improvement on percentage of unresolved complaints on noise after Project has proposed solution(s) during engagement. Zero noncompliance with scheduled servicing and maintenance of combustion equipment.	Weekly for noise level monitoring at sensitive receptors. Monthly for documentation.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, district environment officers, OSH Department – MGLSD

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Vibration	Acoustic Environment	Disturbance, nuisance or cosmetic / structural damage from vibration	Pollution prevention plan Stakeholder engagement plan	Project noise emissions will not result in an exceedance of PES or national legislative noise criteria at any existing sensitive receptor site. To minimise emissions to air, vehicles, machines and equipment will: • be appropriate for the task required • have a valid maintenance and inspection certificate or log books • be allocated a unique identifier to be used in a maintenance log • be maintained regularly in accordance with the manufacturer's recommendations to maximise fuel efficiency and help reduce emissions • not be allowed to idle – engines will be switched off when not in use.	Documentation demonstrating noise and vibration assessments have been completed, mitigation is implemented, and noise levels meet project emission standards Number of related complaints	Zero noncompliance with project noise standards Continuous improvement on percentage of unresolved complaints on noise after Project has proposed solution(s) during engagement	Daily during construction where construction occurs near sensitive receptors Monthly for documentation and complaints	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, District Environment Officers, OSH Department – MGLSD
Employment	Economy	The generation of national employment opportunities leading to an increase in household income and an improvement in living standards.	National content plan	A Procurement and Supply Chain Management Plan (PSCMP) will be developed to maximise the purchase of goods and services from within Uganda/Tanzania. This will be contingent on whether local suppliers can offer sufficient quality and reliability and can meet project requirements. PSCMP will include, as appropriate, enterprise development, capacity development and ring-fencing contracts. An approved recruitment procedure will be implemented that: • Is transparent and open to all regardless of race, political opinion, colour, creed, sexuality or gender. • Includes a local recruitment strategy. • Considers social and cultural sensitivities. • Describes the employment criteria for the recruitment of professional, semiskilled and unskilled labour. • Prohibits discrimination or harassment of job applicants. Job descriptions will advertise vacancies in local languages in the PACs through accessible media and on the project website. Targets for local recruitment from project-affected communities will be set by the project. These will be designed to meet legal requirements. An employment office will be established in the local area to conduct local recruitment.	National recruitment target	Meeting National recruitment target	Quarterly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: MEMD, PAU and MGLSD

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Provision of goods and services	Economy	Project procurement providing opportunities for national businesses.	National content plan	A Procurement and Supply Chain Management Plan (PSCMP) will be developed to maximise the purchase of goods and services from within Uganda/Tanzania. This will be contingent on whether local suppliers can offer sufficient quality and reliability and can meet project requirements. PSCMP will include, as appropriate, enterprise development, capacity development and ring-fencing contracts.	Development of a Procurement and Supply Chain Management Plan (PSCMP) to maximise the purchase of goods and services from within Uganda/Tanzania	Zero noncompliance with the Procurement and Supply Management Plan	Monthly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: MEMD, PAU and MGLSD
Revenue	Economy	Contribution to national economy from investment.	-	-	Contribution to the national economy	-	Annual	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: MEMD and PAU
Revenue	Economy	Changes to the fiscal balance	-	-	Contribution to the national economy	-	Annual	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: MEMD, PAU

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Employment	Local economy (nonland-based livelihoods	The generation of project local employment opportunities	Procurement and supply chain management plan Labour management plan Stakeholder engagement plan	An approved recruitment procedure will be implemented that: • Is transparent and open to all regardless of race, political opinion, colour, creed, sexuality or gender • Includes a local recruitment strategy. • Considers social and cultural sensitivities. • Describes the employment criteria for the recruitment of professional, semiskilled and unskilled labour. • Prohibits discrimination or harassment of job applicants. Job descriptions will advertise vacancies in local languages in the PACs through accessible media and on the project website. Targets for local recruitment from project-affected communities will be set by the project. These will be designed to meet legal requirements. An employment office will be established in the local area to conduct local recruitment. As part of the tendering process, (sub) contractors will be required to include training components in their proposal aimed at increasing local employment as well as improving skills of local staff.	Local recruitment target	Meeting local recruitment target	Quarterly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: MEMD, PAU and MGLSD
Employment	Local economy (nonland-based livelihoods	The provision of training and skill development opportunities within employment.	Procurement and supply chain management plan Labour management plan	As part of the tendering process, (sub) contractors will be required to include training components in their proposal aimed at increasing local employment as well as improving skills of local staff. A public awareness programme to communicate employment and training opportunities will be implemented that includes but is not limited to: • the local recruitment strategy • criteria for employment • the number and types of employment opportunities • the procedure for applying for employment. Information will be disseminated publicly, including via media announcements at regional and national levels and during public meetings in PACs. Care will be taken to reach women and vulnerable groups if necessary through targeted meetings scheduled at times and locations that may increase women's participation. As part of the OHSSP, a risk-based worksite and construction camp training programme will be developed and administered to the workforce, vendor representatives and site visitors; the training programme (including daily toolbox meetings) will be updated in accordance with changes made in scope, incident statistics and/or regulatory requirements. Daily toolbox meetings will be held where health and safety issues will be discussed.	Number and content of training sessions Number of training participants	Continuous improvement on percentage of training participants versus total number of workers One training sessions documented per week and work site	Quarterly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: MEMD, PAU and MGLSD

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Provision of goods and services	Local economy (nonland-based livelihoods	Project procurement providing opportunities for local businesses	Procurement and supply chain management plan Labour management plan	A Procurement and Supply Chain Management Plan (PSCMP) will be developed to maximise the purchase of goods and services from within Uganda/Tanzania. This will be contingent on whether local suppliers can offer sufficient quality and reliability and can meet project requirements. PSCMP will include, as appropriate, enterprise development, capacity development and ring-fencing contracts.	Development of a Procurement and Supply Chain Management Plan (PSCMP) to maximise the purchase of goods and services from within Uganda/Tanzania	Zero noncompliance with the Procurement and Supply Management Plan	Monthly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: MEMD, PAU and MGLSD
Employment	Local economy (nonland-based livelihoods	Loss of employment after project construction phase	Procurement and supply chain management plan Labour management plan Stakeholder engagement plan	Financial management workshops will be held with workers to raise levels of financial literacy. During the recruitment process and throughout their contract, workers will be advised regularly that the duration of their employment is temporary and that they should maintain their existing livelihoods during this period and prepare through sound financial management for the ultimate termination of their employment. The Project will develop a campaign focused on providing realistic community expectations with regard to livelihood options and employment opportunities.	Documentation demonstrating worker awareness training on limited duration of employment and need to maintain existing livelihoods.	Full coverage of workforce at start of employment.	Monthly.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: MEMD, PAU and MGLSD

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Employment	Local economy (nonland-based livelihoods	Dissatisfaction arising from unmet expectations over the scale and duration of project local employment opportunities	Project-induced in-migration management plan Labour management plan Stakeholder engagement plan	An approved recruitment procedure will be implemented that: • is transparent and open to all regardless of race, political opinion, colour, creed, sexuality or gender • includes a local recruitment strategy • considers social and cultural sensitivities • describes the employment criteria for the recruitment of professional, semiskilled and unskilled labour • prohibits discrimination or harassment of job applicants. Job descriptions will advertise vacancies in local languages in the PACs through accessible media and on the project website. Targets for local recruitment from project-affected communities will be set by the project. These will be designed to meet legal requirements. An employment office will be established in the local area to conduct local recruitment. A public awareness programme to communicate employment and training opportunities will be implemented that includes but is not limited to: the local recruitment strategy criteria for employment the number and types of employment opportunities the procedure for applying for employment. Information will be disseminated publicly, including via media announcements at regional and national levels and during public meetings in PACs. Care will be taken to reach women and vulnerable groups if necessary through targeted meetings scheduled at times and locations that may increase women's participation. The Project will develop a campaign focused on providing realistic community expectations with regard to livelihood options and employment opportunities.	Documentation demonstrating worker awareness training on limited duration of employment and need to maintain existing livelihoods Number of related complaints	Full coverage of workforce at start of employment. Continuous improvement on percentage of unresolved related complaints after Project has proposed solution(s) during engagement	Monthly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: MEMD, PAU and MGLSD

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Employment	Local economy (nonland-based livelihoods	Competition over employment opportunities	Project-induced in-migration management plan Labour management plan Stakeholder engagement plan	An approved recruitment procedure will be implemented that: • is transparent and open to all regardless of race, political opinion, colour, creed, sexuality or gender • includes a local recruitment strategy • considers social and cultural sensitivities • describes the employment criteria for the recruitment of professional, semiskilled and unskilled labour • prohibits discrimination or harassment of job applicants. Job descriptions will advertise vacancies in local languages in the PACs through accessible media and on the project website. Targets for local recruitment from project-affected communities will be set by the project. These will be designed to meet legal requirements. An employment office will be established in the local area to conduct local recruitment. A public awareness programme to communicate employment and training opportunities will be implemented that includes but is not limited to: • the local recruitment strategy • criteria for employment • the number and types of employment opportunities • the procedure for applying for employment. Information will be disseminated publicly, including via media announcements at regional and national levels and during public meetings in PACs. Care will be taken to reach women and vulnerable groups if necessary through targeted meetings scheduled at times and locations that may increase women's participation	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding • recruitment opportunities and process • grievance procedure • number of related complaints.	Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Quarterly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: MEMD, PAU and MGLSD

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Employment	Local economy (nonland-based livelihoods	Diversion of workers gaining employment from the project away from existing local businesses or public-sector jobs	Procurement and supply chain management plan Labour management plan Stakeholder engagement plan	A public awareness programme to communicate employment and training opportunities will be implemented that includes but is not limited to: • the local recruitment strategy. • criteria for employment. • the number and types of employment opportunities. • the procedure for applying for employment. Information will be disseminated publicly, including via media announcements at regional and national levels and during public meetings in PACs. Care will be taken to reach women and vulnerable groups if necessary through targeted meetings scheduled at times and locations that may increase women's participation. Before construction, a benchmarking exercise gathering data associated with average incomes in the private and public sector for each region/district will be undertaken. This information will be used to identify salary levels for the construction workforce so that disparities between project-related salaries and local businesses/public sector salaries are avoided. The Project will develop a campaign focused on providing realistic community expectations regarding livelihood options and employment opportunities.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding • recruitment opportunities and process • grievance procedure • number of related complaints. Labour management plan is informed by preproject salary benchmarking.	Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement. Preproject salary benchmarking is completed.	Quarterly for complaints. For benchmarking, 90 days prior to construction commencing.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: MEMD, PAU and MGLSD

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Employment	Local economy (nonland-based livelihoods	School drop outs seeking employment in the project supply chain	Procurement and supply chain management plan Monitoring and reporting plan Labour management plan Stakeholder engagement plan	An awareness campaign targeting schools at sensitive locations within the project AOI will be developed, addressing: • importance of staying in school • risks particularly to girls of relationships with transient workers, transactional and commercial sex • road safety awareness • awareness about their rights • project grievance mechanism and their right to use it.	Evidence of a standard clause in all contracts that no employees shall be hired, directly or indirectly, under the age of 18 years of age	No underage persons to be employed as part of the project workforce Inspections and audits to identify whether children under the age of 18 are being hired by the Project	Monthly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: MEMD, PAU and MGLSD
Provision of goods and services	Local economy (nonland-based livelihoods	Inflation and effects on supply owing to project procurement	Procurement and supply chain management plan	A Procurement and Supply Chain Management Plan (PSCMP) will be developed to maximise the purchase of goods and services from within Uganda/Tanzania. This will be contingent on whether local suppliers can offer sufficient quality and reliability and can meet project requirements. PSCMP will include, as appropriate, enterprise development, capacity development and ring-fencing contracts. Before construction, a benchmarking exercise to gather data associated with average prices for goods will be undertaken in each region/district. This information will be used to identify appropriate prices so that large price disparities between project-procured goods and local goods are avoided.	Documentation that demonstrates a benchmarking exercise is completed and that information informs the Procurement and Supply Management Plan.	Zero noncompliance with the Procurement and Supply Management Plan	90 days before construction commencing.	Project relevant government agencies who may conduct independent monitoring or review include: MEMD and PAU
Provision of goods and services	Local economy (nonland-based livelihoods	Restriction of access to small businesses, street vendors and local markets during construction	Transport and road safety management plan Monitoring and reporting plan Stakeholder engagement plan	A resettlement policy framework (RPF) has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. A resettlement action plan (RAP) will describe the modalities of identifying Project Affected People (PAP) and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding • compensation process • grievance procedure • number of related complaints	Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Quarterly	Project relevant government agencies who may conduct independent monitoring or review include: MEMD, PAU, MHLUD, MTWA and MGLSD

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Temporary Road Closure	Local economy (nonland-based livelihoods	Increased transportation costs and travel time with economic consequences	Infrastructure and utilities management plan Stakeholder engagement plan	Any planned diversion of utility services, closures of any road or track, or planned traffic diversions will be communicated to local authorities and affected communities at least 72 hours before the works. Information provided to the community will include (as relevant to the diversion) but not be limited to details of the timing and duration of the diversion; the route of traffic diversions; and traffic control measures for road crossings where delays and public safety are key factors. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding: notification; grievance procedure; and compensation process. Number of related complaints	Continuous improvement on percentage of unresolved complaints on employment after Project has proposed solution(s) during engagement	Quarterly	Project in consultation with respective utility service provider. Relevant government agencies who may conduct independent monitoring or review include: MEMD, PAU and district local governments
Impeded movement of animals	Land-based livelihoods	Due to access restrictions, livestock cause damage to crops	Community health, safety and security plan. Stakeholder engagement plan Monitoring and reporting plan	Local people will be consulted on the optimum location of crossing points and pastoralists informed of the access restrictions in advance, advising them to avoid cultivated areas. Crossing points will be provided across open trenches and welded pipes and gaps will be left in soil stacks and pipe strings at strategic locations. Incidents in conflicts between crop farmers and herders in the vicinity of the project footprint will be monitored and support will be provided to local authorities to obtain a resolution in cases of conflict wherever possible. Regular meetings will be held with PAC representatives, during construction in their area, to update them on construction progress and to receive comments or queries. A community liaison log will be maintained detailing the content of all meetings.	Site verification – gaps in soil stacks and pipe strings and crossing points as per the Community Health Safety and Security Plan Number of related complaints	Zero noncompliance with the Community Health, Safety and Security Plan Continuous improvement on percentage of unresolved complaints on damage to crops after Project has proposed solution(s) during engagement	Weekly - site verification Monthly - complaints	Project in consultation with respective utility service provider. Relevant government agencies who may conduct independent monitoring or review include: PAU, MEMD, NEMA and local government

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Accidents due to open excavations	Land-based livelihoods	Livestock falling into excavations	Community health, safety and security plan Stakeholder engagement plan. Monitoring and reporting plan	The maximum length of open trench at any one time (per spread) will be defined based on: • the habitats present and potential ecological sensitivities (e.g., terrestrial commuting routes for large mammals) • community safety. Gaps will also be left in soil stacks and pipe strings at strategic locations to allow passage of animals where it is considered safe to do so. Community awareness programmes will be developed and implemented in project-affected communities to explain: • road safety risks and how to increase the safety of pedestrians particularly children • how to ensure their safety during construction • the measures that have been, or will be, implemented to protect their health and safety (e.g., provision of safe access).	Location and length of open excavations Documentation (reports, checklists, etc) demonstrating that appropriate risk assessment has been implemented Number of related complaints	Continuous improvement of percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA and local government
Loss/severance of land and disruption to land-based livelihoods	Land-based livelihoods	Permanent loss of land used for crop farming	Pollution prevention plan. Resettlement action plan Monitoring and reporting plan	An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding • compensation process • grievance procedure • number of related complaints.	Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Quarterly	Project relevant government agencies who may conduct independent monitoring or review include: PAU, MEMD, NEMA, MLHUD, local government, MGLSD and MTWA
Loss/severance of land and disruption to land-based livelihoods	Land-based livelihoods	Temporary loss of grazing land	Pollution prevention plan Resettlement action plan Monitoring and reporting plan	An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding • compensation process • grievance procedure • number of related complaints.	Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Quarterly	Project relevant government agencies who may conduct independent monitoring or review include: PAU, MEMD, NEMA, MLHUD, local government, MGLSD and MTWA

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Loss/severance of land and disruption to land-based livelihoods	Land-based livelihoods	Increased traffic leading to spread of animal diseases	Transport and road safety management plan Community health, safety and security plan Biodiversity management plan	The community health, safety and security plan will include measures to reduce the spread of animal diseases due to increased movement of livestock.	Evidence (records, inspections etc) that control measures have been implemented for vehicles passing through areas where animal disease exist; site verification of effectiveness of measures. Number of related complaints	Zero noncompliance with control measures. Continuous improvement on percentage of unresolved complaints on project vehicle related spread of animal disease after Project has proposed solution(s) during engagement	Monthly	Project relevant government agencies who may conduct independent monitoring or review include: PAU, MEMD, NEMA, MAAIF and local government
Loss/severance of land and disruption to land-based livelihoods	Land-based livelihoods	Permanent loss of access to artisanal mining sites	Pollution prevention plan Resettlement action plan Monitoring and reporting plan	An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding • compensation process • grievance procedure • number of related complaints.	Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Quarterly	Project relevant government agencies who may conduct independent monitoring or review include: PAU, MEMD, NEMA, local government, MGLSD and MTWA

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Loss/severance of land and disruption to land-based livelihoods	Land-based livelihoods	Permanent loss of natural resources	Pollution prevention plan Resettlement action plan Monitoring and reporting plan	A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding • compensation process • grievance procedure • number of related complaints.	Compensation process compliant with resettlement action plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, local government and NFA
Loss/severance of land and disruption to land-based livelihoods	Land-based livelihoods	Reduction in honey production due to loss of habitat	Pollution prevention plan. Resettlement action plan Monitoring and reporting plan	A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding • compensation process • grievance procedure • number of related complaints.	Compensation process compliant with resettlement action plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, local government and MAAIF

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Disruption to surface water catchments	Land-based livelihoods	Temporary disruption to surface water	Infrastructure and utilities management plan Resettlement action plan	Potentially affected landowners, land users, communities and other affected stakeholders (e.g. tourism operators) will be consulted if there is likely to be any disruption to the existing infrastructure and utility services. Feedback from communities will inform planning of the works, especially when determining the options for temporary alternatives. Any planned diversion of utility services, closures of any road or track, or planned traffic diversions will be communicated to local authorities and affected communities at least 72 hours before the works. Information provided to the community will include (as relevant to the diversion) but not be limited to details of the timing and duration of the diversion; the route of traffic diversions; and traffic control measures for road crossings where delays and public safety are key factors.	Number of related complaints	Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project in consultation with respective utility service provider; relevant government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, local government, DWRM and WMD
Restriction of access to fisheries	River and lake-based livelihoods	Temporary loss of access to fishing grounds (rivers, lakes, dams and ponds) due to temporary road closures and access restrictions across the RoW.	Resettlement action plan Stakeholder engagement plan	A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding • compensation process • grievance procedure • number of related complaints.	Compensation process compliant with resettlement action plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, local government, DWRM, WMD and MAAIF

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Resettlement	River and lake-based livelihoods	Permanent loss of access to ponds used for aquaculture due to project land acquisition	Resettlement action plan Stakeholder engagement plan Monitoring and reporting plan	A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding • compensation process • grievance procedure • number of related complaints.	Compensation process compliant with resettlement action plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project relevant government agencies who may conduct independent monitoring or review include: PAU, MEMD, NEMA, local government, DWRM, WMD and MAAIF

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Resettlement	Land and property	Permanent loss of private land due to project land acquisition	Resettlement action plan Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. An RPF (RPF) has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed. Spouses will be consulted and present during the land surveys, entitlement briefings and compensation agreements and both spouses will sign the compensation agreements.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding • compensation process • grievance procedure • number of related complaints.	Compensation process compliant with resettlement action plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project relevant government agencies who may conduct independent monitoring or review include: PAU, MEMD, MLHUD, local government, MTWA and MGLSD
Resettlement	Land and property	Land speculation by third parties	Resettlement action plan Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	The Project will continue monitoring of, and liaising with authorities on land speculation. Where required additional interventions will be developed to enhance existing interventions. PACs will be sensitised to recent land speculation and instances of associated violence and informed of actions that can be taken. A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding land and property speculation. Stakeholder records that demonstrate Project liaising with authorities regarding land and property speculation. Number of related complaints	Zero noncompliance with stakeholder engagement plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project relevant government agencies who may conduct independent monitoring or review include: PAU, MEMD, MLHUD, local government, TWA and MGLSD

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Resettlement	Land and property	Land and property speculation by land owners	Resettlement action plan Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	The Project will continue monitoring of, and liaising with, authorities on land speculation. Where required additional interventions will be developed to enhance existing interventions. PACs will be sensitised to recent land speculation and instances of associated violence and informed of actions that can be taken. A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding land and property speculation. Stakeholder records that demonstrate Project liaising with authorities regarding land and property speculation. Number of related complaints	Zero noncompliance with stakeholder engagement plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project relevant government agencies who may conduct independent monitoring or review include: PAU, MEMD, MLHUD, local government, MGLSD and MTWA
Resettlement	Land and property	New disputes and exacerbation of pre-existing disputes and conflict around land and property	Resettlement action plan. Stakeholder engagement plan. Community health, safety and security plan. Monitoring and reporting plan.	A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed. Spouses will be consulted and present during the land surveys, entitlement briefings and compensation agreements and both spouses will sign the compensation agreements.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding disputes and conflict. Number of related complaints	Zero noncompliance with stakeholder engagement plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project relevant government agencies who may conduct independent monitoring or review include: PAU, MEMD, MLHUD, local government, MGLSD and MTWA

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Resettlement	Land and property	Permanent loss of physical structures due to project land acquisition	Resettlement action plan Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed. Spouses will be consulted and present during the land surveys, entitlement briefings and compensation agreements and both spouses will sign the compensation agreements.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding • compensation process • grievance procedure • compensation records • number of related complaints	Compensation process compliant with resettlement action plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project relevant government agencies who may conduct independent monitoring or review include: PAU, MEMD, MLHUD, local government. MGLSD and MTWA

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Resettlement	Land and property	Permanent loss of local enterprises due to project land acquisition	Resettlement action plan Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding • compensation process • grievance procedure • compensation records • number of related complaints	Compensation process compliant with resettlement action plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project relevant government agencies who may conduct independent monitoring or review include: PAU, MEMD, MLHUD, Local Government, MGLSD
Resettlement	Land and property	Loss of community infrastructure (schools, clinics, community halls) due to project land acquisition	Resettlement action plan Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding • compensation process • grievance procedure • compensation records • number of related complaints	Compensation process compliant with resettlement action plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project relevant government agencies who may conduct independent monitoring or review include: PAU, MEMD, MLHUD, Local Government, MTWA, MGLSD

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Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Resettlement	Land and property	Loss of access to informal support networks and social services after physical displacement due to project land acquisition	Resettlement action plan Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding provision in the resettlement action plan to nurture informal support networks and project support for continued social support. Number of related complaints	Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement.	Monthly	Project relevant government agencies who may conduct independent monitoring or review include: PAU, MEMD, MLHUD, local government and MGLSD

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Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Vibration	Land and property	The generation of vibrations during construction works	Infrastructure and utilities management plan	A preconstruction record of condition, including a photographic log, will be developed. The validity of any claims of damage resulting from project activities will be assessed against the preconstruction record of condition, repairs will be undertaken or appropriate compensation paid if damage is proven. Potential noise and vibration impacts will be assessed where piling is to be undertaken close to sensitive receptors. Where possible, alternative techniques or materials will be used to reduce potential impacts, e.g. restrictions on times and duration in any given day that piling activities are undertaken. An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed. A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance.	Preconstruction record of condition. Documentation demonstrating noise and vibration assessments have been completed. Number of related complaints	Comprehensive preconstruction record of condition. Noise and vibration evaluations completed at sensitive receptors. Continuous improvement on percentage of unresolved complaints on noise after Project has proposed solution(s) during engagement	Once 30 days before construction commences for preconstruction record of condition and noise and vibration evaluations. Monthly for complaints.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, district environment officers, OSH Department – MGLSD

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Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Employment	Workers' health, safety and welfare	An improvement in the health and safety of workers from disease awareness and reduction programmes	Occupational health safety and security plan	As part of the project OHSSP, a Communicable Disease Management Plan will be developed to manage infectious disease outbreaks in construction camp/MCPY and prevention of spread to PACs. A HIV/STD awareness and prevention programme will be put in place at the rest stops used by project drivers to address: • awareness and understanding among drivers about the risks of HIV and STDs • the associated health implications • the preventative measures that can be taken • community awareness meetings • counselling and testing services • the distribution of information, leaflets and condoms. A vaccination plan will be identified to prevent communicable diseases for which vaccinations are available from being transmitted between the national/international and local workforce. This plan will apply to all project workers and visitors. As part of the OHSSP, a risk-based worksite and construction camp training programme will be developed and administered to the workforce, vendor representatives and site visitors; the training programme (including daily toolbox meetings) will be updated in accordance with changes made in scope, incident statistics and/or regulatory requirements. Daily toolbox meetings will be held where health and safety issues will be discussed.	Number of instances of communicable diseases in workforce per worksite Trends in communicable diseases in PACs	No increase in communicable diseases of workforce by category and worksite against baseline	Monthly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, district local government, OSH Department – MGLSD and Ministry of Health
Employment	Workers' health, safety and welfare	Risk of wildlife interaction/ animal bites and contracting zoonotic diseases	Occupational health safety and security plan	As part of the OHSSP Risk Assessment process, the risk to worker health posed by wildlife at each camp and yard will be assessed and appropriate management measures will be developed and implemented.	Evidence that a risk assessment has been undertaken regarding worker health posed by wildlife at each camp and yard Evidence of appropriate management measures implemented	Number of recorded incidents of workforce interactions with wildlife at MCPY	Monthly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, District Local Government, OSH Department – MGLSD, UWA and Ministry of Health

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Employment	Workers' health, safety and welfare	Other occupational health and safety incidents causing diseases, injuries and mortality	Occupational health safety and security plan Labour management plan Community health, safety and security plan Transport and road safety management plan	As part of the project OHSSP, construction camp will be designed and built to meet national requirements and regulations. Measures will be detailed to avoid and reduce impacts associated with the development and occupation of construction camp, including but not limited to: • suitable and sufficient welfare facilities will be provided appropriate for both genders • clean and sanitary toilet facilities and showers will be provided appropriate for both genders. • adequate segregation between different areas (e.g. accommodation and hazardous areas) • measures to reduce or remove community disturbance or nuisance from the camp, e.g. preventing litter, dust generation, odours and noise. • include a helicopter landing area and secure fencing around the boundary. Provide workers with personal protection from prevalent diseases where feasible (e.g., condoms and ITN). As part of the OHSSP, a food and water management plan will be developed and implemented to reduce the risk of water- and food-borne disease outbreaks occurring among the workers and the associated risk of transmission to local communities. As part of the OHSSP, a pest control plan will be developed for implementation on construction camp. As part of the OHSSP, a risk-based worksite and construction camp training programme will be developed and administered to the workforce, vendor representatives and site visitors; the training programme (including daily toolbox meetings) will be updated in accordance with changes made in scope, incident statistics and/or regulatory requirements. Daily toolbox meetings will be held where health and safety issues will be discussed. PPE appropriate for the task will be provided to all workers. As part of the OHSSP, basic workplace wellness programs that are culturally and religiously acceptable will be developed and implemented.	Health and safety incidents.	Trend of reduction of health and safety incidents.	Monthly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: NEMA, district local government, OSH Department – MGLSD and Ministry of Health

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Damage to Third Party Infrastructure (Pipelines, Cables and Community Infrastructure)	Social infrastructure and services	Temporary disruption to power supply due to planned outage or accidental damage to cables or other pipelines during pipeline construction	Infrastructure and utilities management plan	Any planned diversion of utility services, closures of any road or track, or planned traffic diversions will be communicated to local authorities and affected communities at least 72 hours before the works. Information provided to the community will include (as relevant to the diversion) but not be limited to details of the timing and duration of the diversion; the route of traffic diversions; and traffic control measures for road crossings where delays and public safety are key factors. An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed. A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding: notifications; grievance procedure; compensation process. Number of related complaints	Continuous improvement on percentage of unresolved complaints on employment after Project has proposed solution(s) during engagement. Relevant stakeholder engagement records.	Quarterly	Project in consultation with respective utility service providers; relevant government bodies that may conduct independent monitoring or review the data include: PAU, MEMD, MLHUD (Physical Planning Department), UETCL and district local governments
Use of road network	Social infrastructure and services	Deterioration of road conditions	Infrastructure and utilities management plan	A post-construction exit survey will be conducted covering all areas surveyed during preconstruction (and any additional land requirements during construction) to assess the condition of dwellings, roads used including bridges, drainage structures, signage, traffic management and other road infrastructure. Any actions, such as repairs, arising from the exit survey will be closed out on a timely basis to allow a prompt return to the relevant authority, village or landowner. Vehicle movements will be restricted to defined access routes and demarcated working areas (unless in the event of an emergency). The Project will conduct regular inspection of access roads to check for damage caused by project vehicles to repair damage in a timely and efficient manner. Strict load management will be enforced on all project vehicles.	Condition of roads against preconstruction survey	Agreement with lead agency regarding scope and extent of repairs	6 monthly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, MLHUD, UNRA and district local governments

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Use of road network	Social infrastructure and services	Traffic congestion leading to delays	Stakeholder engagement plan Transport and road safety management plan	Community liaison officers will encourage PAC Leadership to provide advance warning of local events so that construction activities can be avoided at these times. Vehicle movements will be restricted to defined access routes and demarcated working areas (unless in the event of an emergency). Authorities will be notified when oversize heavy loads need to be transported and such loads will be escorted by the project. Preference will be given to transport of pipe and other construction materials by rail to Isaka where feasible.	Documentation supporting journey management	Zero noncompliance with the Stakeholder Engagement Plan and the Transport and Road Safety Management Plan	Weekly whilst heavy loads are being transported Monthly thereafter	Project relevant government agencies who may conduct independent monitoring or review include: PAU, MEMD, district local government, UNRA and local police
Use of road network	Social infrastructure and services	Disruption of traffic flows	Infrastructure and utilities management plan Transport and road safety management plan	The Project will conduct regular inspection of access roads to check for damage caused by project vehicles to repair damage in a timely and efficient manner. Strict load management will be enforced on all project vehicles. Vehicle movements will be restricted to defined access routes and demarcated working areas (unless in the event of an emergency). Community liaison officers will encourage PAC Leadership to provide advance warning of local events so that construction activities can be avoided at these times. Vehicle movements will be restricted to defined access routes and demarcated working areas (unless in the event of an emergency). Authorities will be notified when oversize heavy loads need to be transported and such loads will be escorted by the project. A post-construction exit survey will be conducted covering all areas surveyed during preconstruction (and any additional land requirements during construction) to assess the condition of dwellings, roads used including bridges, drainage structures, signage, traffic management and other road infrastructure. Any actions, such as repairs, arising from the exit survey will be closed out on a timely basis to allow a prompt return to the relevant authority, village or landowner. Preference will be given to transport of pipe and other construction materials by rail to Isaka where feasible.	Documentation supporting journey management Road inspection records. Stakeholder engagement records. Exit survey.	Zero noncompliance with journey management. All access roads regularly inspected. Journey management responsive to community events. Exit survey completed.	Weekly whilst heavy loads are being transported. Monthly thereafter.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, district local government, UNRA, local police

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Resettlement	Community health	Resettled households' exposure to areas of higher vector densities, increasing the burden of vector-related diseases	Resettlement action plan	The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed. An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels.	Number of related complaints	Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project relevant government agencies who may conduct independent monitoring or review include: PAU, MEMD, NEMA, MGLSD, Ministry of Health, MLHUD and district local governments
Resettlement	Community health	Resettled households' decreased food security	Resettlement action plan	The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed. An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels.	Number of related complaints	Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project relevant government agencies who may conduct independent monitoring or review include: PAU, MEMD, NEMA, MGLSD, MLHUD and district local governments

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Community Health	Community health	Project activities leading to an increase in vector-related diseases	Community health, safety and security plan Occupational health, safety and security plan Stakeholder engagement plan	A malaria and other vector control management plan will be developed and implemented to ensure adequate control over malaria and other vector-related conditions in camp. As part of the project OHSSP, vector management on all project sites will be risk based. Corridor controls for landscape maintenance, as well as integrated pest management procedures (environmental, biological and chemical), will be implemented. As part of the project OHSSP, ensure that vector management on all project sites (camp and construction) align with national vector control programmes and strategies.	Documentation (records, reports etc) demonstrating that appropriate vector control management plans have been developed Instances of vector related medical cases	One health talk per month and full camp coverage of participation. Decreasing trend in vector related medical cases.	Monthly	Project relevant government agencies who may conduct independent monitoring or review include: PAU, MEMD, NEMA, MGLSD, Ministry of Health, MLHUD and district local governments
Noise	Community health	Excessive noise exposure due to project activities	Community health, safety and security plan Pollution prevention plan Stakeholder engagement plan	Project noise emissions will not result in an exceedance of PES or national legislative noise criteria at any existing sensitive receptor site. Location specific assessments will be undertaken at sensitive receptors in proximity to project activities occurring between 7 p.m. and 7 a.m. to identify appropriate mitigation where there is potential to cause disturbance from noise and vibration. Preference will be given to selecting low noise and vibration emitting equipment for all construction works. Activities that generate high levels of noise and vibration will be assessed to determine potential impacts and mitigation will be implemented where appropriate. Notifications of work will be given at least 72 hrs in advance of work to residents / occupants located within: • 100 m of RoW prior to trenching • 50 m of RoW prior to lowering and laying of pipe • 50 m of RoW prior to backfilling and compaction • 250 m of any road upgrades and new access roads.	Documentation (records, reports etc) demonstrating that noise monitoring at sensitive receptors is completed.	Zero exceedance of project environmental standards.	Monthly	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MGLSD and district local government
Disposal of solid and liquid waste	Community health	Increased pressure on regional waste management facilities due to project activities	Waste management plan	-	Documentation (reports, records, etc) supporting that audits of waste facilities being used by the project are completed	Zero noncompliance with Waste Management Plan	Monthly	Project relevant government agencies who may conduct independent monitoring or review include: PAU, MEMD, NEMA and local government

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Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Use of road network	Community health	An increase in the burden of disease along the project's transport corridors as a result of drivers spreading communicable diseases	Community health, safety and security plan Occupational health, safety and security plan Infrastructure and utilities management plan Stakeholder engagement plan	A workers' code of conduct outlining expected worker behaviours will be developed and implemented. This code of conduct will cover the interaction between the national and international workforce and local workforce but also interactions with unemployed PAC members. Compliance with the workers' code of conduct will be a contractual requirement for all contractor, including subcontractors' employees. In the event of non-compliance, workers will be disciplined in accordance with project disciplinary procedures and structures. A HIV/STD awareness and prevention programme will be put in place at the rest stops used by project drivers to address: • awareness and understanding among drivers about the risks of HIV and STDs • the associated health implications • the preventative measures that can be taken • community awareness meetings • counselling and testing services • the distribution of information, leaflets and condoms. An awareness campaign targeting schools at sensitive locations within the project AOI will be developed, addressing: • importance of staying in school • risks particularly to girls of relationships with transient workers, transactional and commercial sex • road safety awareness • awareness about their rights • project grievance mechanism and their right to use it.	Documentation demonstrating that community-based interventions covering malaria control and HIV/TB have been implemented Site verification (e.g. spot check) that HIV/STD awareness and prevention programme delivered as planned	HIV/STD awareness and prevention programme delivered as per plan (dates, locations, distribution of information and condoms etc)	Documentation - 30 days before construction in a new location Site verification every 3 months (quarterly)	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MGLSD, Ministry of Health, MLHUD, District Local Governments

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Community safety	Community safety, security and welfare	Community health and safety incidents associated with construction activities resulting in accidents	Community health, safety and security plan Occupational health, safety and security plan Stakeholder engagement plan	Construction barriers will have visible warning signs understandable by local communities. Signage will be in accordance with internationally accepted symbols and/or be well known to local communities. Regular meetings will be held with PAC representatives, during construction in their area, to update them on construction progress and to receive comments or queries. A community liaison log will be maintained detailing the content of all meetings. Appropriate measures will be implemented to prevent fauna or people from entering welded pipe sections or open excavations; there will be fauna ladders placed at suitable intervals in all open excavations. Animals will be removed safely and released into suitable habitat away from the working area. As part of the OHSSP, a first aid needs assessment will be undertaken for each camp to determine first aider and first aid kit requirements (e.g., qualifications, content of kits, locations).	Site verification that warning signs in appropriate languages and bright colours are installed. Stakeholder engagement records indicating PACs are regularly engaged regarding community relevant project information. First aid available at all camp.	Zero noncompliance with signage. Zero noncompliance with stakeholder engagement plan. First aid available 24/7.	Weekly for site verification. Monthly for stakeholder engagement records.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MGLSD, Ministry of Health, MLHUD, District Local Governments
Community dynamics	Community safety, security and welfare	The capturing of project benefits by men leads to a decrease in quality of life and access to resources for women and children in PACs	Community health, safety and security plan Stakeholder engagement plan Labour management plan. Resettlement action plan	Financial management workshops will be held with workers to raise levels of financial literacy. During the recruitment process and throughout their contract, workers will be advised regularly that the duration of their employment is temporary and that they should maintain their existing livelihoods during this period and prepare through sound financial management for the ultimate termination of their employment. An Information Education and Communication (IEC) programme will be developed for workers addressing social conduct and including topics such as: gender-based violence and, drug and alcohol misuse. The IEC programme will explore opportunities to support community initiatives addressing vulnerable groups including gender balance. Spouses will be consulted and present during the land surveys, entitlement briefings and compensation agreements and both spouses will sign the compensation agreements.	Compensation agreements.	Both spouses sign agreement.	Monthly.	Project and project contractors; relevant government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MGLSD, MLHUD. District Local Governments

Table 10.12-1 Generic ESMP Matrix – Construction Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Community dynamics	Community safety, security and welfare	Conflict between PACs and project security personnel	Community health, safety and security plan Stakeholder engagement plan	Security personnel engaged by the project will receive training on Voluntary Principles (this will include where army and or security forces are engaged by the project); performance will be monitored. The Voluntary Principles on Security and Human Rights will be implemented; compliance will be monitored. Public awareness programmes for stakeholders will include a specific section about the security presence around camp and security protocols which apply.	Training records. Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding project security.	Full coverage of security personnel. Zero community-security incidents.	Monthly	Project relevant government bodies that may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MGLSD, MLHUD, Local Police, District Local Governments

Disturbance or loss of cultural heritage	Tangible and Intangible Cultural Heritage	Increased knowledge of tangible and intangible cultural heritage. Employment of people to survey and investigate cultural heritage affected by the project.	Cultural heritage management plan	A preconstruction survey of the RoW will be undertaken to collect data on location, extent and mitigation measures of known and unknown assets (tangible and intangible cultural heritage (TCH and ICH)) and to consult community leaders about ICH sites or practices not yet identified. A report including a GIS file will be prepared that will recommend location-specific actions to be undertaken that could include: • avoidance of a site • access constraints to reduce disturbance to a site • excavation of a site • a watching brief during vegetation removal or topsoil stripping • requirements to maintain access to cultural heritage assets. A schedule of sites and actions to be undertaken will be prepared and included in the cultural heritage management plan (CHMP) and any appropriate licences obtained. A senior cultural heritage monitor (SCHM) will ensure that the cultural heritage management plan (CHMP) will be implemented, in agreement with relevant government authorities, in advance of construction. The CHMP will include a chance finds procedure. The cultural heritage team will schedule regular meetings and progress reports so that government authorities and appropriate community leaders are kept informed, including: • regular report on progress of excavations • a post-excavation assessment report • a research archive • a final publication of results of tangible or intangible heritage investigations as appropriate to the significance of the outcomes. • chance finds reports will be provided to the government authority and relevant stakeholders. The SCHM will be supported by a tangible cultural heritage monitor (TCHM) and an intangible cultural heritage monitor (ICHM) to evaluate the effectiveness of the cultural heritage protection measures and deliver awareness training for all project personnel. A written scheme of investigation (WSI) will be prepared where an intervention is needed and appended to the cultural heritage management plan (CHMP). Until investigation and recording in accordance with the WSI, or avoidance or management activity is signed off by government authorities, construction may not proceed in that area. The senior cultural heritage monitor (SCHM) will prepare the chance finds procedure (CFP); Chance finds will be excavated by suitably qualified and approved archaeologists, in accordance with the CFP and authorised by the relevant government authority.	Documentation (records, reports etc) demonstrating that a written scheme of investigation has been conducted Documentation (records, reports etc) demonstrating compliance to the Cultural Heritage Management Plan (CHMP)	Zero noncompliance with written scheme of investigation (WSI). Zero noncompliance with chance finds procedure.	Monthly	Project and project contractors; relevant government bodies including: NEMA, Ministry of Tourism, Wildlife and Antiquities (MTWA) – Department of Museums and Monuments

Disturbance or loss of cultural heritage	Tangible and Intangible Cultural Heritage	Damage, disturbance or disruption of access of unknown Category 1 and 2 tangible cultural heritage features, such as evidence of previous settlement and graves.	Cultural heritage management plan	A preconstruction survey of the RoW will be undertaken to collect data on location, extent and mitigation measures of known and unknown assets (tangible and intangible cultural heritage (TCH and ICH)) and to consult community leaders about ICH sites or practices not yet identified. A report including a GIS file will be prepared that will recommend location-specific actions to be undertaken that could include: • avoidance of a site • access constraints to reduce disturbance to a site • excavation of a site • a watching brief during vegetation removal or topsoil stripping • requirements to maintain access to cultural heritage assets. A schedule of sites and actions to be undertaken will be prepared and included in the cultural heritage management plan (CHMP) and any appropriate licences obtained. A senior cultural heritage monitor (SCHM) will ensure that the cultural heritage management plan (CHMP) will be implemented, in agreement with relevant government authorities, in advance of construction. The CHMP will include a chance finds procedure. The cultural heritage team will schedule regular meetings and progress reports so that government authorities and appropriate community leaders are kept informed, including: • regular report on progress of excavations • a post-excavation assessment report • a research archive • a final publication of results of tangible or intangible heritage investigations as appropriate to the significance of the outcomes. • chance finds reports will be provided to the government authority and relevant stakeholders. The SCHM will be supported by a tangible cultural heritage monitor (TCHM) and an intangible cultural heritage monitor (ICHM) to evaluate the effectiveness of the cultural heritage protection measures and deliver awareness training for all project personnel. A written scheme of investigation (WSI) will be prepared where an intervention is needed and appended to the cultural heritage management plan (CHMP). Until investigation and recording in accordance with the WSI, or avoidance or management activity is signed off by government authorities, construction may not proceed in that area. The senior cultural heritage monitor (SCHM) will prepare the chance finds procedure (CFP); Chance finds will be excavated by suitably qualified and approved archaeologists, in accordance with the CFP and authorised by the relevant government authority.	Documentation (records, reports etc) demonstrating that a written scheme of investigation has been conducted Documentation (records, reports etc) demonstrating compliance to the Cultural Heritage Management Plan (CHMP)	Zero noncompliance with written scheme of investigation (WSI). Zero noncompliance with chance finds procedure.	Monthly	Project and project contractors; relevant government bodies including: NEMA, Ministry of Tourism, Wildlife and Antiquities (MTWA) Department of Museums and Monuments

Disturbance or loss of cultural heritage	Tangible and Intangible Cultural Heritage	Damage, disturbance or disruption of access of unknown Category 3 intangible cultural heritage, such as meeting places, sacred natural sites, rivers or ceremonial ways, traditional dance, rituals, traditional healing and syncretism	Cultural heritage management plan	A preconstruction survey of the RoW will be undertaken to collect data on location, extent and mitigation measures of known and unknown assets (tangible and intangible cultural heritage (TCH and ICH)) and to consult community leaders about ICH sites or practices not yet identified. A report including a GIS file will be prepared that will recommend location-specific actions to be undertaken that could include: • avoidance of a site • access constraints to reduce disturbance to a site • excavation of a site • a watching brief during vegetation removal or topsoil stripping • requirements to maintain access to cultural heritage assets. A schedule of sites and actions to be undertaken will be prepared and included in the cultural heritage management plan (CHMP) and any appropriate licences obtained. A senior cultural heritage monitor (SCHM) will ensure that the cultural heritage management plan (CHMP) will be implemented, in agreement with relevant government authorities, in advance of construction. The CHMP will include a chance finds procedure. The cultural heritage team will schedule regular meetings and progress reports so that government authorities and appropriate community leaders are kept informed, including: • regular report on progress of excavations • a post-excavation assessment report • a research archive • a final publication of results of tangible or intangible heritage investigations as appropriate to the significance of the outcomes. • chance finds reports will be provided to the government authority and relevant stakeholders. The SCHM will be supported by a tangible cultural heritage monitor (TCHM) and an intangible cultural heritage monitor (ICHM) to evaluate the effectiveness of the cultural heritage protection measures and deliver awareness training for all project personnel. A written scheme of investigation (WSI) will be prepared where an intervention is needed and appended to the cultural heritage management plan (CHMP). Until investigation and recording in accordance with the WSI, or avoidance or management activity is signed off by government authorities, construction may not proceed in that area. The senior cultural heritage monitor (SCHM) will prepare the chance finds procedure (CFP); Chance finds will be excavated by suitably qualified and approved archaeologists, in accordance with the CFP and authorised by the relevant government authority.	Documentation (records, reports etc) demonstrating that a written scheme of investigation has been conducted Documentation (records, reports etc) demonstrating compliance to the Cultural Heritage Management Plan (CHMP)	Zero noncompliance with written scheme of investigation (WSI). Zero noncompliance with chance finds procedure.	Monthly	Project and project contractors; relevant government bodies including: NEMA, Ministry of Tourism, Wildlife and Antiquities (MTWA) Department of Museums and Monuments

Table 10.12-2 Generic ESMP Matrix – Operational Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Introduction of competitive species or plants/animal diseases	Habitats of conservation importance	Poor re-colonisation by local flora through competition by non-natives following reinstatement	Biodiversity management plan	Biosecurity measures will be developed and implemented that will include a strategy for weed and pest control and measures to prevent the introduction or spread of alien invasive species on the RoW, work sites and camp facilities. The biosecurity measures will also outline specifics to protect the aquatic environment from alien invasive species.	Documentation supporting that the biosecurity measures are implemented. Visual inspection for incidence of alien invasive species.	Zero noncompliance with the Biodiversity Management Plan.	Weekly	Project relevant government bodies who may conduct independent monitoring or review the data include: NEMA, UWA, WMD, District Environment Officers, PAU, NFA
Management of black and grey water	Flora and fauna species of conservation importance (terrestrial and aquatic)	Injury or mortality of flora and fauna due to surface water contamination	Natural resource management plan Waste management plan	The grey water stream will be separated from black water (e.g. sewage), treated and either reused (e.g., for toilet flushing, dust suppression) or discharged, in accordance with the environment project standards and national environmental guidance and regulations. All wastewater discharges will comply with permit conditions and the project environmental standards. An environmental and social evaluation of potential treated wastewater discharge locations will be undertaken as the basis for the development of measures to mitigate impacts from discharges on surface water ecology, downstream water users or terrestrial ecology. The evaluations will take into account the compliance with project environmental standards and will support applications for discharge permits. All licences and consents will be obtained before planned liquid discharges. Treated sewage effluent which is not reused will be preferentially discharged to land. Before any discharge, the soil permeability will be evaluated, and engineered soakaways will be constructed, where required, to avoid impacts on land, surface water drainage and groundwater.	Disposal locations of treated effluent. Documentation to support treated wastewater (to be disposed of) meets the relevant water quality standards.	Zero noncompliance with statutory limits.	Monthly or as per permit conditions	Project relevant government bodies who may conduct independent monitoring or review the data include: NEMA, DWRM, District Environment Officers, PAU

Table 10.12-2 Generic ESMP Matrix – Operational Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Introduction of competitive species or plants/animal diseases	Flora and fauna species of conservation importance (terrestrial and aquatic)	Modified habitats due to non-native species establishment leading to increased competition and loss of habitat for breeding and foraging	Biodiversity management plan	Biosecurity measures will be developed and implemented that will include a strategy for weed and pest control and measures to prevent the introduction or spread of alien invasive species on the RoW, work sites and camp facilities. The biosecurity measures will also outline specifics to protect the aquatic environment from alien invasive species.	Documentation supporting that the biosecurity measures are implemented. Visual inspection for incidence of alien invasive species.	Zero noncompliance with the Biodiversity Management Plan.	Weekly	Project relevant government bodies who may conduct independent monitoring or review the data include: NEMA, UWA, DWRM, District Environment Officers, PAU, NFA, WMD
Disturbance or harm to wildlife	Flora and fauna species of conservation importance (terrestrial and aquatic)	Maintenance activities causing minor habitat loss and alteration	Biodiversity management plan	Operation phase vegetation management activities will account for species of conservation importance and their habitat requirements for foraging, nesting and/or breeding.	Maintenance records identifying compliance with the biodiversity management plan regarding seasonal constraints and impact reduction on habitats and species of conservation importance.	Zero noncompliance.	Every 3 months (quarterly)	Project relevant government bodies who may conduct independent monitoring or review the data include: NEMA, UWA, DWRM, District Environment Officers, PAU, WMD, NFA
Soil erosion	Soil	Loss of topsoil causing reduced fertility and impaired reinstatement	Reinstatement plan Biodiversity management plan	Ways to achieve an increasing trend in vegetation regrowth and diversity of desired species, specifically species composition and, plant species that support forage, refuge and nesting for species of conservation importance, in reinstated areas will be sought, with reference to nearby areas undisturbed by project activities. The re-establishment of vegetation will be monitored following reinstatement until long term re-vegetation targets have been reached.	Restored vegetation in terms of floral diversity, density and cover.	Floral species diversity, density and cover meets reinstatement objectives.	Weekly until vegetation is established in reinstated areas; twice yearly there-after	Project relevant government bodies who may conduct independent monitoring or review the data include: NEMA, DWRM, PAU, District Environment Officers

Table 10.12-2 Generic ESMP Matrix – Operational Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Management of waste and accidental release of oil or chemicals	Soil	Soil contamination	Pollution prevention plan Waste management plan	A spill response procedure based on Tier 1, 2 and 3 spill responsibilities defined in the Emergency Preparedness and Response Plan will be developed together with other responsible parties, and the necessary equipment and resources will be procured to implement it. The procedure will cover: • responses for any unintended or unauthorised release of a potentially hazardous material, identification of locations where spill response equipment and resources will be provided, and procedures for its deployment • contact details for the rapid response team and spill response organisation • notification requirements. All Tier 1, 2 and 3 spills will be reported in accordance with the project incident reporting system. In the event of a spillage of hazardous materials the following actions will take place: • A trained rapid response team will be mobilised • Spill response personnel and equipment will be provided to contain, clean-up and remediate (Tier 1 spills). A wider range of resources will be utilised to contain, clean-up and remediate Tier 2 and Tier 3 spills. The storage of hazardous materials will be restricted to designated hazardous materials storage areas at least 50 m from any wetlands, surface watercourse or seasonal water channel. Such storage locations will be subject to site-specific environmental and social risk assessment that will inform site selection and the adoption of any additional mitigation measures. Storage areas for hazardous materials will be bunded (no drainage valves/holes), have impermeable floor and will be covered to minimise the ingress of rainwater. • A refuelling procedure will be developed and implemented which will include but not be limited to: • details of mobile and static refuelling areas and equipment (e.g. impermeable drip trays) • regulatory/GIIP constraints of refuelling operations to sensitive environmental receptors • spill prevention measures • training on refuelling procedures.	Documentation demonstrating that project activities are in compliance with the waste management plan and Pollution Prevention Plan Site verification	Zero noncompliance with the Pollution Prevention Plan and Waste Management Plan	Monthly	Project relevant government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, DWRM, PAU, District Local Government, OPM (Disaster Preparedness), Local Police

Visual intrusion of project components into landscape	Landscape	Change of landscape character and views caused by project components	Biodiversity management plan. Reinstatement plan. Soil management plan.	A strategy for tree removal and replanting will be developed; the strategy will consider: • where trees are to be removed, the species and size/age of trees that will be recorded prior to removal; data to be recorded includes: trunk diameter at chest height, number of each species, species and, location • the number of trees and species to be removed during construction • conservation value of the species to be • variety of species to be • provenance of species used for replanting • the region-specific environmental characteristics influencing replanting success. Preconstruction surveys will be referred to when deciding suitable locations for replanting of translocated species or species planted to compensate for those removed during construction. Environmental and social evaluations will be undertaken to identify suitable offsite disposal sites for waste soil and rock, and appropriate management measures to be implemented. All temporary borrow pits and soil and rock disposal sites will be reinstated, unless instructed otherwise by the regulatory authorities, in accordance with pre-entry agreements with landowner and location-specific reinstatement plans will be prepared and implemented. Where benching is required then the areas will be re-contoured to original profiles. Side casting in areas of steep terrain will be prohibited. The effects of accidental spoil slippage on steep slopes will mitigated, e.g., by using fences or a geotextile membrane. Recontouring should be sympathetic and in keeping with preconstruction profiles, where this is not precluded by risk to integrity of the pipeline or erosion considerations. Before construction personnel and equipment are demobilised, temporary buildings and equipment, aboveground and belowground infrastructure, utilities, tools and any excess material brought onsite or generated during construction and commissioning will be removed. All off ROW sites impacted upon will be reinstated to meet pre-entry agreements with the landowner and in accordance with location-specific reinstatement method statements or plans to be prepared and implemented. Location-specific closeout reports, including photographs, will be produced to document the condition of temporary sites at handover following reinstatement. A preconstruction survey, including photographs, will be undertaken to document the condition of the land on which the RoW, construction and permanent facilities and access roads will be located. The survey will include immovable assets, crops and any remediation required to the land before construction. The survey will: • provide baseline evidence in the event of a claim for damage • identify existing contamination such as illegal disposal • inform pre-entry agreements including:	Before and after photographs with regard to contouring, drainage, waste and debris.	No significant change	Weekly during reinstatement	Project relevant government bodies who may conduct independent monitoring or review the data include:: NEMA, UWA, WMD, District Environment Officers, NFA, PAU

Table 10.12-2 Generic ESMP Matrix – Operational Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
				○ agreement for temporary measures to be installed (e.g., during disruption to drainage or irrigation, temporary fencing) ○ reinstatement requirements. Pre-entry agreements will be made with landowners, including reinstatement requirements, prior to access onto a site.				
Release of gases, exhausts and vapours to atmosphere	Air Quality	Exhaust emissions from vehicles causing reduced air quality during operation	Pollution Prevention Plan.	To minimise emissions to air, vehicles, machines and equipment will: • be appropriate for the task required • have a valid maintenance and inspection certificate or log books • be allocated a unique identifier to be used in a maintenance log • be maintained regularly in accordance with the manufacturer's recommendations to maximise fuel efficiency and help reduce emissions • not be allowed to idle – engines will be switched off when not in use. Vehicles or equipment seen to be emitting excessive black smoke will not be permitted to continue work and will be sent for maintenance.	Vehicle maintenance records	Zero noncompliance with scheduled servicing and maintenance of combustion equipment	Annually	Project Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, District Environment Officers, PAU, MGLSD (OSH Department)
Dust	Air Quality	Nuisance from mobilisation of dust by project vehicles	Pollution prevention plan Transport and road safety management plan	Where construction generated dust may affect sensitive receptors, the following mitigation measures will be considered: • dust suppression at work-sites and transport routes • adherence to RoW speed limits supplemented by awareness training • sheeting of fine materials being transported or stored on-site.	Implementation of dust suppression measures Site verification Number of related complaints	Zero noncompliance with dust suppression measures described in the Pollution Prevention Plan Continuous improvement on percentage of unresolved complaints on project vehicle dust emissions after Project has proposed solution(s) during engagement	Site verification twice weekly during dry periods Monthly - complaints, documentation	Project Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, District Environment Officers, PAU

Table 10.12-2 Generic ESMP Matrix – Operational Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Noise	Acoustic Environment	Disturbance or nuisance from noise from traffic movement	Pollution prevention plan	Project noise emissions will not result in an exceedance of PES or national legislative noise criteria at any existing sensitive receptor site. Location specific assessments will be undertaken at sensitive receptors in proximity to project activities occurring between 7 p.m. and 7 a.m. to identify appropriate mitigation where there is potential to cause disturbance from noise and vibration. Preference will be given to selecting low noise and vibration emitting equipment for all construction works. To minimise emissions to air, vehicles, machines and equipment will: • be appropriate for the task required • have a valid maintenance and inspection certificate or log books • be allocated a unique identifier to be used in a maintenance log • be maintained regularly in accordance with the manufacturer's recommendations to maximise fuel efficiency and help reduce emissions • not be allowed to idle – engines will be switched off when not in use.	Noise levels at sensitive receptors; field verification. Number of related complaints. Documentation to support that all combustion equipment on any Project or contractor site is up to date on manufacturer's recommended maintenance and servicing.	Zero exceedance of project environmental standards. Continuous improvement on percentage of unresolved complaints on noise after Project has proposed solution(s) during engagement. Zero noncompliance with scheduled servicing and maintenance of combustion equipment.	Weekly for noise level monitoring at sensitive receptors. Monthly for documentation.	Project Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, District Environment Officers, OSH Department - MGLSD

Table 10.12-2 Generic ESMP Matrix – Operational Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Employment	Economy	The generation of national employment opportunities leading to an increase in household income and an improvement in living standards.	National content plan	A Procurement and Supply Chain Management Plan (PSCMP) will be developed to maximise the purchase of goods and services from within Uganda/Tanzania. This will be contingent on whether local suppliers can offer sufficient quality and reliability and can meet project requirements. PSCMP will include, as appropriate, enterprise development, capacity development and ring-fencing contracts. An approved recruitment procedure will be implemented that: • is transparent and open to all regardless of race, political opinion, colour, creed, sexuality or gender • includes a local recruitment strategy • considers social and cultural sensitivities • describes the employment criteria for the recruitment of professional, semiskilled and unskilled labour • prohibits discrimination or harassment of job applicants. Job descriptions will advertise vacancies in local languages in the PACs through accessible media and on the project website. Targets for local recruitment from project-affected communities will be set by the project. These will be designed to meet legal requirements. An employment office will be established in the local area to conduct local recruitment.	National recruitment target	Meeting national recruitment target	Quarterly	Project Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU
Provision of goods and services	Economy	Project procurement providing opportunities for national businesses.	National content plan	A Procurement and Supply Chain Management Plan (PSCMP) will be developed to maximise the purchase of goods and services from within Uganda/Tanzania. This will be contingent on whether local suppliers can offer sufficient quality and reliability and can meet project requirements. PSCMP will include, as appropriate, enterprise development, capacity development and ring-fencing contracts.	Development of a Procurement and Supply Chain Management Plan (PSCMP) to maximise the purchase of goods and services from within Uganda/Tanzania	Zero noncompliance with the Procurement and Supply Management Plan	Monthly	Project and project contractors; Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, MGLSD

Table 10.12-2 Generic ESMP Matrix – Operational Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Revenue	Economy	Contribution to national economy from investment.	-	-	Contribution to the national economy	-	Annual	Project Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU
Revenue	Economy	Changes to the fiscal balance	-	-	Contribution to the national economy	-	Annual	Project Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU
Employment	Local economy (nonland-based livelihoods	School drop outs seeking employment in the project supply chain	Procurement and supply chain management plan Monitoring and reporting plan Labour management plan Stakeholder engagement plan	An awareness campaign targeting schools at sensitive locations within the project AOI will be developed, addressing: • importance of staying in school • risks particularly to girls of relationships with transient workers, transactional and commercial sex • road safety awareness • awareness about their rights • project grievance mechanism and their right to use it.	Evidence of a standard clause in all contracts that no employees shall be hired, directly or indirectly, under the age of 18 years of age	No under age persons to be employed as part of the project workforce Inspections and audits to identify whether children under the age of 18 are being hired by the Project	Monthly	Project contractors; Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, MGLSD

Table 10.12-2 Generic ESMP Matrix – Operational Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Employment	Workers' health, safety and welfare	An improvement in the health and safety of people employed from disease awareness and reduction programmes	Occupational health safety and security plan	As part of the project OHSSP, a Communicable Disease Management Plan will be developed to manage infectious disease outbreaks in construction camp/MCPY and prevention of spread to PACs. A HIV/STD awareness and prevention programme will be put in place at the rest stops used by project drivers to address: • awareness and understanding among drivers about the risks of HIV and STDs • the associated health implications • the preventative measures that can be taken • community awareness meetings • counselling and testing services • the distribution of information, leaflets and condoms. A vaccination plan will be identified to prevent communicable diseases for which vaccinations are available from being transmitted between the national/international and local workforce. This plan will apply to all project workers and visitors. As part of the OHSSP, a risk-based worksite and construction camp training programme will be developed and administered to the workforce, vendor representatives and site visitors; the training programme (including daily toolbox meetings) will be updated in accordance with changes made in scope, incident statistics and/or regulatory requirements. Daily toolbox meetings will be held where health and safety issues will be discussed.	Number of instances of communicable diseases in workforce per worksite Trends in communicable diseases in PACs	No increase in communicable diseases of workforce by category and worksite against baseline	Monthly	Project

Table 10.12-2 Generic ESMP Matrix – Operational Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Employment	Workers' health, safety and welfare	Other occupational health and safety incidents causing diseases, injuries and mortality	Occupational health safety and security plan Labour management plan. Community health, safety and security plan Transport and road safety management plan	As part of the project OHSSP, construction camp will be designed and built to meet national requirements and regulations. Measures will be detailed to avoid and reduce impacts associated with the development and occupation of construction camp, including but not limited to: • suitable and sufficient welfare facilities will be provided appropriate for both genders • clean and sanitary toilet facilities and showers will be provided appropriate for both genders • adequate segregation between different areas (e.g. accommodation and hazardous areas) • measures to reduce or remove community disturbance or nuisance from the camp, e.g. preventing litter, dust generation, odours and noise. • include a helicopter landing area and secure fencing around the boundary. Provide workers with personal protection from prevalent diseases where feasible (e.g., condoms and ITN). As part of the OHSSP, a food and water management plan will be developed and implemented to reduce the risk of water- and food-borne disease outbreaks occurring among the workers and the associated risk of transmission to local communities. As part of the OHSSP, a pest control plan will be developed for implementation on construction camp. As part of the OHSSP, a risk-based worksite and construction camp training programme will be developed and administered to the workforce, vendor representatives and site visitors; the training programme (including daily toolbox meetings) will be updated in accordance with changes made in scope, incident statistics and/or regulatory requirements. Daily toolbox meetings will be held where health and safety issues will be discussed. PPE appropriate for the task will be provided to all workers. As part of the OHSSP, basic workplace wellness programs that are culturally and religiously acceptable will be developed and implemented.	Health and safety incidents.	Trend of reduction of health and safety incidents.	Monthly	Project and project contractors; Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, OHS Department MGLSD

Table 10.12-2 Generic ESMP Matrix – Operational Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Use of road network	Community health	An increase in the burden of disease along the project's transport corridors as a result of drivers spreading communicable diseases	Community health, safety and security plan Occupational health, safety and security plan Infrastructure and utilities management plan Stakeholder engagement plan	A workers' code of conduct outlining expected worker behaviours will be developed and implemented. This code of conduct will cover the interaction between the national and international workforce and local workforce but also interactions with unemployed PAC members. Compliance with the workers' code of conduct will be a contractual requirement for all contractor, including subcontractors' employees. In the event of non-compliance, workers will be disciplined in accordance with project disciplinary procedures and structures. A HIV/STD awareness and prevention programme will be put in place at the rest stops used by project drivers to address: • awareness and understanding among drivers about the risks of HIV and STDs • the associated health implications • the preventative measures that can be taken • community awareness meetings • counselling and testing services • the distribution of information, leaflets and condoms. An awareness campaign targeting schools at sensitive locations within the project AOI will be developed, addressing: • importance of staying in school risks particularly to girls of relationships with transient workers, transactional and commercial sex • road safety awareness • awareness about their rights • project grievance mechanism and their right to use it.	Documentation demonstrating that community-based interventions covering malaria control and HIV/TB have been implemented Site verification (e.g. spot check) that HIV/STD awareness and prevention programme delivered as planned	HIV/STD awareness and prevention programme delivered as per plan (dates, locations, distribution of information and condoms etc)	Documentation - 30 days before construction in a new location Site verification every 3 months (quarterly)	Project and Project contractors; Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, MGLSD, Ministry of Health
Disturbance or loss of cultural heritage	Tangible and Intangible Cultural Heritage	Damage or disturbance of Category 1 and 2 tangible cultural heritage	Cultural heritage management plan	A CHMP will include details of all cultural heritage features identified before and during construction. The CHMP will inform cultural heritage management measures that may be required during project operation.	Verification that the CHMP includes details of all cultural heritage features identified before and during construction.	Zero noncompliance	Once; before first oil	Project Relevant Government bodies including NEMA, Ministry of Tourism, Wildlife and Antiquities (MTWA) Department of Museums and Monuments

Table 10.12-2 Generic ESMP Matrix – Operational Phase

Aspect	VEC	Potential Impact	Management Plan(s)	Mitigation Measures	Parameter to be Monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Disturbance or loss of cultural heritage	Tangible and Intangible Cultural Heritage	Damage or disturbance of Category 3 intangible cultural heritage	Cultural heritage management plan	A CHMP will include details of all cultural heritage features identified before and during construction. The CHMP will inform cultural heritage management measures that may be required during project operation.	Verification that the CHMP includes details of all cultural heritage features identified before and during construction.	Zero noncompliance	Once; before first oil	Project Relevant Government bodies including NEMA, Ministry of Tourism, Wildlife and Antiquities (MTWA) Department of Museums and Monuments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
21 – 94 Buliisa Hoima Wetland forest (scattered fragments between KP21 to 94)	Wetland forest (scattered fragments between KP21 to 94)	Loss of habitat	Loss of natural habitat wetland forest (i.e. riverine forest)	Biodiversity management plan	Preconstruction biodiversity surveys will be undertaken at locations identified in the baseline appendices of the environmental and social impact assessment to record details of habitats and species of conservation importance within the working areas. This information will be used to produce site specific biodiversity management plans that will identify fine-scale route changes (where feasible), mark features for retention and protection, develop biorestoration measures including seed collection, translocation and species propagation and provide details of the specific mitigation measures (such as seasonal construction restrictions) to be implemented to reduce impacts on biodiversity during construction. As part of the Biodiversity Management plan a vegetation removal method statement to reduce impacts on biodiversity will be developed. This will include but not be limited to measures such as: • directional felling of trees on land inside the RoW • avoiding damage to trees outside the RoW • identifying areas where strimming, coppicing or other works will be undertaken in advance of clearing.	Documentation (reports, checklists, etc) demonstrating that supplementary preconstruction surveys have been completed; and site-specific biodiversity management plans have been drafted and implemented where necessary. Reinstatement plan to include increasing trend in vegetation regrowth and plant species that support forage, refuge and nesting.	Comprehensive data records from supplementary preconstruction surveys Compliance with site-specific management plans. Reinstatement completed according to reinstatement plan.	Minimum of 7 days before vegetation clearance commences for preclearance surveys. There-after weekly until sites are reinstated for compliance with biodiversity management plan; there-after monthly until sites are fully restored.	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, NFA, District Environment Officers, PAU, WMD, DWRM

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
0 - 54 Buliisa Hoima Habitat for cranes (valley habitats)	Habitat for cranes (valley habitats)	Loss of Habitat to Species of Conservation Importance and Disturbance or Harm to Wildlife	Loss of breeding and foraging habitat and disturbance (noise, vibration and visual) which supports grey crowned cranes	Biodiversity management plan Reinstatement plan	Preconstruction biodiversity surveys will be undertaken at locations identified in the baseline appendices of the environmental and social impact assessment to record details of habitats and species of conservation importance within the working areas. This information will be used to produce site specific biodiversity management plans that will identify fine-scale route changes (where feasible), mark features for retention and protection, develop biorestoration measures including seed collection, translocation and species propagation and provide details of the specific mitigation measures (such as seasonal construction restrictions) to be implemented to reduce impacts on biodiversity during construction. As part of the Biodiversity Management plan a vegetation removal method statement to reduce impacts on biodiversity will be developed. This will include but not be limited to measures such as: • directional felling of trees on land inside the RoW • avoiding damage to trees outside the RoW • identifying areas where strimming, coppicing or other works will be undertaken in advance of clearing. A biodiversity survey strategy will be developed to include timings and methods of surveys to be undertaken, including but not limited to: • supplemental preconstruction flora and fauna surveys • supplemental preconstruction biodiversity surveys of pre identified species of conservation concern • a biodiversity assessment of watercourses and wetlands • an assessment of fish spawning habitat at open-cut river crossings where the watercourse crossing is planned to occur during the fish-spawning season and International Union for Conservation of Nature or Red Data Book species are known or likely to occur • preconstruction checks on the RoW. Ways to achieve an increasing trend in vegetation regrowth and diversity of desired species, specifically species composition and, plant species that support forage, refuge and nesting for species of conservation importance, in reinstated areas will be sought, with reference to nearby areas undisturbed by project activities. The re-establishment of vegetation will be monitored following reinstatement until long term re-vegetation targets have been reached.	Documentation (reports, checklists, etc) demonstrating that supplementary preconstruction surveys have been completed; and site-specific biodiversity management plans have been drafted and implemented where necessary. Reinstatement plan to include increasing trend in vegetation regrowth and plant species that support forage, refuge and nesting.	Comprehensive data records from supplementary preconstruction surveys Compliance with site-specific management plans. Reinstatement completed according to reinstatement plan.	Minimum of 7 days before vegetation clearance commences for preclearance surveys. There-after weekly until sites are reinstated for compliance with biodiversity management plan; there-after monthly until sites are fully restored.	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, District Environment Officers, PAU

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
0 - 95 Buliisa Hoima Tilenga Route wide	Tilenga Route wide	Loss of Habitat to Species of Conservation Importance and Disturbance or Harm to Wildlife	Disturbance and loss of habitat that support wide ranging bird species	Biodiversity management plan	Preconstruction biodiversity surveys will be undertaken at locations identified in the baseline appendices of the environmental and social impact assessment to record details of habitats and species of conservation importance within the working areas. This information will be used to produce site specific biodiversity management plans that will identify fine-scale route changes (where feasible), mark features for retention and protection, develop biorestoration measures including seed collection, translocation and species propagation and provide details of the specific mitigation measures (such as seasonal construction restrictions) to be implemented to reduce impacts on biodiversity during construction. As part of the Biodiversity Management plan a vegetation removal method statement to reduce impacts on biodiversity will be developed. This will include but not be limited to measures such as: • directional felling of trees on land inside the RoW • avoiding damage to trees outside the RoW • identifying areas where strimming, coppicing or other works will be undertaken in advance of clearing. A biodiversity survey strategy will be developed to include timings and methods of surveys to be undertaken, including but not limited to: • supplemental preconstruction flora and fauna surveys • supplemental preconstruction biodiversity surveys of pre identified species of conservation concern • a biodiversity assessment of watercourses and wetlands • an assessment of fish spawning habitat at open-cut river crossings where the watercourse crossing is planned to occur during the fish-spawning season and International Union for Conservation of Nature or Red Data Book species are known or likely to occur • preconstruction checks on the RoW. Ways to achieve an increasing trend in vegetation regrowth and diversity of desired species, specifically species composition and, plant species that support forage, refuge and nesting for species of conservation importance, in reinstated areas will be sought, with reference to nearby areas undisturbed by project activities. The re-establishment of vegetation will be monitored following reinstatement until long term re-vegetation targets have been reached.	Documentation (reports, checklists, etc) demonstrating that supplementary preconstruction surveys have been completed; and site-specific biodiversity management plans have been drafted and implemented where necessary. Reinstatement plan to include increasing trend in vegetation regrowth and plant species that support forage, refuge and nesting.	Comprehensive data records from supplementary preconstruction surveys Compliance with site-specific management plans. Reinstatement completed according to reinstatement plan.	Minimum of 7 days before vegetation clearance commences for preclearance surveys. There-after weekly until sites are reinstated for compliance with biodiversity management plan; there-after monthly until sites are fully restored.	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, District Environment Officers, PAU

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
27 - 38 Buliisa Adjacent Bugungu WR	Adjacent Bugungu WR	Loss of Habitat to Species of Conservation Importance	Loss of breeding and forage habitat for fauna assemblage in supporting habitat for Bugungu WR.	Biodiversity management plan	Preconstruction biodiversity surveys will be undertaken at locations identified in the baseline appendices of the environmental and social impact assessment to record details of habitats and species of conservation importance within the working areas. This information will be used to produce site specific biodiversity management plans that will identify fine-scale route changes (where feasible), mark features for retention and protection, develop biorestoration measures including seed collection, translocation and species propagation and provide details of the specific mitigation measures (such as seasonal construction restrictions) to be implemented to reduce impacts on biodiversity during construction. As part of the Biodiversity Management plan a vegetation removal method statement to reduce impacts on biodiversity will be developed. This will include but not be limited to measures such as: • directional felling of trees on land inside the RoW • avoiding damage to trees outside the RoW • identifying areas where strimming, coppicing or other works will be undertaken in advance of clearing.	Documentation (reports, checklists, etc) demonstrating that supplementary preconstruction surveys have been completed; and site-specific biodiversity management plans have been drafted and implemented where necessary. Reinstatement plan to include increasing trend in vegetation regrowth and plant species that support forage, refuge and nesting.	Comprehensive data records from supplementary preconstruction surveys Compliance with site-specific management plans. Reinstatement completed according to reinstatement plan.	Minimum of 7 days before vegetation clearance commences for preclearance surveys. There-after weekly until sites are reinstated for compliance with biodiversity management plan; there-after monthly until sites are fully restored.	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, District Environment Officers, PAU

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
27 - 28 Buliisa Adjacent Bugungu WR	Adjacent Bugungu WR	Disturbance or Harm to Wildlife	Disturbance (noise and visual) to species using the WR resulting in temporary restriction to species' distribution	Biodiversity management plan	Project noise emissions will not result in an exceedance of PES or national legislative noise criteria at any existing sensitive receptor site. The total duration of construction disturbance (i.e. the time between initial site clearing and final reinstatement/biorestoration) will be minimised. Vegetation clearing in suitable nesting habitat for vultures will be undertaken in advance of the dry season (when nesting occurs). A preclearance check for occupied vulture nests will be undertaken in suitable nesting habitat within 500m of the RoW. If any occupied nests are found, avoid construction until the chick has fully fledged or install noise and visual screening to minimise disturbance.	Documentation scheduling vegetation clearance to be completed outwith nesting season. Survey plan to include nests within 500m of RoW; site verification. Noise levels at sensitive receptors; field verification. Maintenance records of vehicles and equipment. Documentation demonstrating that the duration of disturbance is minimised.	No vegetation clearance during nesting season. Construction avoided within 500m of an occupied nest. Zero exceedance of project environmental standards. Disturbance limited to a single growing season.	90 days prior to construction commencing for documentation. Weekly for site verification for occupied nests during nesting season. Weekly for noise level monitoring at sensitive receptors. Quarterly for documentation.	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, District Environment Officers, PAU

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
89 Hoima Wambabya River	Wambabya River	Disturbance or Harm to Wildlife	Disturbance to chimpanzee	Biodiversity management plan	Preconstruction biodiversity surveys will be undertaken at locations identified in the baseline appendices of the environmental and social impact assessment to record details of habitats and species of conservation importance within the working areas. This information will be used to produce site specific biodiversity management plans that will identify fine-scale route changes (where feasible), mark features for retention and protection, develop biorestoration measures including seed collection, translocation and species propagation and provide details of the specific mitigation measures (such as seasonal construction restrictions) to be implemented to reduce impacts on biodiversity during construction. As part of the Biodiversity Management plan a vegetation removal method statement to reduce impacts on biodiversity will be developed. This will include but not be limited to measures such as: • directional felling of trees on land inside the RoW • avoiding damage to trees outside the RoW • identifying areas where strimming, coppicing or other works will be undertaken in advance of clearing. A biodiversity survey strategy will be developed to include timings and methods of surveys to be undertaken, including but not limited to: • supplemental preconstruction flora and fauna surveys • supplemental preconstruction biodiversity surveys of pre identified species of conservation concern • a biodiversity assessment of watercourses and wetlands • an assessment of fish spawning habitat at open-cut river crossings where the watercourse crossing is planned to occur during the fish-spawning season and International Union for Conservation of Nature or Red Data Book species are known or likely to occur • preconstruction checks on the RoW. Ways to achieve an increasing trend in vegetation regrowth and diversity of desired species, specifically species composition and, plant species that support forage, refuge and nesting for species of conservation importance, in reinstated areas will be sought, with reference to nearby areas undisturbed by project activities. The re-establishment of vegetation will be monitored following reinstatement until long term re-vegetation targets have been reached.	Documentation (reports, checklists, etc) demonstrating that supplementary preconstruction surveys have been completed; and site-specific biodiversity management plans have been drafted and implemented where necessary. Reinstatement plan to include increasing trend in vegetation regrowth and plant species that support forage, refuge and nesting.	Comprehensive data records from supplementary preconstruction surveys Compliance with site-specific management plans. Reinstatement completed according to reinstatement plan.	Minimum of 7 days before vegetation clearance commences for preclearance surveys. There-after weekly until sites are reinstated for compliance with biodiversity management plan; there-after monthly until sites are fully restored.	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, NFA, District Environment Officers, PAU

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
89 Hoima Wambabya River	Wambabya River	Loss of Habitat to Species of Conservation Importance	Loss of chimpanzee habitat trees	Biodiversity management plan Reinstatement plan.	Preconstruction biodiversity surveys will be undertaken at locations identified in the baseline appendices of the environmental and social impact assessment to record details of habitats and species of conservation importance within the working areas. This information will be used to produce site specific biodiversity management plans that will identify fine-scale route changes (where feasible), mark features for retention and protection, develop biorestoration measures including seed collection, translocation and species propagation and provide details of the specific mitigation measures (such as seasonal construction restrictions) to be implemented to reduce impacts on biodiversity during construction. As part of the Biodiversity Management plan a vegetation removal method statement to reduce impacts on biodiversity will be developed. This will include but not be limited to measures such as: • directional felling of trees on land inside the RoW • avoiding damage to trees outside the RoW • identifying areas where strimming, coppicing or other works will be undertaken in advance of clearing.	Documentation (reports, checklists, etc) demonstrating that supplementary preconstruction surveys have been completed; and site-specific biodiversity management plans have been drafted and implemented where necessary. Reinstatement plan to include increasing trend in vegetation regrowth and plant species that support forage, refuge and nesting.	Comprehensive data records from supplementary preconstruction surveys Compliance with site-specific management plans. Reinstatement completed according to reinstatement plan.	Minimum of 7 days before vegetation clearance commences for preclearance surveys. There-after weekly until sites are reinstated for compliance with biodiversity management plan; there-after monthly until sites are fully restored.	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, NFA, District Environment Officers, PAU

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
28 - 34 Buliisa Sonso and Waisoke Rivers	Sonso and Waisoke Rivers	Disturbance or Harm to Wildlife	Mortality to Ugandan shrew	Biodiversity management plan	Preconstruction biodiversity surveys will be undertaken at locations identified in the baseline appendices of the environmental and social impact assessment to record details of habitats and species of conservation importance within the working areas. This information will be used to produce site specific biodiversity management plans that will identify fine-scale route changes (where feasible), mark features for retention and protection, develop biorestoration measures including seed collection, translocation and species propagation and provide details of the specific mitigation measures (such as seasonal construction restrictions) to be implemented to reduce impacts on biodiversity during construction. As part of the Biodiversity Management plan a vegetation removal method statement to reduce impacts on biodiversity will be developed. This will include but not be limited to measures such as: • directional felling of trees on land inside the RoW • avoiding damage to trees outside the RoW • identifying areas where strimming, coppicing or other works will be undertaken in advance of clearing.	Documentation (reports, checklists, etc) demonstrating that supplementary preconstruction surveys have been completed; and site-specific biodiversity management plans have been drafted and implemented where necessary. Reinstatement plan to include increasing trend in vegetation regrowth and plant species that support forage, refuge and nesting.	Comprehensive data records from supplementary preconstruction surveys Compliance with site-specific management plans. Reinstatement completed according to reinstatement plan.	Minimum of 7 days before vegetation clearance commences for preclearance surveys. There-after weekly until sites are reinstated for compliance with biodiversity management plan; there-after monthly until sites are fully restored.	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, District Environment Officers, PAU

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
21 - 22 Buliisa Locations of yperus papyrus dominated swamp	Locations of *yperus papyrus* dominated swamp	Loss of Habitat to Species of Conservation Importance	Temporary and permanent loss of swamp habitat supporting *Nymphaea nouchali*	Biodiversity management plan	Preconstruction biodiversity surveys will be undertaken at locations identified in the baseline appendices of the environmental and social impact assessment to record details of habitats and species of conservation importance within the working areas. This information will be used to produce site specific biodiversity management plans that will identify fine-scale route changes (where feasible), mark features for retention and protection, develop biorestoration measures including seed collection, translocation and species propagation and provide details of the specific mitigation measures (such as seasonal construction restrictions) to be implemented to reduce impacts on biodiversity during construction. As part of the Biodiversity Management plan a vegetation removal method statement to reduce impacts on biodiversity will be developed. This will include but not be limited to measures such as: • directional felling of trees on land inside the RoW • avoiding damage to trees outside the RoW • identifying areas where strimming, coppicing or other works will be undertaken in advance of clearing.	Documentation (reports, checklists, etc) demonstrating that supplementary preconstruction surveys have been completed; and site-specific biodiversity management plans have been drafted and implemented where necessary. Reinstatement plan to include increasing trend in vegetation regrowth and plant species that support forage, refuge and nesting.	Comprehensive data records from supplementary preconstruction surveys Compliance with site-specific management plans. Reinstatement completed according to reinstatement plan.	Minimum of 7 days before vegetation clearance commences for preclearance surveys. There-after weekly until sites are reinstated for compliance with biodiversity management plan; there-after monthly until sites are fully restored.	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, District Environment Officers, PAU, DWRM, WMD

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Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
81 - 82 Hoima Locations of dry acacia woodland	Locations of dry acacia woodland	Loss of Habitat to Species of Conservation Importance	Loss of dry acacia woodland, bushland or thicket with exotic species supporting *Milicia excelsa*	Biodiversity management plan	Preconstruction biodiversity surveys will be undertaken at locations identified in the baseline appendices of the environmental and social impact assessment to record details of habitats and species of conservation importance within the working areas. This information will be used to produce site specific biodiversity management plans that will identify fine-scale route changes (where feasible), mark features for retention and protection, develop biorestoration measures including seed collection, translocation and species propagation and provide details of the specific mitigation measures (such as seasonal construction restrictions) to be implemented to reduce impacts on biodiversity during construction. As part of the Biodiversity Management plan a vegetation removal method statement to reduce impacts on biodiversity will be developed. This will include but not be limited to measures such as: • directional felling of trees on land inside the RoW • avoiding damage to trees outside the RoW • identifying areas where strimming, coppicing or other works will be undertaken in advance of clearing.	Documentation (reports, checklists, etc) demonstrating that supplementary preconstruction surveys have been completed; and site-specific biodiversity management plans have been drafted and implemented where necessary. Reinstatement plan to include increasing trend in vegetation regrowth and plant species that support forage, refuge and nesting.	Comprehensive data records from supplementary preconstruction surveys Compliance with site-specific management plans. Reinstatement completed according to reinstatement plan.	Minimum of 7 days before vegetation clearance commences for preclearance surveys. There-after weekly until sites are reinstated for compliance with biodiversity management plan; there-after monthly until sites are fully restored.	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, District Environment Officers, PAU

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
7 - 56 Buliisa Hoima Locations of secondary thicket mixed with bushland species and riparian forest	Locations of secondary thicket mixed with bushland species and riparian forest	Loss of Habitat to Species of Conservation Importance	Permanent loss of secondary thicket mixed with bushland species and riparian forest supporting *Tamarindus indica*	Biodiversity management plan	Preconstruction biodiversity surveys will be undertaken at locations identified in the baseline appendices of the environmental and social impact assessment to record details of habitats and species of conservation importance within the working areas. This information will be used to produce site specific biodiversity management plans that will identify fine-scale route changes (where feasible), mark features for retention and protection, develop biorestoration measures including seed collection, translocation and species propagation and provide details of the specific mitigation measures (such as seasonal construction restrictions) to be implemented to reduce impacts on biodiversity during construction. As part of the Biodiversity Management plan a vegetation removal method statement to reduce impacts on biodiversity will be developed. This will include but not be limited to measures such as: • directional felling of trees on land inside the RoW • avoiding damage to trees outside the RoW • identifying areas where strimming, coppicing or other works will be undertaken in advance of clearing.	Documentation (reports, checklists, etc) demonstrating that supplementary preconstruction surveys have been completed; and site-specific biodiversity management plans have been drafted and implemented where necessary. Reinstatement plan to include increasing trend in vegetation regrowth and plant species that support forage, refuge and nesting.	Comprehensive data records from supplementary preconstruction surveys Compliance with site-specific management plans. Reinstatement completed according to reinstatement plan.	Minimum of 7 days before vegetation clearance commences for preclearance surveys. There-after weekly until sites are reinstated for compliance with biodiversity management plan; there-after monthly until sites are fully restored.	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, District Environment Officers, PAU

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Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
2 - 62 Buliisa Hoima Secondary thicket mixed with bushland species and Acacia polyacantha woodland in farmland	Secondary thicket mixed with bushland species and *Acacia polyacantha* woodland in farmland	Loss of Habitat to Species of Conservation Importance	Temporary loss of secondary thicket mixed with bushland species and *Acacia polyacantha* woodland in farmland supporting *Tamarindus indica*	Biodiversity management plan	Preconstruction biodiversity surveys will be undertaken at locations identified in the baseline appendices of the environmental and social impact assessment to record details of habitats and species of conservation importance within the working areas. This information will be used to produce site specific biodiversity management plans that will identify fine-scale route changes (where feasible), mark features for retention and protection, develop biorestoration measures including seed collection, translocation and species propagation and provide details of the specific mitigation measures (such as seasonal construction restrictions) to be implemented to reduce impacts on biodiversity during construction. As part of the Biodiversity Management plan a vegetation removal method statement to reduce impacts on biodiversity will be developed. This will include but not be limited to measures such as: • directional felling of trees on land inside the RoW • avoiding damage to trees outside the RoW • identifying areas where strimming, coppicing or other works will be undertaken in advance of clearing.	Documentation (reports, checklists, etc) demonstrating that supplementary preconstruction surveys have been completed; and site-specific biodiversity management plans have been drafted and implemented where necessary. Reinstatement plan to include increasing trend in vegetation regrowth and plant species that support forage, refuge and nesting.	Comprehensive data records from supplementary preconstruction surveys Compliance with site-specific management plans. Reinstatement completed according to reinstatement plan.	Minimum of 7 days before vegetation clearance commences for preclearance surveys. There-after weekly until sites are reinstated for compliance with biodiversity management plan; there-after monthly until sites are fully restored.	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, District Environment Officers, PAU

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
27 - 38 Buliisa Bugungu WR and KBA	Bugungu WR and KBA	Loss of Habitat and Disturbance or Harm to Wildlife	Loss of ecological function and integrity of protected site through impacts on species and habitats	Biodiversity management plan	Preconstruction biodiversity surveys will be undertaken at locations identified in the baseline appendices of the environmental and social impact assessment to record details of habitats and species of conservation importance within the working areas. This information will be used to produce site specific biodiversity management plans that will identify fine-scale route changes (where feasible), mark features for retention and protection, develop biorestoration measures including seed collection, translocation and species propagation and provide details of the specific mitigation measures (such as seasonal construction restrictions) to be implemented to reduce impacts on biodiversity during construction. As part of the Biodiversity Management plan a vegetation removal method statement to reduce impacts on biodiversity will be developed. This will include but not be limited to measures such as: • directional felling of trees on land inside the RoW • avoiding damage to trees outside the RoW • identifying areas where strimming, coppicing or other works will be undertaken in advance of clearing.	Documentation (reports, checklists, etc) demonstrating that supplementary preconstruction surveys have been completed; and site-specific biodiversity management plans have been drafted and implemented where necessary. Reinstatement plan to include increasing trend in vegetation regrowth and plant species that support forage, refuge and nesting.	Comprehensive data records from supplementary preconstruction surveys Compliance with site-specific management plans. Reinstatement completed according to reinstatement plan.	Minimum of 7 days before vegetation clearance commences for preclearance surveys. There-after weekly until sites are reinstated for compliance with biodiversity management plan; there-after monthly until sites are fully restored.	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, UWA, District Environment Officers, PAU
TBC Side slope areas with permanent benching	TBC	Visual intrusion of project components into landscape	Change of landscape character due to permanent benching of RoW in side slope areas	Reinstatement Plan Soil Management Plan	Recontouring should be sympathetic and in keeping with preconstruction profiles, where this is not precluded by risk to integrity of the pipeline or erosion considerations.	Before and after photographs with regard to contouring, drainage, waste and debris.	No significant change	Weekly during reinstatement	Project and Project contractors; Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, District Environment Officers, PAU

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
TBC Side slope areas with permanent benching	TBC	Visual intrusion of project components into landscape	Change of views in areas of permanent benching of RoW in side slope areas affecting views from small settlements, farms and unsealed roads	Reinstatement Plan Soil Management Plan	Recontouring should be sympathetic and in keeping with preconstruction profiles, where this is not precluded by risk to integrity of the pipeline or erosion considerations.	Before and after photographs with regard to contouring, drainage, waste and debris.	No significant change	Weekly during reinstatement	Project and Project contractors; Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, District Environment Officers, PAU

27.3-38.1 Buliisa Bugungu WR and KBA	Bugungu WR and KBA	Visual intrusion of project components into landscape	Change of landscape character due to site clearance and construction activities affecting landscape in area of natural scenic value	Biodiversity management plan Reinstatement plan Soil management plan	A strategy for tree removal and replanting will be developed; the strategy will consider: • where trees are to be removed, the species and size/age of trees that will be recorded prior to removal; data to be recorded includes: trunk diameter at chest height, number of each species, species and, location • the number of trees and species to be removed during construction • conservation value of the species to be removed • variety of species to be replanted • provenance of species used for replanting • the region-specific environmental characteristics influencing replanting success. Preconstruction surveys will be referred to when deciding suitable locations for replanting of translocated species or species planted to compensate for those removed during construction. Before construction personnel and equipment are demobilised, temporary buildings and equipment, aboveground and belowground infrastructure, utilities, tools and any excess material brought onsite or generated during construction and commissioning will be removed. All off ROW sites impacted upon will be reinstated to meet pre-entry agreements with the landowner and in accordance with location-specific reinstatement method statements or plans to be prepared and implemented. Location-specific closeout reports, including photographs, will be produced to document the condition of temporary sites at handover following reinstatement. A preconstruction survey, including photographs, will be undertaken to document the condition of the land on which the RoW, construction and permanent facilities and access roads will be located. The survey will include immovable assets, crops and any remediation required to the land before construction. The survey will: • provide baseline evidence in the event of a claim for damage • identify existing contamination such as illegal disposal • inform pre-entry agreements including: o agreement for temporary measures to be installed (e.g., during disruption to drainage or irrigation, temporary fencing) o reinstatement requirements. Pre-entry agreements will be made with landowners, including reinstatement requirements, before access onto a site.	Before and after photographs with regard to contouring, drainage, waste and debris.	No significant change	Weekly during reinstatement	Project and Project contractors; Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, District Environment Officers, PAU
27.3-38.1 Buliisa Bugungu WR and KBA	Bugungu WR and KBA	Visual intrusion of project components into landscape	Change of views due to site clearance and construction activities affecting views of land in area of natural scenic	Biodiversity management plan Reinstatement plan	A strategy for tree removal and replanting will be developed; the strategy will consider: • where trees are to be removed, the species and size/age of trees that will be recorded prior to removal; data to be recorded includes: trunk diameter at chest height, number of each species, species and, location • the number of trees and species to be removed during construction	Before and after photographs with regard to contouring, drainage, waste and debris.	No significant change	Weekly during reinstatement	Project and Project contractors; Government bodies who may

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
			value from houses and road	Soil management plan	• conservation value of the species to be removed • variety of species to be replanted • provenance of species used for replanting • the region-specific environmental characteristics influencing replanting success. Preconstruction surveys will be referred to when deciding suitable locations for replanting of translocated species or species planted to compensate for those removed during construction. Before construction personnel and equipment are demobilised, temporary buildings and equipment, aboveground and belowground infrastructure, utilities, tools and any excess material brought onsite or generated during construction and commissioning will be removed. All off ROW sites impacted upon will be reinstated to meet pre-entry agreements with the landowner and in accordance with location-specific reinstatement method statements or plans to be prepared and implemented. Location-specific closeout reports, including photographs, will be produced to document the condition of temporary sites at handover following reinstatement. A preconstruction survey, including photographs, will be undertaken to document the condition of the land on which the RoW, construction and permanent facilities and access roads will be located. The survey will include immovable assets, crops and any remediation required to the land before construction. The survey will: • provide baseline evidence in the event of a claim for damage • identify existing contamination such as illegal disposal • inform pre-entry agreements including: o agreement for temporary measures to be installed (e.g., during disruption to drainage or irrigation, temporary fencing) o reinstatement requirements. Pre-entry agreements will be made with landowners, including reinstatement requirements, before access onto a site.				conduct independent monitoring or review the data include: NEMA, MEMD, District Environment Officers, PAU

KP55 Buliisa	Rift escarpment	Visual intrusion of project components into landscape	Change of landscape character due to site clearance and construction activities affecting landscape in area with extensive views	Biodiversity management plan Reinstatement plan Soil management plan	A strategy for tree removal and replanting will be developed; the strategy will consider: • where trees are to be removed, the species and size/age of trees that will be recorded prior to removal; data to be recorded includes: trunk diameter at chest height, number of each species, species and, location • the number of trees and species to be removed during construction • conservation value of the species to be removed • variety of species to be replanted • provenance of species used for replanting • the region-specific environmental characteristics influencing replanting success. Preconstruction surveys will be referred to when deciding suitable locations for replanting of translocated species or species planted to compensate for those removed during construction. Before construction personnel and equipment are demobilised, temporary buildings and equipment, aboveground and belowground infrastructure, utilities, tools and any excess material brought onsite or generated during construction and commissioning will be removed. All off ROW sites impacted upon will be reinstated to meet pre-entry agreements with the landowner and in accordance with location-specific reinstatement method statements or plans to be prepared and implemented. Location-specific closeout reports, including photographs, will be produced to document the condition of temporary sites at handover following reinstatement. A preconstruction survey, including photographs, will be undertaken to document the condition of the land on which the RoW, construction and permanent facilities and access roads will be located. The survey will include immovable assets, crops and any remediation required to the land before construction. The survey will: • provide baseline evidence in the event of a claim for damage • identify existing contamination such as illegal disposal • inform pre-entry agreements including: o agreement for temporary measures to be installed (e.g., during disruption to drainage or irrigation, temporary fencing) o reinstatement requirements. Pre-entry agreements will be made with landowners, including reinstatement requirements, before access onto a site.	Before and after photographs with regard to contouring, drainage, waste and debris.	No significant change	Weekly during reinstatement	Project and Project contractors; Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, District Environment Officers, PAU
KP55 Buliisa	Rift escarpment	Visual intrusion of project components into landscape	Change of views due to site clearance and construction activities in area with extensive views	Biodiversity management plan Reinstatement plan	A strategy for tree removal and replanting will be developed; the strategy will consider: • where trees are to be removed, the species and size/age of trees that will be recorded prior to removal; data to be recorded includes: trunk diameter at chest height, number of each species, species and, location • the number of trees and species to be removed during construction	Before and after photographs with regard to contouring, drainage, waste and debris.	No significant change	Weekly during reinstatement	Project and Project contractors; Government bodies who may

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Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
				Soil management plan	• conservation value of the species to be removed • variety of species to be replanted • provenance of species used for replanting • the region-specific environmental characteristics influencing replanting success. Preconstruction surveys will be referred to when deciding suitable locations for replanting of translocated species or species planted to compensate for those removed during construction. Before construction personnel and equipment are demobilised, temporary buildings and equipment, aboveground and belowground infrastructure, utilities, tools and any excess material brought onsite or generated during construction and commissioning will be removed. All off ROW sites impacted upon will be reinstated to meet pre-entry agreements with the landowner and in accordance with location-specific reinstatement method statements or plans to be prepared and implemented. Location-specific closeout reports, including photographs, will be produced to document the condition of temporary sites at handover following reinstatement. A preconstruction survey, including photographs, will be undertaken to document the condition of the land on which the RoW, construction and permanent facilities and access roads will be located. The survey will include immovable assets, crops and any remediation required to the land before construction. The survey will: • provide baseline evidence in the event of a claim for damage • identify existing contamination such as illegal disposal • inform pre-entry agreements including: o agreement for temporary measures to be installed (e.g., during disruption to drainage or irrigation, temporary fencing) o reinstatement requirements. Pre-entry agreements will be made with landowners, including reinstatement requirements, before access onto a site.				conduct independent monitoring or review the data include: NEMA, MEMD, District Environment Officers, PAU

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Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Buliisa Hoima All locations sensitive to soil compaction	All locations sensitive to soil compaction	Soil compaction	Anaerobic conditions developing that restrict plant nutrient uptake efficiency and root development Loss of drainage capacity and poor plant establishment causing increased surface water ponding, runoff, soil erosion and decreased productivity	Biodiversity management plan Community health, safety and security plan Transport and road safety management plan	Vehicle movements will be restricted to defined access routes and demarcated working areas (unless in the event of an emergency).	Compressed soil; driving, parking and or storage of machinery, equipment or materials on reinstated RoW.	Zero noncompliance with relevant Project Management Plans	Weekly after reinstatement until vegetation is re-established	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, PAU, District Environment Officers
Buliisa Hoima All locations sensitive to soil erosion	All locations sensitive to soil erosion	Soil erosion	Loss of topsoil causing reduced fertility and impaired reinstatement	Soil management plan Reinstatement plan	Load-bearing/ground protection materials, such as bog mats and geotextile membranes under temporary haul roads, will be used to support heavy loads in areas of soft ground, including wetland areas. Local communities will be discouraged from using the RoW as an access road during construction through signage, awareness raising and the use of communication materials. Topsoil and subsoil stockpiles will be stored in accordance with the Soil Management Plan, be free draining and include gaps left in strategic locations to allow potential floodwater through. If topsoil is stored for more than six months, the stacks will be monitored for: • the presence of weeds, which will be controlled in accordance with the weed and pest control programme • compaction and erosion – corrective measures will be implemented if either is identified. Reinstatement will be undertaken as early as practicable following completion of construction activities in any ROW section or site.	Rills or gullies on topsoil stacks and or reinstated areas	No visible signs of erosion	Weekly until vegetation is established in reinstated areas	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, PAU, District Environment Officers

39 Buliisa Bubwe River	Bubwe River	Erosion and increased suspended sediment in watercourses	Erosion of river or channel banks, scour, sediment contamination of surface waters	Reinstatement plan Soil management plan	During open-cut watercourse crossing activities, bank and bed material will be segregated, stored away from the active channels, and not be placed where flow or drainage will be obstructed. As much riparian vegetation as possible will be left in place until immediately before a watercourse crossing needs to be made to maintain stability of the banks. During site preparation, the height of vegetation on the riverbanks will be reduced, but roots will not be disturbed, to dissuade animals from nesting. The vegetation will then be removed when the crossing is made and the area reinstated as quickly as possible. Where watercourse bank reinforcement is required, the impact on riparian habitats and riparian fauna will be assessed to determine if the reinstatement or reinforcement is sufficient to maintain connectivity along the riparian elements of the watercourse. Mitigation will be installed to maintain habitat connectivity. A strategy for tree removal and replanting will be developed; the strategy will consider: • where trees are to be removed, the species and size/age of trees that will be recorded prior to removal; data to be recorded includes: trunk diameter at chest height, number of each species, species and, location • the number of trees and species to be removed during construction • conservation value of the species to be removed • variety of species to be replanted • provenance of species used for replanting • the region-specific environmental characteristics influencing replanting success. Preconstruction surveys will be referred to when deciding suitable locations for replanting of translocated species or species planted to compensate for those removed during construction. Site specific erosion risk assessments will be completed by a qualified fluvial geomorphologist or soil scientist as appropriate; the information will be used to prepare a soil management plan and a reinstatement plan prior to construction. Erosion control measures will include but not be limited to: • consideration of information from preconstruction surveys • locations where soil compaction may result in increased sediment laden runoff to watercourses and waterbodies • details on construction through soft ground, considering the use of load-bearing materials to support heavy loads in soft ground • measures for working in areas of fragile and sensitive soils • restrictions to the storage of materials on steep slopes • provision for erosion and sediment control at watercourses. Location-specific method statements will be produced for watercourse crossing construction. These method statements will incorporate plans for:	Visual evidence of erosion of river banks and bank stability (cracks, sag, shearing) within 50m up and down stream of construction activities. Visual evidence of significant sedimentation (water colour, turbidity) greater than 50 m of construction activity.	Zero incidence of sedimentation greater than 50 m up- or downstream of crossings during construction Zero incidence of collapsed banks after reinstatement	Weekly after reinstatement until vegetation is re-established	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, PAU, MEMD, District Environment Officers, DWRM, WMD

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Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
					• erosion control • sediment control • maintaining environmental base flows downstream of water crossings for example by using measures such as pumping, channel diversions and fluming • notifying fisherfolk as appropriate • reinstatement • spill response equipment.				

21 - 25 Buliisa Waiga River	Waiga River	Management of waste and accidental release of oil or chemicals	Contamination of surface water	Soil management plan. Reinstatement plan. Waste management plan.	The storage of hazardous materials will be restricted to designated hazardous materials storage areas at least 50 m from any wetlands, surface watercourse or seasonal water channel. Such storage locations will be subject to site-specific environmental and social risk assessment that will inform site selection and the adoption of any additional mitigation measures. Storage areas for hazardous materials will be bunded (no drainage valves/holes), have impermeable floor and will be covered to minimise the ingress of rainwater. A refuelling procedure will be developed and implemented which will include but not be limited to: • details of mobile and static refuelling areas and equipment (e.g. impermeable drip trays) • regulatory/GIIP constraints of refuelling operations to sensitive environmental receptors • spill prevention measures • training on refuelling procedures. The grey water stream will be separated from black water (e.g. sewage), treated and either reused (e.g., for toilet flushing, dust suppression) or discharged, in accordance with the environment project standards and national environmental guidance and regulations. All wastewater discharges will comply with permit conditions and the project environmental standards. An industry-recognised manufactured grease trap will be installed at the outlet of the kitchen(s) facilities to prevent greases and fats from entering the grey water streams. Treated sewage effluent which is not reused will be preferentially discharged to land. Before any discharge, the soil permeability will be evaluated, and engineered soakaways will be constructed, where required, to avoid impacts on land, surface water drainage and groundwater. A spill response procedure based on Tier 1, 2 and 3 spill responsibilities defined in the Emergency Preparedness and Response Plan will be developed together with other responsible parties, and the necessary equipment and resources will be procured to implement it. The procedure will cover: • responses for any unintended or unauthorised release of a potentially hazardous material, identification of locations where spill response equipment and resources will be provided, and procedures for its deployment • contact details for the rapid response team and spill response organisation • notification requirements. All Tier 1, 2 and 3 spills will be reported in accordance with the project incident reporting system. In the event of a spillage of hazardous materials the following actions will take place: • A trained rapid response team will be mobilised • Spill response personnel and equipment will be provided to contain, cleanup and remediate (Tier 1 spills). A wider	Documentation demonstrating that project activities are in compliance with the soil management plan, reinstatement plan and waste management plan Site verification	Zero noncompliance with the soil management plan, reinstatement plan and waste management plan	Weekly	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, PAU, MEMD, District Environment Officers, DWRM, OPM (Disaster Preparedness)

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Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
					range of resources will be utilised to contain, cleanup and remediate Tier 2 and Tier 3 spills.				
28 - 29 Buliisa Waisoke River	Waisoke River	Management of waste and accidental release of oil or chemicals	Contamination of surface water	Soil management plan Reinstatement plan Waste management plan	The storage of hazardous materials will be restricted to designated hazardous materials storage areas at least 50 m from any wetlands, surface watercourse or seasonal water channel. Such storage locations will be subject to site-specific environmental and social risk assessment that will inform site selection and the adoption of any additional mitigation measures. Storage areas for hazardous materials will be bunded (no drainage valves/holes), have impermeable floor and will be covered to minimise the ingress of rainwater. A refuelling procedure will be developed and implemented which will include but not be limited to: • details of mobile and static refuelling areas and equipment (e.g. impermeable drip trays) • regulatory / GIIP constraints of refuelling operations to sensitive environmental receptors • spill prevention measures • training on refuelling procedures. The grey water stream will be separated from black water (e.g. sewage), treated and either reused (e.g., for toilet flushing, dust suppression) or discharged, in accordance with the environment project standards and national environmental guidance and regulations. All wastewater discharges will comply with permit conditions and the project environmental standards. An industry-recognised manufactured grease trap will be installed at the outlet of the kitchen(s) facilities to prevent greases and fats from entering the grey water streams. Treated sewage effluent which is not reused will be preferentially discharged to land. Before any discharge, the soil permeability will be evaluated, and engineered soakaways will be constructed, where required, to avoid impacts on land, surface water drainage and groundwater. A spill response procedure based on Tier 1, 2 and 3 spill responsibilities defined in the Emergency Preparedness and Response Plan will be developed together with other responsible parties, and the necessary equipment and resources will be procured to implement it. The procedure will cover: • responses for any unintended or unauthorised release of a potentially hazardous material, identification of locations where spill response equipment and resources will be provided, and procedures for its deployment	Documentation demonstrating that project activities are in compliance with the soil management plan, reinstatement plan and waste management plan Site verification	Zero noncompliance with the soil management plan, reinstatement plan and waste management plan	Weekly	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, PAU, MEMD, District Environment Officers, DWRM, OPM (Disaster Preparedness)

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
					• contact details for the rapid response team and spill response organisation • notification requirements. All Tier 1, 2 and 3 spills will be reported in accordance with the project incident reporting system. In the event of a spillage of hazardous materials the following actions will take place: • A trained rapid response team will be mobilised • Spill response personnel and equipment will be provided to contain, cleanup and remediate (Tier 1 spills). A wider range of resources will be utilised to contain, cleanup and remediate Tier 2 and Tier 3 spills.				
34.3 Buliisa Sonso River	Sonso River	Management of waste and accidental release of oil or chemicals	Contamination of surface water	Soil management plan Reinstatement plan Waste management plan	The storage of hazardous materials will be restricted to designated hazardous materials storage areas at least 50 m from any wetlands, surface watercourse or seasonal water channel. Such storage locations will be subject to site-specific environmental and social risk assessment that will inform site selection and the adoption of any additional mitigation measures. Storage areas for hazardous materials will be bunded (no drainage valves/holes), have impermeable floor and will be covered to minimise the ingress of rainwater. A refuelling procedure will be developed and implemented which will include but not be limited to: • details of mobile and static refuelling areas and equipment (e.g. impermeable drip trays) • regulatory / GIIP constraints of refuelling operations to sensitive environmental receptors • spill prevention measures • training on refuelling procedures. The grey water stream will be separated from black water (e.g. sewage), treated and either reused (e.g., for toilet flushing, dust suppression) or discharged, in accordance with the environment project standards and national environmental guidance and regulations. All wastewater discharges will comply with permit conditions and the project environmental standards. An industry-recognised manufactured grease trap will be installed at the outlet of the kitchen(s) facilities to prevent greases and fats from entering the grey water streams. Treated sewage effluent which is not reused will be preferentially discharged to land. Before any discharge, the soil permeability will be evaluated, and engineered soakaways	Documentation demonstrating that project activities are in compliance with the soil management plan, reinstatement plan and waste management plan Site verification	Zero noncompliance with the soil management plan, reinstatement plan and waste management plan	Weekly	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, PAU, MEMD, District Environment Officers, DWRM, OPM (Disaster Preparedness)

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
					will be constructed, where required, to avoid impacts on land, surface water drainage and groundwater. A spill response procedure based on Tier 1, 2 and 3 spill responsibilities defined in the Emergency Preparedness and Response Plan will be developed together with other responsible parties, and the necessary equipment and resources will be procured to implement it. The procedure will cover: • responses for any unintended or unauthorised release of a potentially hazardous material, identification of locations where spill response equipment and resources will be provided, and procedures for its deployment • contact details for the rapid response team and spill response organisation • notification requirements. All Tier 1, 2 and 3 spills will be reported in accordance with the project incident reporting system. In the event of a spillage of hazardous materials the following actions will take place: • A trained rapid response team will be mobilised • Spill response personnel and equipment will be provided to contain, cleanup and remediate (Tier 1 spills). A wider range of resources will be utilised to contain, cleanup and remediate Tier 2 and Tier 3 spills.				

39 Buliisa Bubwe River	Bubwe River	Management of waste and accidental release of oil or chemicals	Contamination of surface water	Soil management plan Reinstatement plan Waste management plan	The storage of hazardous materials will be restricted to designated hazardous materials storage areas at least 50 m from any wetlands, surface watercourse or seasonal water channel. Such storage locations will be subject to site-specific environmental and social risk assessment that will inform site selection and the adoption of any additional mitigation measures. Storage areas for hazardous materials will be bunded (no drainage valves/holes), have impermeable floor and will be covered to minimise the ingress of rainwater. A refuelling procedure will be developed and implemented which will include but not be limited to: • details of mobile and static refuelling areas and equipment (e.g. impermeable drip trays) • regulatory/GIIP constraints of refuelling operations to sensitive environmental receptors • spill prevention measures • training on refuelling procedures. The grey water stream will be separated from black water (e.g. sewage), treated and either reused (e.g., for toilet flushing, dust suppression) or discharged, in accordance with the environment project standards and national environmental guidance and regulations. All wastewater discharges will comply with permit conditions and the project environmental standards. An industry-recognised manufactured grease trap will be installed at the outlet of the kitchen(s) facilities to prevent greases and fats from entering the grey water streams. Treated sewage effluent which is not reused will be preferentially discharged to land. Before any discharge, the soil permeability will be evaluated, and engineered soakaways will be constructed, where required, to avoid impacts on land, surface water drainage and groundwater. A spill response procedure based on Tier 1, 2 and 3 spill responsibilities defined in the Emergency Preparedness and Response Plan will be developed together with other responsible parties, and the necessary equipment and resources will be procured to implement it. The procedure will cover: • responses for any unintended or unauthorised release of a potentially hazardous material, identification of locations where spill response equipment and resources will be provided, and procedures for its deployment • contact details for the rapid response team and spill response organisation • notification requirements. All Tier 1, 2 and 3 spills will be reported in accordance with the project incident reporting system. In the event of a spillage of hazardous materials the following actions will take place: • A trained rapid response team will be mobilised • Spill response personnel and equipment will be provided to contain, cleanup and remediate (Tier 1 spills). A wider	Documentation demonstrating that project activities are in compliance with the soil management plan, reinstatement plan and waste management plan Site verification	Zero noncompliance with the soil management plan, reinstatement plan and waste management plan	Weekly	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, PAU, MEMD, District Environment Officers, DWRM, OPM (Disaster Preparedness)

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
					range of resources will be utilised to contain, cleanup and remediate Tier 2 and Tier 3 spills.				
44 Buliisa Ephemeral wetland	Ephemeral wetland	Management of waste and accidental release of oil or chemicals	Contamination of surface water	Soil management plan Reinstatement plan Waste management plan	The storage of hazardous materials will be restricted to designated hazardous materials storage areas at least 50 m from any wetlands, surface watercourse or seasonal water channel. Such storage locations will be subject to site-specific environmental and social risk assessment that will inform site selection and the adoption of any additional mitigation measures. Storage areas for hazardous materials will be bunded (no drainage valves/holes), have impermeable floor and will be covered to minimise the ingress of rainwater. A refuelling procedure will be developed and implemented which will include but not be limited to: • details of mobile and static refuelling areas and equipment (e.g. impermeable drip trays) • regulatory / GIIP constraints of refuelling operations to sensitive environmental receptors • spill prevention measures • training on refuelling procedures. The grey water stream will be separated from black water (e.g. sewage), treated and either reused (e.g., for toilet flushing, dust suppression) or discharged, in accordance with the environment project standards and national environmental guidance and regulations. All wastewater discharges will comply with permit conditions and the project environmental standards. An industry-recognised manufactured grease trap will be installed at the outlet of the kitchen(s) facilities to prevent greases and fats from entering the grey water streams. Treated sewage effluent which is not reused will be preferentially discharged to land. Before any discharge, the soil permeability will be evaluated, and engineered soakaways will be constructed, where required, to avoid impacts on land, surface water drainage and groundwater. A spill response procedure based on Tier 1, 2 and 3 spill responsibilities defined in the Emergency Preparedness and Response Plan will be developed together with other responsible parties, and the necessary equipment and resources will be procured to implement it. The procedure will cover: • responses for any unintended or unauthorised release of a potentially hazardous material, identification of locations where spill response equipment and resources will be provided, and procedures for its deployment	Documentation demonstrating that project activities are in compliance with the soil management plan, reinstatement plan and waste management plan Site verification	Zero noncompliance with the soil management plan, reinstatement plan and waste management plan	Weekly	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, PAU, MEMD, District Environment Officers, DWRM, OPM (Disaster Preparedness)

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
					• contact details for the rapid response team and spill response organisation • notification requirements. All Tier 1, 2 and 3 spills will be reported in accordance with the project incident reporting system. In the event of a spillage of hazardous materials the following actions will take place: • A trained rapid response team will be mobilised • Spill response personnel and equipment will be provided to contain, cleanup and remediate (Tier 1 spills). A wider range of resources will be utilised to contain, cleanup and remediate Tier 2 and Tier 3 spills.				
44 Buliisa MCPY	MCPY	Management of waste and accidental release of oil or chemicals	Contamination of groundwater	Waste management plan Pollution prevention plan	The storage of hazardous materials will be restricted to designated hazardous materials storage areas at least 50 m from any wetlands, surface watercourse or seasonal water channel. Such storage locations will be subject to site-specific environmental and social risk assessment that will inform site selection and the adoption of any additional mitigation measures. Storage areas for hazardous materials will be bunded (no drainage valves/holes), have impermeable floor and will be covered to minimise the ingress of rainwater. A refuelling procedure will be developed and implemented which will include but not be limited to: • details of mobile and static refuelling areas and equipment (e.g. impermeable drip trays) • regulatory/GIIP constraints of refuelling operations to sensitive environmental receptors • spill prevention measures • training on refuelling procedures. The grey water stream will be separated from black water (e.g. sewage), treated and either reused (e.g., for toilet flushing, dust suppression) or discharged, in accordance with the environment project standards and national environmental guidance and regulations. All wastewater discharges will comply with permit conditions and the project environmental standards. An industry-recognised manufactured grease trap will be installed at the outlet of the kitchen(s) facilities to prevent greases and fats from entering the grey water streams. Treated sewage effluent which is not reused will be preferentially discharged to land. Before any discharge, the soil permeability will be evaluated, and engineered soakaways	Site verification of compliance with waste management plan and pollution prevention plan Number of related complaints Documentation relating to groundwater monitoring Visual inspection for evidence of contamination or sediment run-off	Zero noncompliance with waste management plan and pollution prevention plan Continuous improvement on percentage of unresolved complaints regarding potable water supply after Project has proposed solution(s) during engagement Groundwater monitoring results meet project environmental standards No evidence of contamination or sediment run-off	Monthly - complaints, groundwater monitoring Weekly- site inspections	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, PAU, MEMD, District Environment Officers, DWRM, OPM (Disaster Preparedness)

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
					will be constructed, where required, to avoid impacts on land, surface water drainage and groundwater. A spill response procedure based on Tier 1, 2 and 3 spill responsibilities defined in the Emergency Preparedness and Response Plan will be developed together with other responsible parties, and the necessary equipment and resources will be procured to implement it. The procedure will cover: • responses for any unintended or unauthorised release of a potentially hazardous material, identification of locations where spill response equipment and resources will be provided, and procedures for its deployment • contact details for the rapid response team and spill response organisation • notification requirements. All Tier 1, 2 and 3 spills will be reported in accordance with the project incident reporting system. In the event of a spillage of hazardous materials the following actions will take place: • A trained rapid response team will be mobilised • Spill response personnel and equipment will be provided to contain, cleanup and remediate (Tier 1 spills). A wider range of resources will be utilised to contain, cleanup and remediate Tier 2 and Tier 3 spills.				

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa MCPY	MCPY	Management of black and grey water	Contamination of groundwater	Waste management plan Pollution prevention plan	The storage of hazardous materials will be restricted to designated hazardous materials storage areas at least 50 m from any wetlands, surface watercourse or seasonal water channel. Such storage locations will be subject to site-specific environmental and social risk assessment that will inform site selection and the adoption of any additional mitigation measures. Storage areas for hazardous materials will be bunded (no drainage valves/holes), have impermeable floor and will be covered to minimise the ingress of rainwater. A refuelling procedure will be developed and implemented which will include but not be limited to: • details of mobile and static refuelling areas and equipment (e.g. impermeable drip trays) • regulatory/GIIP constraints of refuelling operations to sensitive environmental receptors • spill prevention measures • training on refuelling procedures. The grey water stream will be separated from black water (e.g. sewage), treated and either reused (e.g., for toilet flushing, dust suppression) or discharged, in accordance with the environment project standards and national environmental guidance and regulations. All wastewater discharges will comply with permit conditions and the project environmental standards. An industry-recognised manufactured grease trap will be installed at the outlet of the kitchen(s) facilities to prevent greases and fats from entering the grey water streams. Treated sewage effluent which is not reused will be preferentially discharged to land. Before any discharge, the soil permeability will be evaluated, and engineered soakaways will be constructed, where required, to avoid impacts on land, surface water drainage and groundwater.	Site verification of compliance with waste management plan and pollution prevention plan Number of related complaints Documentation relating to groundwater monitoring Visual inspection for evidence of contamination or sediment run-off	Zero noncompliance with waste management plan and pollution prevention plan Continuous improvement on percentage of unresolved complaints regarding potable water supply after Project has proposed solution(s) during engagement Groundwater monitoring results meet project environmental standards No evidence of contamination or sediment run-off	Monthly - complaints, groundwater monitoring Weekly- site inspections	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, PAU, MEMD, District Environment Officers, DWRM

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa MCPY	MCPY	Abstraction of groundwater	Decreased water level due to abstraction for project use	Natural resource management plan	As part of the permit application, hydraulic testing and hydrogeological impact assessments will be undertaken to evaluate the potential impact on local groundwater abstraction points. If the assessment indicates potential impacts to local users, alternative borehole locations will be considered and these alternative locations will be subject to the same testing and impact assessment process. Groundwater levels will be monitored once every two weeks by the Project at all sites where groundwater abstraction occurs for the project. The location of monitoring well(s) will be determined by a qualified hydrogeologist to ensure that they are installed in the correct formation and at the correct distance between project abstraction boreholes and community water points. If the local water supplies are derogated to the extent that complaints are made by the community as a result of project abstraction, then the Project will provide alternative water supplies at a convenient location for the community that is not or is less influenced by the project's abstraction.	Documentation (reports, checklists, etc) demonstrating that water-use checks have occurred and are within permit conditions.	Zero noncompliance with water abstraction permit or the Natural Resource Management Plan.	Weekly – during water abstraction activities.	Project Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, PAU, MEMD, District Environment Officers, DWRM
44 Buliisa MCPY	MCPY	Release of gases, exhausts and vapours to atmosphere	Emissions of gaseous substances causing reduced air quality from operation of generators	Pollution prevention plan	To minimise emissions to air, vehicles, machines and equipment will: • be appropriate for the task required • have a valid maintenance and inspection certificate or log books • be allocated a unique identifier to be used in a maintenance log • be maintained regularly in accordance with the manufacturer's recommendations to maximise fuel efficiency and help reduce emissions • not be allowed to idle – engines will be switched off when not in use. Vehicles or equipment seen to be emitting excessive black smoke will not be permitted to continue work and will be sent for maintenance.	Zero noncompliance with pollution prevention plan	Zero noncompliance with pollution prevention plan	Weekly	Project and Project contractors; Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, District Environment Officers, PAU, MGLSD (OSH Department)

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Hydrotest Sections	Hydrotest Sections	Release of gases, exhausts and vapours to atmosphere	Emissions of gaseous substances causing reduced air quality from operation of generators	Pollution prevention plan	To minimise emissions to air, vehicles, machines and equipment will: • be appropriate for the task required • have a valid maintenance and inspection certificate or log books • be allocated a unique identifier to be used in a maintenance log • be maintained regularly in accordance with the manufacturer's recommendations to maximise fuel efficiency and help reduce emissions • not be allowed to idle – engines will be switched off when not in use. Vehicles or equipment seen to be emitting excessive black smoke will not be permitted to continue work and will be sent for maintenance.	Zero noncompliance with pollution prevention plan	Zero noncompliance with pollution prevention plan	Weekly	Project and Project contractors; Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, District Environment Officers, PAU, OSH Department - MGLSD
44 Buliisa MCPY	MCPY	Release of gases, exhausts and vapours to atmosphere	Emissions of fine particulate matter causing reduced air quality from operation of generators	Pollution prevention plan	To minimise emissions to air, vehicles, machines and equipment will: • be appropriate for the task required • have a valid maintenance and inspection certificate or log books • be allocated a unique identifier to be used in a maintenance log • be maintained regularly in accordance with the manufacturer's recommendations to maximise fuel efficiency and help reduce emissions • not be allowed to idle – engines will be switched off when not in use. Vehicles or equipment seen to be emitting excessive black smoke will not be permitted to continue work and will be sent for maintenance.	Zero noncompliance with pollution prevention plan	Zero noncompliance with pollution prevention plan	Weekly	Project and Project contractors; Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, District Environment Officers, PAU, OSH Department - MGLSD

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Hydrotest Sections	Hydrotest Sections	Release of gases, exhausts and vapours to atmosphere	Emissions of fine particulate matter causing reduced air quality from operation of generators	Pollution prevention plan	To minimise emissions to air, vehicles, machines and equipment will: • be appropriate for the task required • have a valid maintenance and inspection certificate or log books • be allocated a unique identifier to be used in a maintenance log • be maintained regularly in accordance with the manufacturer's recommendations to maximise fuel efficiency and help reduce emissions • not be allowed to idle – engines will be switched off when not in use. Vehicles or equipment seen to be emitting excessive black smoke will not be permitted to continue work and will be sent for maintenance.	Zero noncompliance with pollution prevention plan	Zero noncompliance with pollution prevention plan	Weekly	Project and Project contractors; Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, District Environment Officers, PAU, OSH Department - MGLSD
44 Buliisa MCPY	MCPY	Dust	Nuisance from mobilisation of dust by project vehicles	Pollution prevention plan Transport and road safety management plan	Where construction generated dust may affect sensitive receptors, the following mitigation measures will be considered: • dust suppression at work-sites and transport routes • adherence to RoW speed limits supplemented by awareness training • sheeting of fine materials being transported or stored on-site.	Implementation of dust suppression measures Site verification Number of related complaints	Zero noncompliance with dust suppression measures described in the Pollution Prevention Plan Continuous improvement on percentage of unresolved complaints on project vehicle dust emissions after Project has proposed solution(s) during engagement	Weekly – site verification Monthly – complaints, documentation	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, District Environment Officers, PAU, OSH Department - MGLSD

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
Hydrotest Sections	Hydrotest Sections	Dust	Nuisance from mobilisation of dust by project vehicles	Pollution prevention plan. Transport and road safety management plan	Where construction generated dust may affect sensitive receptors, the following mitigation measures will be considered: • dust suppression at work-sites and transport routes • adherence to RoW speed limits supplemented by awareness training • sheeting of fine materials being transported or stored on-site.	Implementation of dust suppression measures Site verification Number of related complaints	Zero noncompliance with dust suppression measures described in the Pollution Prevention Plan Continuous improvement on percentage of unresolved complaints on project vehicle dust emissions after Project has proposed solution(s) during engagement	Weekly – site verification Monthly – complaints, documentation	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, District Environment Officers, PAU, OSH Department - MGLSD
44 Buliisa MCPY	MCPY	Noise	Disturbance or nuisance from noise generation during development of construction facilities	Pollution prevention plan	Project noise emissions will not result in an exceedance of PES or national legislative noise criteria at any existing sensitive receptor site. Location specific assessments will be undertaken at sensitive receptors in proximity to project activities occurring between 7 p.m. and 7 a.m. to identify appropriate mitigation where there is potential to cause disturbance from noise and vibration. Preference will be given to selecting low noise and vibration emitting equipment for all construction works. To minimise emissions to air, vehicles, machines and equipment will: • be appropriate for the task required • have a valid maintenance and inspection certificate or log books • be allocated a unique identifier to be used in a maintenance log • be maintained regularly in accordance with the manufacturer's recommendations to maximise fuel efficiency and help reduce emissions • not be allowed to idle – engines will be switched off when not in use.	Noise levels at sensitive receptors; field verification. Number of related complaints. Documentation to support that all combustion equipment on any Project or contractor site is up to date on manufacturer's recommended maintenance and servicing.	Zero exceedance of project environmental standards. Continuous improvement on percentage of unresolved complaints on noise after Project has proposed solution(s) during engagement. Zero noncompliance with scheduled servicing and maintenance of combustion equipment.	Weekly for noise level monitoring at sensitive receptors. Monthly for documentation.	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, District Environment Officers, OSH Department - MGLSD

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa MCPY	MCPY	Vibration	Disturbance or damage due to vibration generation during development of construction facilities	Pollution prevention plan Stakeholder engagement plan	A preconstruction record of condition, including a photographic log, will be developed. The validity of any claims of damage resulting from project activities will be assessed against the preconstruction record of condition, repairs will be undertaken or appropriate compensation paid if damage is proven. Preference will be given to selecting low noise and vibration emitting equipment for all construction works. Activities that generate high levels of noise and vibration will be assessed to determine potential impacts and mitigation will be implemented where appropriate. Notifications of work will be given at least 72 hrs in advance of work to residents/occupants located within: • 100 m of RoW prior to trenching • 50 m of RoW prior to lowering and laying of pipe • 50 m of RoW prior to backfilling and compaction • 250 m of any road upgrades and new access roads.	Preconstruction record of condition. Documentation demonstrating noise and vibration assessments have been completed. Number of related complaints	Comprehensive preconstruction record of condition. Noise and vibration evaluations completed at sensitive receptors. Continuous improvement on percentage of unresolved complaints on noise after Project has proposed solution(s) during engagement	Once 30 days before construction commences for preconstruction record of condition and noise and vibration evaluations. Monthly for complaints.	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, District Environment Officers, OSH Department - MGLSD
44 Buliisa MCPY	MCPY	Noise	Disturbance or nuisance from operation of the MCPY	Pollution prevention plan.	Project noise emissions will not result in an exceedance of PES or national legislative noise criteria at any existing sensitive receptor site. Location specific assessments will be undertaken at sensitive receptors in proximity to project activities occurring between 7 p.m. and 7 a.m. to identify appropriate mitigation where there is potential to cause disturbance from noise and vibration. Preference will be given to selecting low noise and vibration emitting equipment for all construction works. To minimise emissions to air, vehicles, machines and equipment will: • be appropriate for the task required • have a valid maintenance and inspection certificate or log books • be allocated a unique identifier to be used in a maintenance log • be maintained regularly in accordance with the manufacturer's recommendations to maximise fuel efficiency and help reduce emissions • not be allowed to idle – engines will be switched off when not in use.	Noise levels at sensitive receptors; field verification. Number of related complaints. Documentation to support that all combustion equipment on any Project or contractor site is up to date on manufacturer's recommended maintenance and servicing.	Zero exceedance of project environmental standards. Continuous improvement on percentage of unresolved complaints on noise after Project has proposed solution(s) during engagement. Zero noncompliance with scheduled servicing and maintenance of combustion equipment.	Weekly for noise level monitoring at sensitive receptors. Monthly for documentation.	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, District Environment Officers, OSH Department - MGLSD

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa MCPY	MCPY	Noise	Disturbance or nuisance from noise generation during decommissioning of construction facilities	Pollution prevention plan.	A preconstruction record of condition, including a photographic log, will be developed. The validity of any claims of damage resulting from project activities will be assessed against the preconstruction record of condition, repairs will be undertaken or appropriate compensation paid if damage is proven. Preference will be given to selecting low noise and vibration emitting equipment for all construction works. Activities that generate high levels of noise and vibration will be assessed to determine potential impacts and mitigation will be implemented where appropriate. Notifications of work will be given at least 72 hrs in advance of work to residents/occupants located within: • 100 m of RoW prior to trenching • 50 m of RoW prior to lowering and laying of pipe • 50 m of RoW prior to backfilling and compaction • 250 m of any road upgrades and new access roads.	Noise levels at sensitive receptors; field verification. Number of related complaints. Documentation to support that all combustion equipment on any Project or contractor site is up to date on manufacturer's recommended maintenance and servicing.	Zero exceedance of project environmental standards. Continuous improvement on percentage of unresolved complaints on noise after Project has proposed solution(s) during engagement. Zero noncompliance with scheduled servicing and maintenance of combustion equipment.	Weekly for noise level monitoring at sensitive receptors. Monthly for documentation.	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, District Environment Officers, OSH Department - MGLSD
44 Buliisa MCPY	MCPY	Vibration	Disturbance or damage from vibration generation during decommissioning of construction facilities	Pollution prevention plan. Stakeholder engagement plan.	A preconstruction record of condition, including a photographic log, will be developed. The validity of any claims of damage resulting from project activities will be assessed against the preconstruction record of condition, repairs will be undertaken or appropriate compensation paid if damage is proven. Preference will be given to selecting low noise and vibration emitting equipment for all construction works. Activities that generate high levels of noise and vibration will be assessed to determine potential impacts and mitigation will be implemented where appropriate. Notifications of work will be given at least 72 hrs in advance of work to residents / occupants located within: • 100 m of RoW prior to trenching • 50 m of RoW prior to lowering and laying of pipe • 50 m of RoW prior to backfilling and compaction • 250 m of any road upgrades and new access roads.	Noise levels at sensitive receptors; field verification. Number of related complaints. documentation to support that all combustion equipment on any Project or contractor site is up to date on manufacturer's recommended maintenance and servicing.	Zero exceedance of project environmental standards. Continuous improvement on percentage of unresolved complaints on noise after Project has proposed solution(s) during engagement. Zero noncompliance with scheduled servicing and maintenance of combustion equipment.	Weekly for noise level monitoring at sensitive receptors. Monthly for documentation.	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, District Environment Officers, OSH Department - MGLSD

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa PACs near the MCPY	PACs near the MCPY	Employment	Dissatisfaction arising from unmet expectations over the scale and duration of project local employment opportunities	Stakeholder engagement plan Project-induced in-migration management plan	The Project will develop a campaign focused on providing realistic community expectations with regard to livelihood options and employment opportunities. An approved recruitment procedure will be implemented that: • is transparent and open to all regardless of race, political opinion, colour, creed, sexuality or gender • includes a local recruitment strategy • considers social and cultural sensitivities • describes the employment criteria for the recruitment of professional, semiskilled and unskilled labour • prohibits discrimination or harassment of job applicants. Job descriptions will advertise vacancies in local languages in the PACs through accessible media and on the project website. Targets for local recruitment from project-affected communities will be set by the project. These will be designed to meet legal requirements. An employment office will be established in the local area to conduct local recruitment. A public awareness programme to communicate employment and training opportunities will be implemented that includes but is not limited to: • the local recruitment strategy • criteria for employment • the number and types of employment opportunities • the procedure for applying for employment. Information will be disseminated publicly, including via media announcements at regional and national levels and during public meetings in PACs. Care will be taken to reach women and vulnerable groups if necessary through targeted meetings scheduled at times and locations that may increase women's participation.	Documentation demonstrating worker awareness training on limited duration of employment and need to maintain existing livelihoods. Effective messaging to PACs (stakeholder engagement records). Number of related complaints.	Full coverage of workforce training at start of employment. Continuous improvement on percentage of unresolved related complaints after Project has proposed solution(s) during engagement	Monthly	Project and Project contractors; Government agencies who may conduct independent monitoring or review include: MEMD, PAU, MGLSD, District Local Governments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa PACs near the MCPY	PACs near the MCPY	Employment	Competition over employment opportunities	Stakeholder engagement plan Project-induced in-migration management plan	An approved recruitment procedure will be implemented that: • is transparent and open to all regardless of race, political opinion, colour, creed, sexuality or gender • includes a local recruitment strategy • considers social and cultural sensitivities • describes the employment criteria for the recruitment of professional, semiskilled and unskilled labour • prohibits discrimination or harassment of job applicants. Job descriptions will advertise vacancies in local languages in the PACs through accessible media and on the project website. Targets for local recruitment from project-affected communities will be set by the project. These will be designed to meet legal requirements. An employment office will be established in the local area to conduct local recruitment. A public awareness programme to communicate employment and training opportunities will be implemented that includes but is not limited to: • the local recruitment strategy • criteria for employment • the number and types of employment opportunities • the procedure for applying for employment. Information will be disseminated publicly, including via media announcements at regional and national levels and during public meetings in PACs. Care will be taken to reach women and vulnerable groups if necessary through targeted meetings scheduled at times and locations that may increase women's participation.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding • recruitment opportunities and process • grievance procedure • number of related complaints.	Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Quarterly	Project and project contractors; Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, MGLSD, District Local Governments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
6 Buliisa Kisansya	Kisansya	Temporary road closure	Increased transportation costs and travel time with economic consequences	Infrastructure and utilities management plan Stakeholder engagement plan	Any planned diversion of utility services, closures of any road or track, or planned traffic diversions will be communicated to local authorities and affected communities at least 72 hours before the works. Information provided to the community will include (as relevant to the diversion) but not be limited to details of the timing and duration of the diversion; the route of traffic diversions; and traffic control measures for road crossings where delays and public safety are key factors. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding: notification; grievance procedure; compensation process. Number of related complaints	Continuous improvement on percentage of unresolved complaints on employment after Project has proposed solution(s) during engagement	Quarterly	Project in consultation with respective utility service providers; Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, Local police, District Local Governments
8 Buliisa Kijangi and Buliisa Town	Kijangi and Buliisa Town	Temporary road closure	Increased transportation costs and travel time with economic consequences	Infrastructure and utilities management plan Stakeholder engagement plan	Any planned diversion of utility services, closures of any road or track, or planned traffic diversions will be communicated to local authorities and affected communities at least 72 hours before the works. Information provided to the community will include (as relevant to the diversion) but not be limited to details of the timing and duration of the diversion; the route of traffic diversions; and traffic control measures for road crossings where delays and public safety are key factors. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding: notification; grievance procedure; compensation process. Number of related complaints	Continuous improvement on percentage of unresolved complaints on employment after Project has proposed solution(s) during engagement	Quarterly	Project in consultation with respective utility service providers; Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, Local police, District Local Governments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44.5 Buliisa Booma	Booma	Temporary road closure	Increased transportation costs and travel time with economic consequences	Infrastructure and utilities management plan Stakeholder engagement plan	Any planned diversion of utility services, closures of any road or track, or planned traffic diversions will be communicated to local authorities and affected communities at least 72 hours before the works. Information provided to the community will include (as relevant to the diversion) but not be limited to details of the timing and duration of the diversion; the route of traffic diversions; and traffic control measures for road crossings where delays and public safety are key factors. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding: notification; grievance procedure; compensation process. Number of related complaints	Continuous improvement on percentage of unresolved complaints on employment after Project has proposed solution(s) during engagement	Quarterly	Project in consultation with respective utility service providers; Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, Local police, District Local Governments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
45.5 Buliisa Piida A	Piida A	Temporary road closure	Increased transportation costs and travel time with economic consequences	Infrastructure and utilities management plan Stakeholder engagement plan	Any planned diversion of utility services, closures of any road or track, or planned traffic diversions will be communicated to local authorities and affected communities at least 72 hours before the works. Information provided to the community will include (as relevant to the diversion) but not be limited to details of the timing and duration of the diversion; the route of traffic diversions; and traffic control measures for road crossings where delays and public safety are key factors. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding: notification; grievance procedure; compensation process. Number of related complaints	Continuous improvement on percentage of unresolved complaints on employment after Project has proposed solution(s) during engagement	Quarterly	Project in consultation with respective utility service providers; Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, Local police, District Local Governments
47 Hoima Waki-Kawaibanda	Waki-Kawaibanda	Temporary road closure	Increased transportation costs and travel time with economic consequences	Infrastructure and utilities management plan Stakeholder engagement plan	Any planned diversion of utility services, closures of any road or track, or planned traffic diversions will be communicated to local authorities and affected communities at least 72 hours before the works. Information provided to the community will include (as relevant to the diversion) but not be limited to details of the timing and duration of the diversion; the route of traffic diversions; and traffic control measures for road crossings where delays and public safety are key factors. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding: notification; grievance procedure; compensation process. Number of related complaints	Continuous improvement on percentage of unresolved complaints on employment after Project has proposed solution(s) during engagement	Quarterly	Project in consultation with respective utility service providers; Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, Local police, District Local Governments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
75 Hoima Wayoyo	Wayoyo	Temporary road closure	Increased transportation costs and travel time with economic consequences	Infrastructure and utilities management plan Stakeholder engagement plan	Any planned diversion of utility services, closures of any road or track, or planned traffic diversions will be communicated to local authorities and affected communities at least 72 hours before the works. Information provided to the community will include (as relevant to the diversion) but not be limited to details of the timing and duration of the diversion; the route of traffic diversions; and traffic control measures for road crossings where delays and public safety are key factors. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding: notification; grievance procedure; compensation process. Number of related complaints	Continuous improvement on percentage of unresolved complaints on employment after Project has proposed solution(s) during engagement	Quarterly	Project in consultation with utility service providers; Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, Local police, District Local Governments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
84.5 Hoima Buseruka	Buseruka	Temporary road closure	Increased transportation costs and travel time with economic consequences	Infrastructure and utilities management plan Stakeholder engagement plan	Any planned diversion of utility services, closures of any road or track, or planned traffic diversions will be communicated to local authorities and affected communities at least 72 hours before the works. Information provided to the community will include (as relevant to the diversion) but not be limited to details of the timing and duration of the diversion; the route of traffic diversions; and traffic control measures for road crossings where delays and public safety are key factors. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding: notification; grievance procedure; compensation process. Number of related complaints	Continuous improvement on percentage of unresolved complaints on employment after Project has proposed solution(s) during engagement	Quarterly	Project in consultation with utility service providers; Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, Local police, District Local Governments
86 Hoima Rwamutonga, Buseruka subcounty	Rwamutonga, Buseruka subcounty	Temporary road closure	Increased transportation costs and travel time with economic consequences	Infrastructure and utilities management plan Stakeholder engagement plan	Any planned diversion of utility services, closures of any road or track, or planned traffic diversions will be communicated to local authorities and affected communities at least 72 hours before the works. Information provided to the community will include (as relevant to the diversion) but not be limited to details of the timing and duration of the diversion; the route of traffic diversions; and traffic control measures for road crossings where delays and public safety are key factors. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding: notification; grievance procedure; compensation process. Number of related complaints	Continuous improvement on percentage of unresolved complaints on employment after Project has proposed solution(s) during engagement	Quarterly	Project in consultation with utility service providers; Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, Local police, District Local Governments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
87.5 Hoima Rwamutonga, Bugambe subcounty	Rwamutonga, Bugambe subcounty	Temporary road closure	Increased transportation costs and travel time with economic consequences	Infrastructure and utilities management plan Stakeholder engagement plan	Any planned diversion of utility services, closures of any road or track, or planned traffic diversions will be communicated to local authorities and affected communities at least 72 hours before the works. Information provided to the community will include (as relevant to the diversion) but not be limited to details of the timing and duration of the diversion; the route of traffic diversions; and traffic control measures for road crossings where delays and public safety are key factors. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding: notification; grievance procedure; compensation process. Number of related complaints	Continuous improvement on percentage of unresolved complaints on employment after Project has proposed solution(s) during engagement	Quarterly	Project in consultation with utility service providers; Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, Local police, District Local Governments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
45 Buliisa Wantembo UPDF Military Barracks	Wantembo UPDF Military Barracks	Temporary road closure	Increased transportation costs and travel time with economic consequences	Infrastructure and utilities management plan Stakeholder engagement plan	Any planned diversion of utility services, closures of any road or track, or planned traffic diversions will be communicated to local authorities and affected communities at least 72 hours before the works. Information provided to the community will include (as relevant to the diversion) but not be limited to details of the timing and duration of the diversion; the route of traffic diversions; and traffic control measures for road crossings where delays and public safety are key factors. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding: notification; grievance procedure; compensation process. Number of related complaints	Continuous improvement on percentage of unresolved complaints on employment after Project has proposed solution(s) during engagement	Quarterly	Project in consultation with utility service providers; Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, Local police, District Local Governments
74.5 Hoima Municipality, the Mparo Tombs, the Bugambe Tea Estate, the Kibiro Salt Mine	Hoima Municipality, the Mparo Tombs, the Bugambe Tea Estate, the Kibiro Salt Mine	Provision of goods and services	Drop in tourism revenues	Stakeholder engagement plan	A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. The Project will engage with tourism facilities and operators and relevant organisations to communicate information about the project and the management of environmental and social risks. Potentially affected landowners, land users, communities and other affected stakeholders (e.g. tourism operators) will be consulted if there is likely to be any disruption to the existing infrastructure and utility services. Feedback from communities will inform planning of the works, especially when determining the options for temporary alternatives.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding: notification; grievance procedure; compensation process. Number of related complaints	Continuous improvement on percentage of unresolved complaints on employment after Project has proposed solution(s) during engagement	Quarterly	Project Relevant Government bodies including MEMD, PAU, Ministry of Tourism, Wildlife and Antiquities (MTWA), MGLSD

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Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa PACs near the MCPY	PACs near the MCPY	Loss/Severance of Land and Disruption to Land-Based Livelihoods	Permanent loss of grazing land	Pollution prevention plan. Resettlement action plan Monitoring and reporting plan	An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed. A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. Spouses will be consulted and present during the land surveys, entitlement briefings and compensation agreements and both spouses will sign the compensation agreements.	Effectiveness on stakeholder messaging (by feedback templates or interviews) • regarding • compensation process • grievance procedure • compensation records • number of related complaints	Compensation process compliant with resettlement action plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project Relevant Government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MLHUD, Local Government, MGLSD, MTWA

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa PACs near the MCPY	PACs near the MCPY	Employment	Household members seeking employment with the project will no longer be available for land-based livelihood activities	Stakeholder engagement plan Labour management plan	Financial management workshops will be held with workers to raise levels of financial literacy. During the recruitment process and throughout their contract, workers will be advised regularly that the duration of their employment is temporary and that they should maintain their existing livelihoods during this period and prepare through sound financial management for the ultimate termination of their employment. The Project will develop a campaign focused on providing realistic community expectations with regard to livelihood options and employment opportunities. A retrenchment plan will be prepared, using the principles in the International Finance Corporation's Good Practice Note No. 4: Managing Retrenchment, 2005, with the aim of reducing the impacts of cessation of employment contracts.	Effectiveness on stakeholder messaging (by feedback templates or interviews) • regarding • compensation process • grievance procedure • compensation records • number of related complaints. Labour management plan is informed by preproject salary benchmarking.	Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement. Preproject salary benchmarking is completed.	Quarterly for complaints. For benchmarking, 90 days prior to construction commencing.	Project and Project contractors; Government agencies who may conduct independent monitoring or review include: MEMD, PAU, MGLSD, District Local Governments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
TBC PACs located in areas of high value crop production	PACs located in areas of high value crop production	Loss/Severance of Land and Disruption to Land-Based Livelihoods	Permanent loss of land cultivated with high value cash crops	Resettlement action plan Stakeholder engagement plan	An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed. A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. Spouses will be consulted and present during the land surveys, entitlement briefings and compensation agreements and both spouses will sign the compensation agreements.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding • compensation process • grievance procedure • compensation records • number of related complaints	Compensation process compliant with resettlement action plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project Relevant Government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MLHUD, Local Government, MGLSD
TBC PACs supporting large herds of cattle and sheep	PACs supporting large herds of cattle and sheep	Accidents Due to Open Excavations	Livestock falling into excavations	Community health, safety and security plan. Stakeholder engagement plan. Monitoring and reporting plan.	The maximum length of open trench at any one time (per spread) will be defined based on: • the habitats present and potential ecological sensitivities (e.g., terrestrial commuting routes for large mammals) • community safety. Gaps will also be left in soil stacks and pipe strings at strategic locations to allow passage of animals where it is considered safe to do so. Community awareness programmes will be developed and implemented in project-affected communities to explain: • road safety risks and how to increase the safety of pedestrians particularly children • how to ensure their safety during construction • the measures that have been, or will be, implemented to protect their health and safety (e.g., provision of safe access).	Location and length of open excavations Documentation (reports, checklists, etc) demonstrating that appropriate risk assessment has been implemented Number of related complaints	Continuous improvement of percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project and Project contractors Relevant Government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MLHUD, Local Government, MGLSD

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa PACs near the MCPY	PACs near the MCPY	PIIM	Reduction in local fish stocks due to PIIM	Project-induced in-migration management plan	The Project will identify potential PIIM areas of concern and work with local leaders to establish mitigation measures that will include informing PACs of risks and opportunities associated with PIIM. A PIIMP will aim to reduce the number of people that arrive into project-affected communities; the PIIM will also identify requirements for: • monitoring effects of in-migration and demographic change • monitoring relations between communities and in-migrants • education of project workers and local communities on impacts related to in-migration.	Settlements developing around or near camp. Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding project opportunities.	Zero unplanned settlements.	Monthly	Project and Project Contractors Relevant Government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MAAIF, WMD, MLHUD

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Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
PACs close to pipeline river crossing	PACs close to pipeline river crossing	Impeded Flow of River or Channel	Reduction in artisanal fish catch due to changes in water flows and increased levels of sediment during open-cut crossing construction	Pollution prevention plan Reinstatement plan	A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. Procedures will be developed, incorporating plans for erosion and sediment control and reinstatement. These will be produced before work begins at areas of fragile, sensitive or thin topsoil, side slopes or narrow ridges and at watercourse crossings. Sediment interception measures will be installed, inspected and maintained to prevent sediment runoff from the RoW or construction sites affecting watercourses, wetlands, waterbodies or environmentally sensitive areas. Procedures will include additional precautions to be taken and increased monitoring (minimum twice per week), with the aim of preserving the topsoil for subsequent replacement. Location-specific method statements will be produced for watercourse crossing construction. These method statements will incorporate plans for: • erosion control • sediment control • maintaining environmental base flows downstream of water crossings for example by using measures such as pumping, channel diversions and fluming • notifying fisherfolk as appropriate • reinstatement • spill response equipment. An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed.	Documentation (records, reports etc) demonstrating that location specific method statements have been implemented Number of related complaints	Continuous improvement on percentage of unresolved complaints on water-based livelihoods after Project has proposed solution(s) during engagement	Monthly	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, MEMD, PAU, District Environment Officers, DWRM, WMD, MAAIF

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa PACs near the MCPY	PACs near the MCPY	Resettlement	Permanent loss of private land due to project land acquisition	Resettlement action plan. Stakeholder engagement plan. Community health, safety and security plan. Monitoring and reporting plan.	The project will participate in regional cumulative environmental management initiatives being developed in collaboration with operators of current projects, developers of proposed projects, and led by the government. It is envisaged that initiative management priorities would be defined for implementation by industry participants. Objectives are expected to include: creation of a governance structure; assessment of regional cumulative impacts based on collective baseline data and ESIAs that have been prepared for projects in the region; establishment and monitoring of environmental and social thresholds; collaborative development of cumulative impact management plans and mitigation measures. An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding • compensation process • grievance procedure • compensation records • number of related complaints	Compensation process compliant with resettlement action plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project and other developers in the AoI; Relevant Government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MLHUD, MGLSD, MTWA, District Local Government

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Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa PACs near the MCPY	PACs near the MCPY	Resettlement	Land speculation by third parties	Resettlement action plan Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed. Ensure that benefits for spouses or dependants of employees (such as health insurance or pension schemes) are offered on a non-discriminatory basis. A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. Spouses will be consulted and present during the land surveys, entitlement briefings and compensation agreements and both spouses will sign the compensation agreements.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding land and property speculation. Stakeholder records that demonstrate Project liaising with authorities regarding land and property speculation. Number of related complaints	Zero noncompliance with stakeholder engagement plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project Relevant Government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MLHUD, MGLSD, MTWA, District Local Government

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Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa PACs near the MCPY	PACs near the MCPY	Resettlement	Land and property speculation by land owners	Resettlement action plan Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed. Ensure that benefits for spouses or dependants of employees (such as health insurance or pension schemes) are offered on a non-discriminatory basis. A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. Spouses will be consulted and present during the land surveys, entitlement briefings and compensation agreements and both spouses will sign the compensation agreements.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding land and property speculation. Stakeholder records that demonstrate Project liaising with authorities regarding land and property speculation. Number of related complaints	Zero noncompliance with stakeholder engagement plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project Relevant Government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MLHUD, MGLSD, MTWA, District Local Government

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa PACs near the MCPY	PACs near the MCPY	Resettlement	New disputes and exacerbation of pre-existing disputes and conflict around land and property	Resettlement action plan. Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	The project will participate in regional cumulative environmental management initiatives being developed in collaboration with operators of current projects, developers of proposed projects, and led by the government. It is envisaged that initiative management priorities would be defined for implementation by industry participants. Objectives are expected to include: creation of a governance structure; assessment of regional cumulative impacts based on collective baseline data and ESIAs that have been prepared for projects in the region; establishment and monitoring of environmental and social thresholds; collaborative development of cumulative impact management plans and mitigation measures. An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding disputes and conflict. Number of related complaints	Zero noncompliance with stakeholder engagement plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project Relevant Government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MLHUD, MGLSD, MTWA, District Local Government, Local police

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa PACs near the MCPY	PACs near the MCPY	Resettlement	Permanent loss of physical structures due to project land acquisition	Resettlement action plan. Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed. A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. Spouses will be consulted and present during the land surveys, entitlement briefings and compensation agreements and both spouses will sign the compensation agreements.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding • compensation process • grievance procedure • compensation records • number of related complaints	Compensation process compliant with resettlement action plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project Relevant Government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MLHUD, MGLSD, MTWA, District Local Government

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa PACs near the MCPY	PACs near the MCPY	Resettlement	Permanent loss of local enterprises due to project land acquisition	Resettlement action plan. Stakeholder engagement plan. Community health, safety and security plan. Monitoring and reporting plan.	An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed. A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. Spouses will be consulted and present during the land surveys, entitlement briefings and compensation agreements and both spouses will sign the compensation agreements.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding • compensation process • grievance procedure • compensation records • number of related complaints	Compensation process compliant with resettlement action plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project Relevant Government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MLHUD, MGLSD, MTWA, District Local Government

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
22.5 - 37 Buliisa PACs located from KP22.5 to KP37	PACs located from KP22.5 to KP37	Resettlement	Permanent loss of private land due to project land acquisition	Resettlement action plan. Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed. A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. Spouses will be consulted and present during the land surveys, entitlement briefings and compensation agreements and both spouses will sign the compensation agreements.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding • compensation process • grievance procedure • compensation records • number of related complaints	Compensation process compliant with resettlement action plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project and other developers in the AoI; Relevant Government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MLHUD, MGLSD, MTWA, District Local Government

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
22.5 - 37 Buliisa PACs located from KP22.5 to KP37	PACs located from KP22.5 to KP37	Resettlement	Permanent loss of physical structures due to project land acquisition	Resettlement action plan Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed. A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. Spouses will be consulted and present during the land surveys, entitlement briefings and compensation agreements and both spouses will sign the compensation agreements.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding • compensation process • grievance procedure • compensation records • number of related complaints	Compensation process compliant with resettlement action plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project Relevant Government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MLHUD, MGLSD, MTWA, District Local Government

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
5 Buliisa Kibambura	Kibambura	Resettlement	Land speculation by third parties	Resettlement action plan Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed. Ensure that benefits for spouses or dependants of employees (such as health insurance or pension schemes) are offered on a non-discriminatory basis. A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. Spouses will be consulted and present during the land surveys, entitlement briefings and compensation agreements and both spouses will sign the compensation agreements.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding land and property speculation. Stakeholder records that demonstrate Project liaising with authorities regarding land and property speculation. Number of related complaints	Zero noncompliance with stakeholder engagement plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project Relevant Government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MLHUD, MGLSD, MTWA, District Local Government, Local police

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
8 Buliisa Kijangi	Kijangi	Resettlement	Land speculation by third parties	Resettlement action plan Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed. Ensure that benefits for spouses or dependants of employees (such as health insurance or pension schemes) are offered on a non-discriminatory basis. A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. Spouses will be consulted and present during the land surveys, entitlement briefings and compensation agreements and both spouses will sign the compensation agreements.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding land and property speculation. Stakeholder records that demonstrate Project liaising with authorities regarding land and property speculation. Number of related complaints	Zero noncompliance with stakeholder engagement plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project Relevant Government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MLHUD, MGLSD, MTWA, District Local Government, Local police

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44.5 Buliisa Booma	Booma	Resettlement	Land speculation by third parties	Resettlement action plan Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed. Ensure that benefits for spouses or dependants of employees (such as health insurance or pension schemes) are offered on a non-discriminatory basis. A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. Spouses will be consulted and present during the land surveys, entitlement briefings and compensation agreements and both spouses will sign the compensation agreements.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding land and property speculation. Stakeholder records that demonstrate Project liaising with authorities regarding land and property speculation. Number of related complaints	Zero noncompliance with stakeholder engagement plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project Relevant Government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MLHUD, MGLSD, MTWA, District Local Government, Local police

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
94.5 Hoima Kayere	Kayere	Resettlement	Land speculation by third parties	Resettlement action plan Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed. Ensure that benefits for spouses or dependants of employees (such as health insurance or pension schemes) are offered on a non-discriminatory basis. A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. Spouses will be consulted and present during the land surveys, entitlement briefings and compensation agreements and both spouses will sign the compensation agreements.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding land and property speculation. Stakeholder records that demonstrate Project liaising with authorities regarding land and property speculation. Number of related complaints	Zero noncompliance with stakeholder engagement plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project Relevant Government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MLHUD, MGLSD, MTWA, District Local Government, Local police

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
95 Hoima Nyamasoga	Nyamasoga	Resettlement	Land speculation by third parties	Resettlement action plan Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed. Ensure that benefits for spouses or dependants of employees (such as health insurance or pension schemes) are offered on a non-discriminatory basis. A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. Spouses will be consulted and present during the land surveys, entitlement briefings and compensation agreements and both spouses will sign the compensation agreements.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding land and property speculation. Stakeholder records that demonstrate Project liaising with authorities regarding land and property speculation. Number of related complaints	Zero noncompliance with stakeholder engagement plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project Relevant Government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MLHUD, MGLSD, MTWA, District Local Government, Local police

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
96.5 Hoima Katooke	Katooke	Resettlement	Land speculation by third parties	Resettlement action plan Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed. Ensure that benefits for spouses or dependants of employees (such as health insurance or pension schemes) are offered on a non-discriminatory basis. A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance. Spouses will be consulted and present during the land surveys, entitlement briefings and compensation agreements and both spouses will sign the compensation agreements.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding land and property speculation. Stakeholder records that demonstrate Project liaising with authorities regarding land and property speculation. Number of related complaints	Zero noncompliance with stakeholder engagement plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project Relevant Government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MLHUD, MGLSD, MTWA, District Local Government, Local police

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Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
5 Buliisa Kibambura	Kibambura	Resettlement	New disputes and exacerbation of pre-existing disputes and conflict around land and property	Resettlement action plan Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	The project will participate in regional cumulative environmental management initiatives being developed in collaboration with operators of current projects, developers of proposed projects, and led by the government. It is envisaged that initiative management priorities would be defined for implementation by industry participants. Objectives are expected to include: creation of a governance structure; assessment of regional cumulative impacts based on collective baseline data and ESIAs that have been prepared for projects in the region; establishment and monitoring of environmental and social thresholds; collaborative development of cumulative impact management plans and mitigation measures. An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding disputes and conflict. Number of related complaints	Zero noncompliance with stakeholder engagement plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project and other developers in AoI; Relevant Government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MLHUD, MGLSD, MTWA, District Local Government, Local police

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Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
8 Buliisa Kijangi	Kijangi	Resettlement	New disputes and exacerbation of pre-existing disputes and conflict around land and property	Resettlement action plan Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	The project will participate in regional cumulative environmental management initiatives being developed in collaboration with operators of current projects, developers of proposed projects, and led by the government. It is envisaged that initiative management priorities would be defined for implementation by industry participants. Objectives are expected to include: creation of a governance structure; assessment of regional cumulative impacts based on collective baseline data and ESIAs that have been prepared for projects in the region; establishment and monitoring of environmental and social thresholds; collaborative development of cumulative impact management plans and mitigation measures. An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding disputes and conflict. Number of related complaints	Zero noncompliance with stakeholder engagement plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project and other developers in AoI; Relevant Government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MLHUD, MGLSD, MTWA, District Local Government, Local police

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Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44.5 Buliisa Booma	Booma	Resettlement	New disputes and exacerbation of pre-existing disputes and conflict around land and property	Resettlement action plan. Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	The project will participate in regional cumulative environmental management initiatives being developed in collaboration with operators of current projects, developers of proposed projects, and led by the government. It is envisaged that initiative management priorities would be defined for implementation by industry participants. Objectives are expected to include: creation of a governance structure; assessment of regional cumulative impacts based on collective baseline data and ESIAs that have been prepared for projects in the region; establishment and monitoring of environmental and social thresholds; collaborative development of cumulative impact management plans and mitigation measures. An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding disputes and conflict. Number of related complaints	Zero noncompliance with stakeholder engagement plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project and other developers in AoI; Relevant Government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MLHUD, MGLSD, MTWA, District Local Government, Local police

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Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
94.5 Hoima Kayere	Kayere	Resettlement	New disputes and exacerbation of pre-existing disputes and conflict around land and property	Resettlement action plan Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	The project will participate in regional cumulative environmental management initiatives being developed in collaboration with operators of current projects, developers of proposed projects, and led by the government. It is envisaged that initiative management priorities would be defined for implementation by industry participants. Objectives are expected to include: creation of a governance structure; assessment of regional cumulative impacts based on collective baseline data and ESIAs that have been prepared for projects in the region; establishment and monitoring of environmental and social thresholds; collaborative development of cumulative impact management plans and mitigation measures. An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding disputes and conflict. Number of related complaints	Zero noncompliance with stakeholder engagement plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project and other developers in AoI; Relevant Government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MLHUD, MGLSD, MTWA, District Local Government, Local police

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Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
95 Hoima Nyamasoga	Nyamasoga	Resettlement	New disputes and exacerbation of pre-existing disputes and conflict around land and property	Resettlement action plan Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	The project will participate in regional cumulative environmental management initiatives being developed in collaboration with operators of current projects, developers of proposed projects, and led by the government. It is envisaged that initiative management priorities would be defined for implementation by industry participants. Objectives are expected to include: creation of a governance structure; assessment of regional cumulative impacts based on collective baseline data and ESIAs that have been prepared for projects in the region; establishment and monitoring of environmental and social thresholds; collaborative development of cumulative impact management plans and mitigation measures. An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding disputes and conflict. Number of related complaints	Zero noncompliance with stakeholder engagement plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project and other developers in AoI; Relevant Government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MLHUD, MGLSD, MTWA, District Local Government, Local police

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Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
96.5 Hoima Katooke	Katooke	Resettlement	New disputes and exacerbation of pre-existing disputes and conflict around land and property	Resettlement action plan Stakeholder engagement plan Community health, safety and security plan Monitoring and reporting plan	The project will participate in regional cumulative environmental management initiatives being developed in collaboration with operators of current projects, developers of proposed projects, and led by the government. It is envisaged that initiative management priorities would be defined for implementation by industry participants. Objectives are expected to include: creation of a governance structure; assessment of regional cumulative impacts based on collective baseline data and ESIAs that have been prepared for projects in the region; establishment and monitoring of environmental and social thresholds; collaborative development of cumulative impact management plans and mitigation measures. An RPF has been developed in line with national legislation, Good International Industry Practice (GIIP) and IFC Performance Standard 5. The RPF will outline procedures related to compensation for loss of assets and livelihood restoration. An RAP will describe the modalities of identifying PAP and the procedures related to compensation for loss of assets and livelihood restoration strategies. Post resettlement monitoring of livelihood restoration measures will be implemented. Additional measures will be developed and implemented where necessary to ensure livelihoods are restored as a minimum to pre-project levels.	Effectiveness on stakeholder messaging (by feedback templates or interviews) regarding disputes and conflict. Number of related complaints	Zero noncompliance with stakeholder engagement plan. Continuous improvement on percentage of unresolved complaints after Project has proposed solution(s) during engagement	Monthly	Project and other developers in AoI; Relevant Government bodies who may conduct independent monitoring or review the data include: PAU, MEMD, NEMA, MLHUD, MGLSD, MTWA, District Local Government, Local police
44 Buliisa PACs near the MCPY	PACs near the MCPY	Employment	Increased risk of vector-related diseases amongst the local workforce	Occupational health, safety and security plan	A malaria and other vector control management plan will be developed and implemented to ensure adequate control over malaria and other vector-related conditions in the camp. As part of the project OHSSP, vector management on all project sites will be risk based. Corridor controls for landscape maintenance, as well as integrated pest management procedures (environmental, biological and chemical), will be implemented. As part of the project OHSSP, ensure that vector management on all project sites (camp and construction) align with national vector control programmes and strategies.	Documentation (records, reports etc) demonstrating that appropriate vector control management plans have been developed Instances of vector related medical cases	One health talk per month and full camp coverage of participation. Decreasing trend in vector related medical cases.	Monthly	Project Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, District Local Government, OSH Department - MGLSD, Ministry of Health

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44.5 Buliisa Biiso	Biiso	Use of Road Network	Traffic congestion leading to delays	Stakeholder engagement plan Transport and road safety management plan	Where a safety risk assessment has identified a potential for construction interfaces to cause traffic accidents, temporary traffic control measures (signage, flagmen, temporary traffic lights, barricades) will be implemented. Vehicle movements will be restricted to defined access routes and demarcated working areas (unless in the event of an emergency). Any planned diversion of utility services, closures of any road or track, or planned traffic diversions will be communicated to local authorities and affected communities at least 72 hours before the works. Information provided to the community will include (as relevant to the diversion) but not be limited to details of the timing and duration of the diversion; the route of traffic diversions; and traffic control measures for road crossings where delays and public safety are key factors. A post-construction exit survey will be conducted covering all areas surveyed during preconstruction (and any additional land requirements during construction) to assess the condition of dwellings, roads used including bridges, drainage structures, signage, traffic management and other road infrastructure. Any actions, such as repairs, arising from the exit survey will be closed out on a timely basis to allow a prompt return to the relevant authority, village or landowner. An initial survey, supported by photographs, will be completed of the condition of roads to be used by the project including but limited to bridges, drainage structures, signage, traffic management and other road infrastructure. The survey will be agreed and signed by the road authority, local authority and any affected landowner. The survey will be made available to the road authority and municipal authorities if requested. The chosen project access routes will be improved as required to provide safe access for the project duration.	Documentation supporting journey management	Zero noncompliance with the Stakeholder Engagement Plan and the Transport and the Road Safety Management Plan	Weekly whilst heavy loads are being transported Monthly thereafter	Project in consultation with respective utility service providers; Relevant Government bodies that may conduct independent monitoring or review the data include: PAU, MEMD, District Local Government, UNRA, local police

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
74.5 Hoima Municipality	Hoima Municipality	Use of Road Network	Traffic congestion leading to delays	Stakeholder engagement plan Transport and road safety management plan	Where a safety risk assessment has identified a potential for construction interfaces to cause traffic accidents, temporary traffic control measures (signage, flagmen, temporary traffic lights, barricades) will be implemented. Vehicle movements will be restricted to defined access routes and demarcated working areas (unless in the event of an emergency). Any planned diversion of utility services, closures of any road or track, or planned traffic diversions will be communicated to local authorities and affected communities at least 72 hours before the works. Information provided to the community will include (as relevant to the diversion) but not be limited to details of the timing and duration of the diversion; the route of traffic diversions; and traffic control measures for road crossings where delays and public safety are key factors. A post-construction exit survey will be conducted covering all areas surveyed during preconstruction (and any additional land requirements during construction) to assess the condition of dwellings, roads used including bridges, drainage structures, signage, traffic management and other road infrastructure. Any actions, such as repairs, arising from the exit survey will be closed out on a timely basis to allow a prompt return to the relevant authority, village or landowner. An initial survey, supported by photographs, will be completed of the condition of roads to be used by the project including but limited to bridges, drainage structures, signage, traffic management and other road infrastructure. The survey will be agreed and signed by the road authority, local authority and any affected landowner. The survey will be made available to the road authority and municipal authorities if requested. The chosen project access routes will be improved as required to provide safe access for the project duration.	Documentation supporting journey management	Zero noncompliance with the Stakeholder Engagement Plan and the Transport and the Road Safety Management Plan	Weekly whilst heavy loads are being transported Monthly thereafter	Project in consultation with respective utility service providers; Relevant Government bodies that may conduct independent monitoring or review the data include: PAU, MEMD, District Local Government, UNRA, local police

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa PACs near the MCPY	PACs near the MCPY	Abstraction of Groundwater	Reduced availability of groundwater	Natural resources management plan Pollution prevention plan Waste management plan Stakeholder engagement plan	As part of the permit application, hydraulic testing and hydrogeological impact assessments will be undertaken to evaluate the potential impact on local groundwater abstraction points. If the assessment indicates potential impacts to local users, alternative borehole locations will be considered and these alternative locations will be subject to the same testing and impact assessment process. Groundwater levels will be monitored once every two weeks by the Project at all sites where groundwater abstraction occurs for the project. The location of monitoring well(s) will be determined by a qualified hydrogeologist to ensure that they are installed in the correct formation and at the correct distance between project abstraction boreholes and community water points. If the local water supplies are derogated to the extent that complaints are made by the community as a result of project abstraction, then the Project will provide alternative water supplies at a convenient location for the community that is not or is less influenced by the project's abstraction.	Documentation (reports, checklists, etc) demonstrating that water-use checks have occurred and are within permit conditions.	Zero noncompliance with water abstraction permit or the Natural Resource Management Plan.	Weekly – during water abstraction activities.	Project Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, PAU, MEMD, District Environment and Natural Resources Officers, DWRM

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa PACs near the MCPY	PACs near the MCPY	Employment	The transmission of communicable diseases between the project's externally contracted workforce and PACs	Community health, safety and security plan Occupational health, safety and security plan Natural resources management plan Pollution prevention plan Waste management plan Stakeholder engagement plan	As part of the project OHSSP, a Communicable Disease Management Plan will be developed to manage infectious disease outbreaks in construction camp/MCPY and prevention of spread to PACs. Pre-deployment screenings will be described in the LMP and communicated during the recruitment process. As part of the CHSSP, community-based programmes will be developed and implemented, in cooperation with Health Management Teams (HMTs) which consider: • the development and implementation of a Community Malaria Control Programme • the development and implementation of a Community HIV/TB Programme • the development and implementation of a Community Water, Sanitation and Hygiene (WASH) Programme. A vaccination plan will be identified to prevent communicable diseases for which vaccinations are available from being transmitted between the national/international and local workforce. This plan will apply to all project workers and visitors. Construction camp will be designated as having "closed" status to prevent interactions between the workforce and PACs and prevent the spread of communicable disease. Policies will be developed to manage transgressions within the project disciplinary procedures and structures. As part of the CHSSP, a cooperation agreement with the Council Health Management Teams (CHMT) will be reached including periodic meetings to discuss potential health impacts, proposed mitigation measures and longitudinal monitoring of specific key health indicators during construction. As part of the project OHSSP, ensure that vector management on all project sites (camp and construction) align with national vector control programmes and strategies. As part of the OHSSP, a food and water management plan will be developed and implemented to reduce the risk of water- and food-borne disease outbreaks occurring among the workers and the associated risk of transmission to local communities.	Number of instances of communicable diseases in workforce per worksite Trends in communicable diseases in PACs	No increase in communicable diseases of workforce by category and worksite against baseline	Monthly	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, District Local Government, OSH Department - MGLSD, Ministry of Health

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa PACs near the MCPY	PACs near the MCPY	Employment	Inadequate vector management activities, resulting in an increase in vector resistance and negative impacts on preventative interventions implemented by local authorities	Community health, safety and security plan Occupational health, safety and security plan Natural resources management plan Pollution prevention plan Waste management plan Stakeholder engagement plan	A malaria and other vector control management plan will be developed and implemented to ensure adequate control over malaria and other vector-related conditions in camp. As part of the project OHSSP, vector management on all project sites will be risk based. Corridor controls for landscape maintenance, as well as integrated pest management procedures (environmental, biological and chemical), will be implemented. As part of the project OHSSP, ensure that vector management on all project sites (camp and construction) align with national vector control programmes and strategies.	Documentation (records, reports etc) demonstrating that appropriate vector control management plans have been developed Instances of vector related medical cases	One health talk per month and full camp coverage of participation. Decreasing trend in vector related medical cases.	Monthly	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, District Local Government, OSH Department - MGLSD, Ministry of Health

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa PACs near the MCPY	PACs near the MCPY	Employment	Outbreaks of infectious conditions within the MCPY affecting the health of PACs	Community health, safety and security plan Occupational health, safety and security plan Natural resources management plan Pollution prevention plan Waste management plan Stakeholder engagement plan	As part of the project OHSSP, a Communicable Disease Management Plan will be developed to manage infectious disease outbreaks in construction camp/MCPY and prevention of spread to PACs. Pre-deployment screenings will be described in the LMP and communicated during the recruitment process As part of the CHSSP, community-based programmes will be developed and implemented, in cooperation with Health Management Teams (HMTs) which consider: • the development and implementation of a Community Malaria Control Programme • the development and implementation of a Community HIV/TB Programme • the development and implementation of a Community Water, Sanitation and Hygiene (WASH) Programme. A vaccination plan will be identified to prevent communicable diseases for which vaccinations are available from being transmitted between the national/international and local workforce. This plan will apply to all project workers and visitors. Construction camp will be designated as having “closed” status to prevent interactions between the workforce and PACs and prevent the spread of communicable disease. Policies will be developed to manage transgressions within the project disciplinary procedures and structures. As part of the CHSSP, a cooperation agreement with the Council Health Management Teams (CHMT) will be reached including periodic meetings to discuss potential health impacts, proposed mitigation measures and longitudinal monitoring of specific key health indicators during construction. As part of the project OHSSP, ensure that vector management on all project sites (camp and construction) align with national vector control programmes and strategies. As part of the OHSSP, a food and water management plan will be developed and implemented to reduce the risk of water- and food-borne disease outbreaks occurring among the workers and the associated risk of transmission to local communities.	Communicable disease management plan provisions to prevent spread of infectious diseases.	No net increase in the incidence of communicable disease above background levels. Positive trend on worker suggestions for preventing diseases	Monthly	Project and Project contractors; Relevant Government bodies who may conduct independent monitoring or review the data include: NEMA, District Local Government, OSH Department - MGLSD, Ministry of Health

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa PACs near the MCPY	PACs near the MCPY	PIIM	PIIM of jobseekers affecting PACs	Project-induced in-migration management plan Community health, safety and security plan Occupational health, safety and security plan Resettlement action plan Natural resource management plan Pollution prevention plan Waste management plan Stakeholder engagement plan	The Project will identify potential PIIM areas of concern and work with local leaders to establish mitigation measures that will include informing PACs of risks and opportunities associated with PIIM. A PIIMP will aim to reduce the number of people that arrive into project-affected communities; the PIIM will also identify requirements for: • monitoring effects of in-migration and demographic change • monitoring relations between communities and in-migrants • education of project workers and local communities on impacts related to in-migration. As part of the CHSSP, a cooperation agreement with the Council Health Management Teams (CHMT) will be reached including periodic meetings to discuss potential health impacts, proposed mitigation measures and longitudinal monitoring of specific key health indicators during construction.	Documentation (records, reports, etc.) demonstrating that a PIIM management plan has been developed and implemented Number of related complaints Stakeholder feedback on project perception (via targeted questionnaire)	Continuous improvement on percentage of unresolved complaints on in-migration after Project has proposed solution(s) during engagement	Monthly	Project Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, OHS Department MGLSD, District Local Governments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa PACs near the MCPY	PACs near the MCPY	PIIM	PIIM of jobseekers affecting PACs	Project-induced in-migration management plan Community health, safety and security plan Occupational health, safety and security plan Resettlement action plan Natural resource management plan Pollution prevention plan Waste management plan Stakeholder engagement plan	The Project will identify potential PIIM areas of concern and work with local leaders to establish mitigation measures that will include informing PACs of risks and opportunities associated with PIIM. A PIIMP will aim to reduce the number of people that arrive into project-affected communities; the PIIM will also identify requirements for: • monitoring effects of in-migration and demographic change • monitoring relations between communities and in-migrants • education of project workers and local communities on impacts related to in-migration. As part of the CHSSP, a cooperation agreement with the Council Health Management Teams (CHMT) will be reached including periodic meetings to discuss potential health impacts, proposed mitigation measures and longitudinal monitoring of specific key health indicators during construction.	Documentation (records, reports, etc.) demonstrating that a PIIM management plan has been developed and implemented Number of related complaints Stakeholder feedback on project perception (via targeted questionnaire)	Continuous improvement on percentage of unresolved complaints on in-migration after Project has proposed solution(s) during engagement	Monthly	Project Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, OHS Department MGLSD, District Local Governments

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Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa PACs near the MCPY	PACs near the MCPY	PIIM	PIIM of jobseekers affecting PACs	Project-induced in-migration management plan Community health, safety and security plan Occupational health, safety and security plan Resettlement action plan Natural resource management plan Pollution prevention plan Waste management plan Stakeholder engagement plan	The Project will identify potential PIIM areas of concern and work with local leaders to establish mitigation measures that will include informing PACs of risks and opportunities associated with PIIM. A PIIMP will aim to reduce the number of people that arrive into project-affected communities; the PIIM will also identify requirements for: • monitoring effects of in-migration and demographic change • monitoring relations between communities and in-migrants • education of project workers and local communities on impacts related to in-migration. As part of the CHSSP, a cooperation agreement with the Council Health Management Teams (CHMT) will be reached including periodic meetings to discuss potential health impacts, proposed mitigation measures and longitudinal monitoring of specific key health indicators during construction.	Documentation (records, reports, etc.) demonstrating that a PIIM management plan has been developed and implemented Number of related complaints Stakeholder feedback on project perception (via targeted questionnaire)	Continuous improvement on percentage of unresolved complaints on in-migration after Project has proposed solution(s) during engagement	Monthly	Project Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, OHS Department MGLSD, District Local Governments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa PACs near the MCPY	PACs near the MCPY	PIIM	PIIM of jobseekers affecting PACs	Project-induced in-migration management plan Community health, safety and security plan Occupational health, safety and security plan Resettlement action plan Natural resource management plan Pollution prevention plan Waste management plan Stakeholder engagement plan	The Project will identify potential PIIM areas of concern and work with local leaders to establish mitigation measures that will include informing PACs of risks and opportunities associated with PIIM. A PIIMP will aim to reduce the number of people that arrive into project-affected communities; the PIIM will also identify requirements for: • monitoring effects of in-migration and demographic change • monitoring relations between communities and in-migrants • education of project workers and local communities on impacts related to in-migration. As part of the CHSSP, a cooperation agreement with the Council Health Management Teams (CHMT) will be reached including periodic meetings to discuss potential health impacts, proposed mitigation measures and longitudinal monitoring of specific key health indicators during construction.	Documentation (records, reports, etc.) demonstrating that a PIIM management plan has been developed and implemented Number of related complaints Stakeholder feedback on project perception (via targeted questionnaire)	Continuous improvement on percentage of unresolved complaints on in-migration after Project has proposed solution(s) during engagement	Monthly	Project Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, OHS Department MGLSD, District Local Governments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa PACs near the MCPY	PACs near the MCPY	PIIM	Reduction in the availability of potable water in PACs due to PIIM	Project-induced in-migration management plan Community health, safety and security plan Occupational health, safety and security plan Resettlement action plan Natural resource management plan Pollution prevention plan Waste management plan Stakeholder engagement plan	A PIIMP will aim to reduce the number of people that arrive into project-affected communities; the PIIM will also identify requirements for: • monitoring effects of in-migration and demographic change • monitoring relations between communities and in-migrants • education of project workers and local communities on impacts related to in-migration.	Documentation (records, reports, etc.) demonstrating that a PIIM management plan has been developed and implemented Number of related complaints Stakeholder feedback on project perception (via targeted questionnaire)	Continuous improvement on percentage of unresolved complaints on in-migration after Project has proposed solution(s) during engagement	Monthly	Project Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, District Local Government, DWRM, NEMA

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa PACs near the MCPY	PACs near the MCPY	Provision of goods and services	Nutrition of PACs compromised as a result of reduced food security	Community health, safety and security plan Occupational health, safety and security plan Resettlement action plan Natural resource management plan Pollution prevention plan Waste management plan Stakeholder engagement plan	A PIIMP will aim to reduce the number of people that arrive into project-affected communities; the PIIM will also identify requirements for: • monitoring effects of in-migration and demographic change • monitoring relations between communities and in-migrants • education of project workers and local communities on impacts related to in-migration.	Documentation demonstrating that community programmes have been developed and implemented Number of meetings with DHMTs per district Number of related complaints	At least one DHMT meeting every second month. Continuous improvement on percentage of unresolved complaints on project vehicle dust emissions after Project has proposed solution(s) during engagement.	Monthly	Project Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, MGLSD,
44 Buliisa PACs near the MCPY	PACs near the MCPY	Community Welfare	Conversion of MCPY structures into community facilities, leading to improved service provision in PACs	Stakeholder engagement plan	A Stakeholder Engagement Plan will be developed and implemented, identifying how the Project will engage and consult with internal and external stakeholders to keep them informed about project activities, understand and respond to their concerns and report to them on the project's environmental and social performance.	Applicable stakeholder engagement records.	Zero significant residual impacts.	Once, during decommissioning of construction facilities	Project Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, NEMA, District Local Government

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa PACs near the MCPY	PACs near the MCPY	Community Dynamics	Change in local community dynamics due to employment opportunities	Project-induced in-migration management plan Community health, safety and security plan Stakeholder engagement plan	A PIIMP will aim to reduce the number of people that arrive into project-affected communities; the PIIM will also identify requirements for: • monitoring effects of in-migration and demographic change • monitoring relations between communities and in-migrants • education of project workers and local communities on impacts related to in-migration. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed.	Documentation (records, reports, etc.) demonstrating that a PIIM management plan has been developed and implemented Number of related complaints Stakeholder feedback on project perception (via targeted questionnaire)	Continuous improvement on percentage of unresolved complaints on in-migration after Project has proposed solution(s) during engagement	Monthly	Project Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, MGLSD, NEMA, District Local Government
44 Buliisa PACs near the MCPY	PACs near the MCPY	Community Dynamics	PIIM causing an increase in social ills	Project-induced in-migration management plan Community health, safety and security plan Stakeholder engagement plan	A PIIMP will aim to reduce the number of people that arrive into project-affected communities; the PIIM will also identify requirements for: • monitoring effects of in-migration and demographic change • monitoring relations between communities and in-migrants • education of project workers and local communities on impacts related to in-migration. The Project will implement a grievance procedure to provide opportunities for PACs to express grievances about project activities. The grievance process will be communicated to and promoted within all PACs; it will be clearly communicated to PACs that complaints related to interactions with public or private security forces will be addressed.	Documentation (records, reports, etc.) demonstrating that a PIIM management plan has been developed and implemented Number of related complaints Stakeholder feedback on project perception (via targeted questionnaire)	Continuous improvement on percentage of unresolved complaints on in-migration after Project has proposed solution(s) during engagement	Monthly	Project Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, MGLSD, NEMA, District Local Government, Ministry of Health

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
44 Buliisa PACs near the MCPY	PACs near the MCPY	Community Dynamics	Tensions between non-local construction workforce and PACs	Community health, safety and security plan Stakeholder engagement plan Resettlement action plan	A workers' code of conduct outlining expected worker behaviours will be developed and implemented. This code of conduct will cover the interaction between the national and international workforce and local workforce but also interactions with unemployed PAC members. Compliance with the workers' code of conduct will be a contractual requirement for all contractor, including subcontractors' employees. In the event of noncompliance, workers will be disciplined in accordance with project disciplinary procedures and structures.	Effectiveness of messaging (by feedback templates or interviews) regarding implementation of workers' code of conduct on PACs, incoming workforce and local workforce (by category) Number of noncompliance with worker's code of conduct. Number of related complaints	Continuous decrease in noncompliance with worker's code of conduct. Continuous improvement on percentage of unresolved related complaints after Project has proposed solution(s) during engagement	Monthly	Project Relevant Government agencies who may conduct independent monitoring or review include: MEMD, PAU, MGLSD, NEMA, District Local Government, Local police

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
18.1 Buliisa CHU417: Lithic core, Kabolwa	CHU417: Lithic core, Kabolwa	Disturbance or loss of cultural heritage	Damage or disturbance of feature	Cultural heritage management plan	A preconstruction survey of the RoW will be undertaken to collect data on location, extent and mitigation measures of known and unknown assets (tangible and intangible cultural heritage (TCH and ICH)) and to consult community leaders about ICH sites or practices not yet identified. A report including a GIS file will be prepared that will recommend location-specific actions to be undertaken that could include: • avoidance of a site • access constraints to reduce disturbance to a site • excavation of a site • a watching brief during vegetation removal or topsoil stripping • requirements to maintain access to cultural heritage assets. A schedule of sites and actions to be undertaken will be prepared and included in the cultural heritage management plan (CHMP) and any appropriate licences obtained. A senior cultural heritage monitor (SCHM) will ensure that the cultural heritage management plan (CHMP) will be implemented, in agreement with relevant government authorities, in advance of construction. The CHMP will include a chance finds procedure. The cultural heritage team will schedule regular meetings and progress reports so that government authorities and appropriate community leaders are kept informed, including: • regular report on progress of excavations • a post-excavation assessment report • a research archive • a final publication of results of tangible or intangible heritage investigations as appropriate to the significance of the outcomes • chance finds reports will be provided to the government authority and relevant stakeholders. The SCHM will be supported by a tangible cultural heritage monitor (TCHM) and an intangible cultural heritage monitor (ICHM) to evaluate the effectiveness of the cultural heritage protection measures and deliver awareness training for all project personnel. Information on intangible cultural heritage (ICH) collected during the preconstruction survey will be evaluated and integrated into the CHMP. This will include information on vulnerable groups if present.	Compliance with the CHMP	Zero noncompliance with the CHMP Full audit trail of findings to action	Every 3 months (quarterly)	Project Relevant Government bodies including NEMA, MEMD, PAU, Ministry of Tourism, Wildlife and Antiquities (MTWA) Department of Museums and Monuments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
33.3 Buliisa CHU418: Discoid and Levallois flakes, Early Iron Age pottery, Bugoigo	CHU418: Discoid and Levallois flakes, Early Iron Age pottery, Bugoigo	Disturbance or loss of cultural heritage	Damage or disturbance of feature	Cultural heritage management plan	A preconstruction survey of the RoW will be undertaken to collect data on location, extent and mitigation measures of known and unknown assets (tangible and intangible cultural heritage (TCH and ICH)) and to consult community leaders about ICH sites or practices not yet identified. A report including a GIS file will be prepared that will recommend location-specific actions to be undertaken that could include: • avoidance of a site • access constraints to reduce disturbance to a site • excavation of a site • a watching brief during vegetation removal or topsoil stripping • requirements to maintain access to cultural heritage assets. A schedule of sites and actions to be undertaken will be prepared and included in the cultural heritage management plan (CHMP) and any appropriate licences obtained. A senior cultural heritage monitor (SCHM) will ensure that the CHMP will be implemented, in agreement with relevant government authorities, in advance of construction. The CHMP will include a chance finds procedure. The cultural heritage team will schedule regular meetings and progress reports so that government authorities and appropriate community leaders are kept informed, including: • regular report on progress of excavations • a post-excavation assessment report • a research archive • a final publication of results of tangible or intangible heritage investigations as appropriate to the significance of the outcomes • chance finds reports will be provided to the government authority and relevant stakeholders. The SCHM will be supported by a tangible cultural heritage monitor (TCHM) and an intangible cultural heritage monitor (ICHM) to evaluate the effectiveness of the cultural heritage protection measures and deliver awareness training for all project personnel. Information on intangible cultural heritage (ICH) collected during the preconstruction survey will be evaluated and integrated into the CHMP. This will include information on vulnerable groups if present.	Compliance with the CHMP	Zero noncompliance with the CHMP Full audit trail of findings to action	Every 3 months (quarterly)	Project Relevant Government bodies including NEMA, MEMD, PAU, Ministry of Tourism, Wildlife and Antiquities (MTWA) Department of Museums and Monuments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
36 Buliisa CHU260: Pottery scatter, Nyamukuta Bridge	CHU260: Pottery scatter, Nyamukuta Bridge	Disturbance or loss of cultural heritage	Damage or disturbance of feature	Cultural heritage management plan	A preconstruction survey of the RoW will be undertaken to collect data on location, extent and mitigation measures of known and unknown assets (tangible and intangible cultural heritage (TCH and ICH)) and to consult community leaders about ICH sites or practices not yet identified. A report including a GIS file will be prepared that will recommend location-specific actions to be undertaken that could include: • avoidance of a site • access constraints to reduce disturbance to a site • excavation of a site • a watching brief during vegetation removal or topsoil stripping • requirements to maintain access to cultural heritage assets. A schedule of sites and actions to be undertaken will be prepared and included in the cultural heritage management plan (CHMP) and any appropriate licences obtained. A senior cultural heritage monitor (SCHM) will ensure that the CHMP will be implemented, in agreement with relevant government authorities, in advance of construction. The CHMP will include a chance finds procedure. The cultural heritage team will schedule regular meetings and progress reports so that government authorities and appropriate community leaders are kept informed, including: • regular report on progress of excavations • a post-excavation assessment report • a research archive • a final publication of results of tangible or intangible heritage investigations as appropriate to the significance of the outcomes • chance finds reports will be provided to the government authority and relevant stakeholders. The SCHM will be supported by a tangible cultural heritage monitor (TCHM) and an intangible cultural heritage monitor (ICHM) to evaluate the effectiveness of the cultural heritage protection measures and deliver awareness training for all project personnel. Information on intangible cultural heritage (ICH) collected during the preconstruction survey will be evaluated and integrated into the CHMP. This will include information on vulnerable groups if present.	Compliance with the CHMP	Zero noncompliance with the CHMP Full audit trail of findings to action	Every 3 months (quarterly)	Project Relevant Government bodies including NEMA, MEMD, PAU, Ministry of Tourism, Wildlife and Antiquities (MTWA) Department of Museums and Monuments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
39.9 Buliisa CHU419: Lithic scraper, Late Iron Age pottery, Nyamukuta	CHU419: Lithic scraper, Late Iron Age pottery, Nyamukuta	Disturbance or loss of cultural heritage	Damage or disturbance of feature	Cultural heritage management plan	A preconstruction survey of the RoW will be undertaken to collect data on location, extent and mitigation measures of known and unknown assets (tangible and intangible cultural heritage (TCH and ICH)) and to consult community leaders about ICH sites or practices not yet identified. A report including a GIS file will be prepared that will recommend location-specific actions to be undertaken that could include: • avoidance of a site • access constraints to reduce disturbance to a site • excavation of a site • a watching brief during vegetation removal or topsoil stripping • requirements to maintain access to cultural heritage assets. A schedule of sites and actions to be undertaken will be prepared and included in the CHMP and any appropriate licences obtained. A senior cultural heritage monitor (SCHM) will ensure that the cultural heritage management plan (CHMP) will be implemented, in agreement with relevant government authorities, in advance of construction. The CHMP will include a chance finds procedure. The cultural heritage team will schedule regular meetings and progress reports so that government authorities and appropriate community leaders are kept informed, including: • regular report on progress of excavations • a post-excavation assessment report • a research archive • a final publication of results of tangible or intangible heritage investigations as appropriate to the significance of the outcomes • chance finds reports will be provided to the government authority and relevant stakeholders. The SCHM will be supported by a tangible cultural heritage monitor (TCHM) and an intangible cultural heritage monitor (ICHM) to evaluate the effectiveness of the cultural heritage protection measures and deliver awareness training for all project personnel. Information on intangible cultural heritage (ICH) collected during the preconstruction survey will be evaluated and integrated into the CHMP. This will include information on vulnerable groups if present.	Compliance with the CHMP	Zero noncompliance with the CHMP Full audit trail of findings to action	Every 3 months (quarterly)	Project Relevant Government bodies including NEMA, MEMD, PAU, Ministry of Tourism, Wildlife and Antiquities (MTWA) Department of Museums and Monuments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
47.6 Hoima CHU420: Late Iron Age potsherds, Katonge	CHU420: Late Iron Age potsherds, Katonge	Disturbance or loss of cultural heritage	Damage or disturbance of feature	Cultural heritage management plan	A preconstruction survey of the RoW will be undertaken to collect data on location, extent and mitigation measures of known and unknown assets (tangible and intangible cultural heritage (TCH and ICH)) and to consult community leaders about ICH sites or practices not yet identified. A report including a GIS file will be prepared that will recommend location-specific actions to be undertaken that could include: • avoidance of a site • access constraints to reduce disturbance to a site • excavation of a site • a watching brief during vegetation removal or topsoil stripping • requirements to maintain access to cultural heritage assets. A schedule of sites and actions to be undertaken will be prepared and included in the cultural heritage management plan (CHMP) and any appropriate licences obtained. A senior cultural heritage monitor (SCHM) will ensure that the CHMP will be implemented, in agreement with relevant government authorities, in advance of construction. The CHMP will include a chance finds procedure. The cultural heritage team will schedule regular meetings and progress reports so that government authorities and appropriate community leaders are kept informed, including: • regular report on progress of excavations • a post-excavation assessment report • a research archive • a final publication of results of tangible or intangible heritage investigations as appropriate to the significance of the outcomes • chance finds reports will be provided to the government authority and relevant stakeholders. The SCHM will be supported by a tangible cultural heritage monitor (TCHM) and an intangible cultural heritage monitor (ICHM) to evaluate the effectiveness of the cultural heritage protection measures and deliver awareness training for all project personnel. Information on intangible cultural heritage (ICH) collected during the preconstruction survey will be evaluated and integrated into the CHMP. This will include information on vulnerable groups if present.	Compliance with the CHMP	Zero noncompliance with the CHMP Full audit trail of findings to action	Every 3 months (quarterly)	Project Relevant Government bodies including NEMA, MEMD, PAU, Ministry of Tourism, Wildlife and Antiquities (MTWA) Department of Museums and Monuments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
51.2 Hoima CHU421: Three lithic scrapers, Katonge	CHU421: Three lithic scrapers, Katonge	Disturbance or loss of cultural heritage	Damage or disturbance of feature	Cultural heritage management plan	A preconstruction survey of the RoW will be undertaken to collect data on location, extent and mitigation measures of known and unknown assets (tangible and intangible cultural heritage (TCH and ICH)) and to consult community leaders about ICH sites or practices not yet identified. A report including a GIS file will be prepared that will recommend location-specific actions to be undertaken that could include: • avoidance of a site • access constraints to reduce disturbance to a site • excavation of a site • a watching brief during vegetation removal or topsoil stripping • requirements to maintain access to cultural heritage assets. A schedule of sites and actions to be undertaken will be prepared and included in the CHMP and any appropriate licences obtained. A senior cultural heritage monitor (SCHM) will ensure that the CHMP will be implemented, in agreement with relevant government authorities, in advance of construction. The CHMP will include a chance finds procedure. The cultural heritage team will schedule regular meetings and progress reports so that government authorities and appropriate community leaders are kept informed, including: • regular report on progress of excavations • a post-excavation assessment report • a research archive • a final publication of results of tangible or intangible heritage investigations as appropriate to the significance of the outcomes • chance finds reports will be provided to the government authority and relevant stakeholders. The SCHM will be supported by a tangible cultural heritage monitor (TCHM) and an intangible cultural heritage monitor (ICHM) to evaluate the effectiveness of the cultural heritage protection measures and deliver awareness training for all project personnel. Information on intangible cultural heritage (ICH) collected during the preconstruction survey will be evaluated and integrated into the CHMP. This will include information on vulnerable groups if present.	Compliance with the CHMP	Zero noncompliance with the CHMP Full audit trail of findings to action	Every 3 months (quarterly)	Project Relevant Government bodies including NEMA, MEMD, PAU, Ministry of Tourism, Wildlife and Antiquities (MTWA) Department of Museums and Monuments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
55.8 Hoima CHU422: Lithic axe Late Iron Age, Lunga	CHU422: Lithic axe Late Iron Age, Lunga	Disturbance or loss of cultural heritage	Damage or disturbance of feature	Cultural heritage management plan	A preconstruction survey of the RoW will be undertaken to collect data on location, extent and mitigation measures of known and unknown assets (tangible and intangible cultural heritage (TCH and ICH)) and to consult community leaders about ICH sites or practices not yet identified. A report including a GIS file will be prepared that will recommend location-specific actions to be undertaken that could include: • avoidance of a site • access constraints to reduce disturbance to a site • excavation of a site • a watching brief during vegetation removal or topsoil stripping • requirements to maintain access to cultural heritage assets. A schedule of sites and actions to be undertaken will be prepared and included in the cultural heritage management plan (CHMP) and any appropriate licences obtained. A senior cultural heritage monitor (SCHM) will ensure that the CHMP will be implemented, in agreement with relevant government authorities, in advance of construction. The CHMP will include a chance finds procedure. The cultural heritage team will schedule regular meetings and progress reports so that government authorities and appropriate community leaders are kept informed, including: • regular report on progress of excavations • a post-excavation assessment report • a research archive • a final publication of results of tangible or intangible heritage investigations as appropriate to the significance of the outcomes • chance finds reports will be provided to the government authority and relevant stakeholders. The SCHM will be supported by a tangible cultural heritage monitor (TCHM) and an ICHM to evaluate the effectiveness of the cultural heritage protection measures and deliver awareness training for all project personnel. Information on intangible cultural heritage (ICH) collected during the preconstruction survey will be evaluated and integrated into the CHMP. This will include information on vulnerable groups if present.	Compliance with the CHMP	Zero noncompliance with the CHMP Full audit trail of findings to action	Every 3 months (quarterly)	Project Relevant Government bodies including NEMA, MEMD, PAU, Ministry of Tourism, Wildlife and Antiquities (MTWA) Department of Museums and Monuments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
57.8 Hoima CHU423: Two potsherds, lithic axe, Kirwawanga	CHU423: Two potsherds, lithic axe, Kirwawanga	Disturbance or loss of cultural heritage	Damage or disturbance of feature	Cultural heritage management plan	A preconstruction survey of the RoW will be undertaken to collect data on location, extent and mitigation measures of known and unknown assets (tangible and intangible cultural heritage (TCH and ICH)) and to consult community leaders about ICH sites or practices not yet identified. A report including a GIS file will be prepared that will recommend location-specific actions to be undertaken that could include: • avoidance of a site • access constraints to reduce disturbance to a site • excavation of a site • a watching brief during vegetation removal or topsoil stripping • requirements to maintain access to cultural heritage assets. A schedule of sites and actions to be undertaken will be prepared and included in the cultural heritage management plan (CHMP) and any appropriate licences obtained. A senior cultural heritage monitor (SCHM) will ensure that the cultural heritage management plan (CHMP) will be implemented, in agreement with relevant government authorities, in advance of construction. The CHMP will include a chance finds procedure. The cultural heritage team will schedule regular meetings and progress reports so that government authorities and appropriate community leaders are kept informed, including: • regular report on progress of excavations • a post-excavation assessment report • a research archive • a final publication of results of tangible or intangible heritage investigations as appropriate to the significance of the outcomes • chance finds reports will be provided to the government authority and relevant stakeholders. The SCHM will be supported by a tangible cultural heritage monitor (TCHM) and an intangible cultural heritage monitor (ICHM) to evaluate the effectiveness of the cultural heritage protection measures and deliver awareness training for all project personnel. Information on intangible cultural heritage (ICH) collected during the preconstruction survey will be evaluated and integrated into the CHMP. This will include information on vulnerable groups if present.	Compliance with the CHMP	Zero noncompliance with the CHMP Full audit trail of findings to action	Every 3 months (quarterly)	Project Relevant Government bodies including NEMA, MEMD, PAU, Ministry of Tourism, Wildlife and Antiquities (MTWA) Department of Museums and Monuments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
60.5 Hoima CHU424: Five potsherds, tuyere, Middle Stone Age lithic axe, Kirwawanga	CHU424: Five potsherds, tuyere, Middle Stone Age lithic axe, Kirwawanga	Disturbance or loss of cultural heritage	Damage or disturbance of feature	Cultural heritage management plan	A preconstruction survey of the RoW will be undertaken to collect data on location, extent and mitigation measures of known and unknown assets (tangible and intangible cultural heritage (TCH and ICH)) and to consult community leaders about ICH sites or practices not yet identified. A report including a GIS file will be prepared that will recommend location-specific actions to be undertaken that could include: • avoidance of a site • access constraints to reduce disturbance to a site • excavation of a site • a watching brief during vegetation removal or topsoil stripping • requirements to maintain access to cultural heritage assets. A schedule of sites and actions to be undertaken will be prepared and included in the cultural heritage management plan (CHMP) and any appropriate licences obtained. A senior cultural heritage monitor (SCHM) will ensure that the CHMP will be implemented, in agreement with relevant government authorities, in advance of construction. The CHMP will include a chance finds procedure. The cultural heritage team will schedule regular meetings and progress reports so that government authorities and appropriate community leaders are kept informed, including: • regular report on progress of excavations • a post-excavation assessment report • a research archive • a final publication of results of tangible or intangible heritage investigations as appropriate to the significance of the outcomes • chance finds reports will be provided to the government authority and relevant stakeholders. The SCHM will be supported by a tangible cultural heritage monitor (TCHM) and an intangible cultural heritage monitor (ICHM) to evaluate the effectiveness of the cultural heritage protection measures and deliver awareness training for all project personnel. Information on ICH collected during the preconstruction survey will be evaluated and integrated into the CHMP. This will include information on vulnerable groups if present.	Compliance with the CHMP	Zero noncompliance with the CHMP Full audit trail of findings to action	Every 3 months (quarterly)	Project Relevant Government bodies including NEMA, MEMD, PAU, Ministry of Tourism, Wildlife and Antiquities (MTWA) Department of Museums and Monuments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
62.7 Hoima CHU425: One potsherd, Kiganja	CHU425: One potsherd, Kiganja	Disturbance or loss of cultural heritage	Damage or disturbance of feature	Cultural heritage management plan	A preconstruction survey of the RoW will be undertaken to collect data on location, extent and mitigation measures of known and unknown assets (tangible and intangible cultural heritage (TCH and ICH)) and to consult community leaders about ICH sites or practices not yet identified. A report including a GIS file will be prepared that will recommend location-specific actions to be undertaken that could include: • avoidance of a site • access constraints to reduce disturbance to a site • excavation of a site • a watching brief during vegetation removal or topsoil stripping • requirements to maintain access to cultural heritage assets. A schedule of sites and actions to be undertaken will be prepared and included in the cultural heritage management plan (CHMP) and any appropriate licences obtained. A senior cultural heritage monitor (SCHM) will ensure that the CHMP will be implemented, in agreement with relevant government authorities, in advance of construction. The CHMP will include a chance finds procedure. The cultural heritage team will schedule regular meetings and progress reports so that government authorities and appropriate community leaders are kept informed, including: • regular report on progress of excavations • a post-excavation assessment report • a research archive • a final publication of results of tangible or intangible heritage investigations as appropriate to the significance of the outcomes • chance finds reports will be provided to the government authority and relevant stakeholders. The SCHM will be supported by a tangible cultural heritage monitor (TCHM) and an intangible cultural heritage monitor (ICHM) to evaluate the effectiveness of the cultural heritage protection measures and deliver awareness training for all project personnel. Information on ICH collected during the preconstruction survey will be evaluated and integrated into the CHMP. This will include information on vulnerable groups if present.	Compliance with the CHMP	Zero noncompliance with the CHMP Full audit trail of findings to action	Every 3 months (quarterly)	Project Relevant Government bodies including NEMA, MEMD, PAU, Ministry of Tourism, Wildlife and Antiquities (MTWA) Department of Museums and Monuments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
63.5 Hoima CHU426: Five potsherds Late Iron Age, Kiganja	CHU426: Five potsherds Late Iron Age, Kiganja	Disturbance or loss of cultural heritage	Damage or disturbance of feature	Cultural heritage management plan	A preconstruction survey of the RoW will be undertaken to collect data on location, extent and mitigation measures of known and unknown assets (tangible and intangible cultural heritage (TCH and ICH)) and to consult community leaders about ICH sites or practices not yet identified. A report including a GIS file will be prepared that will recommend location-specific actions to be undertaken that could include: • avoidance of a site • access constraints to reduce disturbance to a site • excavation of a site • a watching brief during vegetation removal or topsoil stripping • requirements to maintain access to cultural heritage assets. A schedule of sites and actions to be undertaken will be prepared and included in the cultural heritage management plan (CHMP) and any appropriate licences obtained. A senior cultural heritage monitor (SCHM) will ensure that the CHMP will be implemented, in agreement with relevant government authorities, in advance of construction. The CHMP will include a chance finds procedure. The cultural heritage team will schedule regular meetings and progress reports so that government authorities and appropriate community leaders are kept informed, including: • regular report on progress of excavations • a post-excavation assessment report • a research archive • a final publication of results of tangible or intangible heritage investigations as appropriate to the significance of the outcomes • chance finds reports will be provided to the government authority and relevant stakeholders. The SCHM will be supported by a tangible cultural heritage monitor (TCHM) and an intangible cultural heritage monitor (ICHM) to evaluate the effectiveness of the cultural heritage protection measures and deliver awareness training for all project personnel. Information on ICH collected during the preconstruction survey will be evaluated and integrated into the CHMP. This will include information on vulnerable groups if present.	Compliance with the CHMP	Zero noncompliance with the CHMP Full audit trail of findings to action	Every 3 months (quarterly)	Project Relevant Government bodies including NEMA, MEMD, PAU, Ministry of Tourism, Wildlife and Antiquities (MTWA) Department of Museums and Monuments

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Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
63.8 Hoima CHU427: Two potsherds, Kiganja	CHU427: Two potsherds, Kiganja	Disturbance or loss of cultural heritage	Damage or disturbance of feature	Cultural heritage management plan	A preconstruction survey of the RoW will be undertaken to collect data on location, extent and mitigation measures of known and unknown assets (tangible and intangible cultural heritage (TCH and ICH)) and to consult community leaders about ICH sites or practices not yet identified. A report including a GIS file will be prepared that will recommend location-specific actions to be undertaken that could include: • avoidance of a site • access constraints to reduce disturbance to a site • excavation of a site • a watching brief during vegetation removal or topsoil stripping • requirements to maintain access to cultural heritage assets. A schedule of sites and actions to be undertaken will be prepared and included in the cultural heritage management plan (CHMP) and any appropriate licences obtained. A senior cultural heritage monitor (SCHM) will ensure that the CHMP will be implemented, in agreement with relevant government authorities, in advance of construction. The CHMP will include a chance finds procedure. The cultural heritage team will schedule regular meetings and progress reports so that government authorities and appropriate community leaders are kept informed, including: • regular report on progress of excavations • a post-excavation assessment report • a research archive • a final publication of results of tangible or intangible heritage investigations as appropriate to the significance of the outcomes • chance finds reports will be provided to the government authority and relevant stakeholders. The SCHM will be supported by a tangible cultural heritage monitor (TCHM) and an intangible cultural heritage monitor (ICHM) to evaluate the effectiveness of the cultural heritage protection measures and deliver awareness training for all project personnel. Information on ICH collected during the preconstruction survey will be evaluated and integrated into the CHMP. This will include information on vulnerable groups if present.	Compliance with the CHMP	Zero noncompliance with the CHMP Full audit trail of findings to action	Every 3 months (quarterly)	Project Relevant Government bodies including NEMA, MEMD, PAU, Ministry of Tourism, Wildlife and Antiquities (MTWA) Department of Museums and Monuments

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Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
68.9 Hoima CHU428: Early Iron Age and Late Iron Age potsherds and possibly Kansyore type pottery, Kabatindure	CHU428: Early Iron Age and Late Iron Age potsherds and possibly Kansyore type pottery, Kabatindure	Disturbance or loss of cultural heritage	Damage or disturbance of feature	Cultural heritage management plan	A preconstruction survey of the RoW will be undertaken to collect data on location, extent and mitigation measures of known and unknown assets (tangible and intangible cultural heritage (TCH and ICH)) and to consult community leaders about ICH sites or practices not yet identified. A report including a GIS file will be prepared that will recommend location-specific actions to be undertaken that could include: • avoidance of a site • access constraints to reduce disturbance to a site • excavation of a site • a watching brief during vegetation removal or topsoil stripping • requirements to maintain access to cultural heritage assets. A schedule of sites and actions to be undertaken will be prepared and included in the cultural heritage management plan (CHMP) and any appropriate licences obtained. A senior cultural heritage monitor (SCHM) will ensure that the CHMP will be implemented, in agreement with relevant government authorities, in advance of construction. The CHMP will include a chance finds procedure. The cultural heritage team will schedule regular meetings and progress reports so that government authorities and appropriate community leaders are kept informed, including: • regular report on progress of excavations • a post-excavation assessment report • a research archive • a final publication of results of tangible or intangible heritage investigations as appropriate to the significance of the outcomes • chance finds reports will be provided to the government authority and relevant stakeholders. The SCHM will be supported by a tangible cultural heritage monitor (TCHM) and an intangible cultural heritage monitor (ICHM) to evaluate the effectiveness of the cultural heritage protection measures and deliver awareness training for all project personnel. Information on ICH collected during the preconstruction survey will be evaluated and integrated into the CHMP. This will include information on vulnerable groups if present.	Compliance with the CHMP	Zero noncompliance with the CHMP Full audit trail of findings to action	Every 3 months (quarterly)	Project Relevant Government bodies including NEMA, MEMD, PAU, Ministry of Tourism, Wildlife and Antiquities (MTWA) Department of Museums and Monuments

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KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
72 Hoima CHU429: Many Early Iron Age-Late Iron Age potsherds, Hanga	CHU429: Many Early Iron Age-Late Iron Age potsherds, Hanga	Disturbance or loss of cultural heritage	Damage or disturbance of feature	Cultural heritage management plan	A preconstruction survey of the RoW will be undertaken to collect data on location, extent and mitigation measures of known and unknown assets (tangible and intangible cultural heritage (TCH and ICH)) and to consult community leaders about ICH sites or practices not yet identified. A report including a GIS file will be prepared that will recommend location-specific actions to be undertaken that could include: • avoidance of a site • access constraints to reduce disturbance to a site • excavation of a site • a watching brief during vegetation removal or topsoil stripping • requirements to maintain access to cultural heritage assets. A schedule of sites and actions to be undertaken will be prepared and included in the cultural heritage management plan (CHMP) and any appropriate licences obtained. A senior cultural heritage monitor (SCHM) will ensure that the CHMP will be implemented, in agreement with relevant government authorities, in advance of construction. The CHMP will include a chance finds procedure. The cultural heritage team will schedule regular meetings and progress reports so that government authorities and appropriate community leaders are kept informed, including: • regular report on progress of excavations • a post-excavation assessment report • a research archive • a final publication of results of tangible or intangible heritage investigations as appropriate to the significance of the outcomes • chance finds reports will be provided to the government authority and relevant stakeholders. The SCHM will be supported by a tangible cultural heritage monitor (TCHM) and an intangible cultural heritage monitor (ICHM) to evaluate the effectiveness of the cultural heritage protection measures and deliver awareness training for all project personnel. Information on ICH collected during the preconstruction survey will be evaluated and integrated into the CHMP. This will include information on vulnerable groups if present.	Compliance with the CHMP	Zero noncompliance with the CHMP Full audit trail of findings to action	Every 3 months (quarterly)	Project Relevant Government bodies including NEMA, MEMD, PAU, Ministry of Tourism, Wildlife and Antiquities (MTWA) Department of Museums and Monuments

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KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
75.1 Hoima CHU430: Two potsherds, Buhiriki	CHU430: Two potsherds, Buhiriki	Disturbance or loss of cultural heritage	Damage or disturbance of feature	Cultural heritage management plan	A preconstruction survey of the RoW will be undertaken to collect data on location, extent and mitigation measures of known and unknown assets (tangible and intangible cultural heritage (TCH and ICH)) and to consult community leaders about ICH sites or practices not yet identified. A report including a GIS file will be prepared that will recommend location-specific actions to be undertaken that could include: • avoidance of a site • access constraints to reduce disturbance to a site • excavation of a site • a watching brief during vegetation removal or topsoil stripping • requirements to maintain access to cultural heritage assets. A schedule of sites and actions to be undertaken will be prepared and included in the cultural heritage management plan (CHMP) and any appropriate licences obtained. A senior cultural heritage monitor (SCHM) will ensure that the CHMP will be implemented, in agreement with relevant government authorities, in advance of construction. The CHMP will include a chance finds procedure. The cultural heritage team will schedule regular meetings and progress reports so that government authorities and appropriate community leaders are kept informed, including: • regular report on progress of excavations • a post-excavation assessment report • a research archive • a final publication of results of tangible or intangible heritage investigations as appropriate to the significance of the outcomes • chance finds reports will be provided to the government authority and relevant stakeholders. The SCHM will be supported by a tangible cultural heritage monitor (TCHM) and an intangible cultural heritage monitor (ICHM) to evaluate the effectiveness of the cultural heritage protection measures and deliver awareness training for all project personnel. Information on ICH collected during the preconstruction survey will be evaluated and integrated into the CHMP. This will include information on vulnerable groups if present.	Compliance with the CHMP	Zero noncompliance with the CHMP Full audit trail of findings to action	Every 3 months (quarterly)	Project

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Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
80.9 Hoima CHU431: Two potsherds, Nakabingo	CHU431: Two potsherds, Nakabingo	Disturbance or loss of cultural heritage	Damage or disturbance of feature	Cultural heritage management plan	A preconstruction survey of the RoW will be undertaken to collect data on location, extent and mitigation measures of known and unknown assets (tangible and intangible cultural heritage (TCH and ICH)) and to consult community leaders about ICH sites or practices not yet identified. A report including a GIS file will be prepared that will recommend location-specific actions to be undertaken that could include: • avoidance of a site • access constraints to reduce disturbance to a site • excavation of a site • a watching brief during vegetation removal or topsoil stripping • requirements to maintain access to cultural heritage assets. A schedule of sites and actions to be undertaken will be prepared and included in the cultural heritage management plan (CHMP) and any appropriate licences obtained. A senior cultural heritage monitor (SCHM) will ensure that the CHMP will be implemented, in agreement with relevant government authorities, in advance of construction. The CHMP will include a chance finds procedure. The cultural heritage team will schedule regular meetings and progress reports so that government authorities and appropriate community leaders are kept informed, including: • regular report on progress of excavations • a post-excavation assessment report • a research archive • a final publication of results of tangible or intangible heritage investigations as appropriate to the significance of the outcomes • chance finds reports will be provided to the government authority and relevant stakeholders. The SCHM will be supported by a tangible cultural heritage monitor (TCHM) and an intangible cultural heritage monitor (ICHM) to evaluate the effectiveness of the cultural heritage protection measures and deliver awareness training for all project personnel. Information on ICH collected during the preconstruction survey will be evaluated and integrated into the CHMP. This will include information on vulnerable groups if present.	Compliance with the CHMP	Zero noncompliance with the CHMP Full audit trail of findings to action	Every 3 months (quarterly)	Project Relevant Government bodies including NEMA, MEMD, PAU, Ministry of Tourism, Wildlife and Antiquities (MTWA) Department of Museums and Monuments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
82 Hoima CHU136: Liberty Spiritual Well of God Church.	CHU136: Liberty Spiritual Well of God Church.	Disturbance or loss of cultural heritage	Damage or disturbance of feature	Cultural heritage management plan.	A preconstruction survey of the RoW will be undertaken to collect data on location, extent and mitigation measures of known and unknown assets (tangible and intangible cultural heritage (TCH and ICH)) and to consult community leaders about ICH sites or practices not yet identified. A report including a GIS file will be prepared that will recommend location-specific actions to be undertaken that could include: • avoidance of a site • access constraints to reduce disturbance to a site • excavation of a site • a watching brief during vegetation removal or topsoil stripping • requirements to maintain access to cultural heritage assets. A schedule of sites and actions to be undertaken will be prepared and included in the cultural heritage management plan (CHMP) and any appropriate licences obtained. A senior cultural heritage monitor (SCHM) will ensure that the CHMP will be implemented, in agreement with relevant government authorities, in advance of construction. The CHMP will include a chance finds procedure. The cultural heritage team will schedule regular meetings and progress reports so that government authorities and appropriate community leaders are kept informed, including: • regular report on progress of excavations • a post-excavation assessment report • a research archive • a final publication of results of tangible or intangible heritage investigations as appropriate to the significance of the outcomes • chance finds reports will be provided to the government authority and relevant stakeholders. The SCHM will be supported by a tangible cultural heritage monitor (TCHM) and an intangible cultural heritage monitor (ICHM) to evaluate the effectiveness of the cultural heritage protection measures and deliver awareness training for all project personnel. Information on ICH collected during the preconstruction survey will be evaluated and integrated into the CHMP. This will include information on vulnerable groups if present.	Compliance with the CHMP Documentation supporting that findings reported by the ICHM are evaluated and any necessary action required to protect intangible cultural heritage is implemented	Zero noncompliance with the CHMP Full audit trail of findings to action	Every 3 months (quarterly)	Project Relevant Government bodies including NEMA, MEMD, PAU, Ministry of Tourism, Wildlife and Antiquities (MTWA) Department of Museums and Monuments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
83.9 Hoima CHU432: One potsherd, shell, Kyakabogga	CHU432: One potsherd, shell, Kyakabogga	Disturbance or loss of cultural heritage	Damage or disturbance of feature	Cultural heritage management plan	A preconstruction survey of the RoW will be undertaken to collect data on location, extent and mitigation measures of known and unknown assets (tangible and intangible cultural heritage (TCH and ICH)) and to consult community leaders about ICH sites or practices not yet identified. A report including a GIS file will be prepared that will recommend location-specific actions to be undertaken that could include: • avoidance of a site • access constraints to reduce disturbance to a site • excavation of a site • a watching brief during vegetation removal or topsoil stripping • requirements to maintain access to cultural heritage assets. A schedule of sites and actions to be undertaken will be prepared and included in the cultural heritage management plan (CHMP) and any appropriate licences obtained. A senior cultural heritage monitor (SCHM) will ensure that the CHMP will be implemented, in agreement with relevant government authorities, in advance of construction. The CHMP will include a chance finds procedure. The cultural heritage team will schedule regular meetings and progress reports so that government authorities and appropriate community leaders are kept informed, including: • regular report on progress of excavations • a post-excavation assessment report • a research archive • a final publication of results of tangible or intangible heritage investigations as appropriate to the significance of the outcomes • chance finds reports will be provided to the government authority and relevant stakeholders. The SCHM will be supported by a tangible cultural heritage monitor (TCHM) and an intangible cultural heritage monitor (ICHM) to evaluate the effectiveness of the cultural heritage protection measures and deliver awareness training for all project personnel. Information on ICH collected during the preconstruction survey will be evaluated and integrated into the CHMP. This will include information on vulnerable groups if present.	Compliance with the CHMP	Zero noncompliance with the CHMP Full audit trail of findings to action	Every 3 months (quarterly)	Project Relevant Government bodies including NEMA, MEMD, PAU, Ministry of Tourism, Wildlife and Antiquities (MTWA) Department of Museums and Monuments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
84 Hoima CHU131: Roman Catholic Church.	CHU131: Roman Catholic Church.	Disturbance or loss of cultural heritage	Damage or disturbance of feature	Cultural heritage management plan	A preconstruction survey of the RoW will be undertaken to collect data on location, extent and mitigation measures of known and unknown assets (tangible and intangible cultural heritage (TCH and ICH)) and to consult community leaders about ICH sites or practices not yet identified. A report including a GIS file will be prepared that will recommend location-specific actions to be undertaken that could include: • avoidance of a site • access constraints to reduce disturbance to a site • excavation of a site • a watching brief during vegetation removal or topsoil stripping • requirements to maintain access to cultural heritage assets. A schedule of sites and actions to be undertaken will be prepared and included in the cultural heritage management plan (CHMP) and any appropriate licences obtained. A senior cultural heritage monitor (SCHM) will ensure that the CHMP will be implemented, in agreement with relevant government authorities, in advance of construction. The CHMP will include a chance finds procedure. The cultural heritage team will schedule regular meetings and progress reports so that government authorities and appropriate community leaders are kept informed, including: • regular report on progress of excavations • a post-excavation assessment report • a research archive • a final publication of results of tangible or intangible heritage investigations as appropriate to the significance of the outcomes • chance finds reports will be provided to the government authority and relevant stakeholders. The SCHM will be supported by a tangible cultural heritage monitor (TCHM) and an intangible cultural heritage monitor (ICHM) to evaluate the effectiveness of the cultural heritage protection measures and deliver awareness training for all project personnel. Information on ICH collected during the preconstruction survey will be evaluated and integrated into the CHMP. This will include information on vulnerable groups if present.	Compliance with the CHMP Documentation supporting that findings reported by the ICHM are evaluated and any necessary action required to protect intangible cultural heritage is implemented	Zero noncompliance with the CHMP Full audit trail of findings to action	Every 3 months (quarterly)	Project Relevant Government bodies including NEMA, MEMD, PAU, Ministry of Tourism, Wildlife and Antiquities (MTWA) Department of Museums and Monuments

Location-Specific ESMP Matrix

Table 10.12-3 Location-Specific ESMP Matrix – Construction Phase

KP Location	Landmark	Aspect	Potential Impact	Management Plan	Mitigation Measure	Parameter to be monitored	Performance Indicators/Targets or Acceptance Criteria	Monitoring Frequency	Responsibility
86.5 Hoima CHU433: One potsherd, Lwamutanga	CHU433: One potsherd, Lwamutanga	Disturbance or loss of cultural heritage	Damage or disturbance of feature	Cultural heritage management plan	A preconstruction survey of the RoW will be undertaken to collect data on location, extent and mitigation measures of known and unknown assets (tangible and intangible cultural heritage (TCH and ICH)) and to consult community leaders about ICH sites or practices not yet identified. A report including a GIS file will be prepared that will recommend location-specific actions to be undertaken that could include: • avoidance of a site • access constraints to reduce disturbance to a site • excavation of a site • a watching brief during vegetation removal or topsoil stripping • requirements to maintain access to cultural heritage assets. A schedule of sites and actions to be undertaken will be prepared and included in the cultural heritage management plan (CHMP) and any appropriate licences obtained. A senior cultural heritage monitor (SCHM) will ensure that the CHMP will be implemented, in agreement with relevant government authorities, in advance of construction. The CHMP will include a chance finds procedure. The cultural heritage team will schedule regular meetings and progress reports so that government authorities and appropriate community leaders are kept informed, including: • regular report on progress of excavations • a post-excavation assessment report • a research archive • a final publication of results of tangible or intangible heritage investigations as appropriate to the significance of the outcomes • chance finds reports will be provided to the government authority and relevant stakeholders. The SCHM will be supported by a tangible cultural heritage monitor (TCHM) and an intangible cultural heritage monitor (ICHM) to evaluate the effectiveness of the cultural heritage protection measures and deliver awareness training for all project personnel. Information on ICH collected during the preconstruction survey will be evaluated and integrated into the CHMP. This will include information on vulnerable groups if present.	Compliance with the CHMP	Zero noncompliance with the CHMP Full audit trail of findings to action	Every 3 months (quarterly)	Project Relevant Government bodies including NEMA, MEMD, PAU, Ministry of Tourism, Wildlife and Antiquities (MTWA) Department of Museums and Monuments