




ENVIRONMENTAL & SOCIAL MANAGEMENT PLAN:

FOR THE ALIGNMENT AND CONSTRUCTION OF PUBLIC ROADS AND THE
CONSTRUCTION OF INFRASTRUCTURE AS A RESULT OF TOWNSHIP
ESTABLISHMENT WITHIN KARIBIB

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Title	RENEWAL OF ENVIRONMENTAL CLEARANCE CERTIFICATE (ECC) APP 2578 FOR THE CONSTRUCTION OF PUBLIC ROADS, INFRASTRUCTURE, AND ACTIVITIES WITHIN WATERCOURSES AND FLOOD LINES AS PART OF THE TOWNSHIP ESTABLISHMENT AT KARIBIB
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EXECUTIVE SUMMARY

The Usab Township Establishment project in Karibib aims to address housing needs, stimulate local economic development, and improve municipal service delivery. The project includes the construction of roads, bulk infrastructure, and service installations within defined township layouts. The Environmental Management Plan (EMP) was developed to ensure that potential environmental and social impacts are effectively identified, mitigated, and monitored throughout planning, construction, and operational phases.

Key environmental and social risks include dust generation, noise and vibration, waste management, potential water contamination, biodiversity disturbance, and community health and safety concerns. The EMP provides mitigation measures for each risk area, ensuring compliance with national legislation and international standards, including the Namibian Environmental Management Act, the KfW Sustainability Guideline, and World Bank ESS.

The project also emphasises stakeholder engagement, local employment, and fair recruitment, supported by a grievance mechanism to address any community concerns. Detailed roles and responsibilities are defined for the Karibib Town Council, Development Workshop Namibia (DWN), contractors, and other project partners.

Overall, the EMP aims to facilitate sustainable development while maximising socio-economic benefits for the Karibib community.

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1 INTRODUCTION

The Karibib Town Council, in collaboration with Development Workshop Namibia (DWN), is implementing the Usab Land Delivery Project to service approximately 1,534 erven within Erven 2 and 332 Usab Proper, as well as Usab Extensions 5 to 10, located in Karibib, Erongo Region. The project forms part of the Council's broader strategy to provide serviced land for low- and middle-income residents and to upgrade informal settlements into sustainable urban neighbourhoods.

The project involves the construction of bulk infrastructure, including roads, water supply systems, electricity distribution networks, and stormwater management systems. Construction activities fall under DWN's Component 1: Land Delivery, with *[insert name of construction company]* appointed as the main contractor. Knight Piésold Consulting (Pty) Ltd has been appointed by DWN as the Implementation Consultant, responsible for supervising works and ensuring compliance with technical standards and approved engineering designs.

DWN has contracted Urban Dynamics Africa (UDA) to renew the Environmental Management Plan (EMP) to ensure environmental compliance across the construction lifecycle in accordance with Namibian law and international best practice.

2 PROJECT DESCRIPTION

This section outlines the core details of the Usab development project in Karibib. The information is drawn from available technical documentation—including layout plans, zoning data, and engineering inputs—site visits conducted during the township planning phase, and consultations with local authorities and development partners. The objective is to provide an understanding of site conditions, current land use, environmental and social sensitivities, and the infrastructure interventions needed to formalise the existing settlement and support structured urban growth.

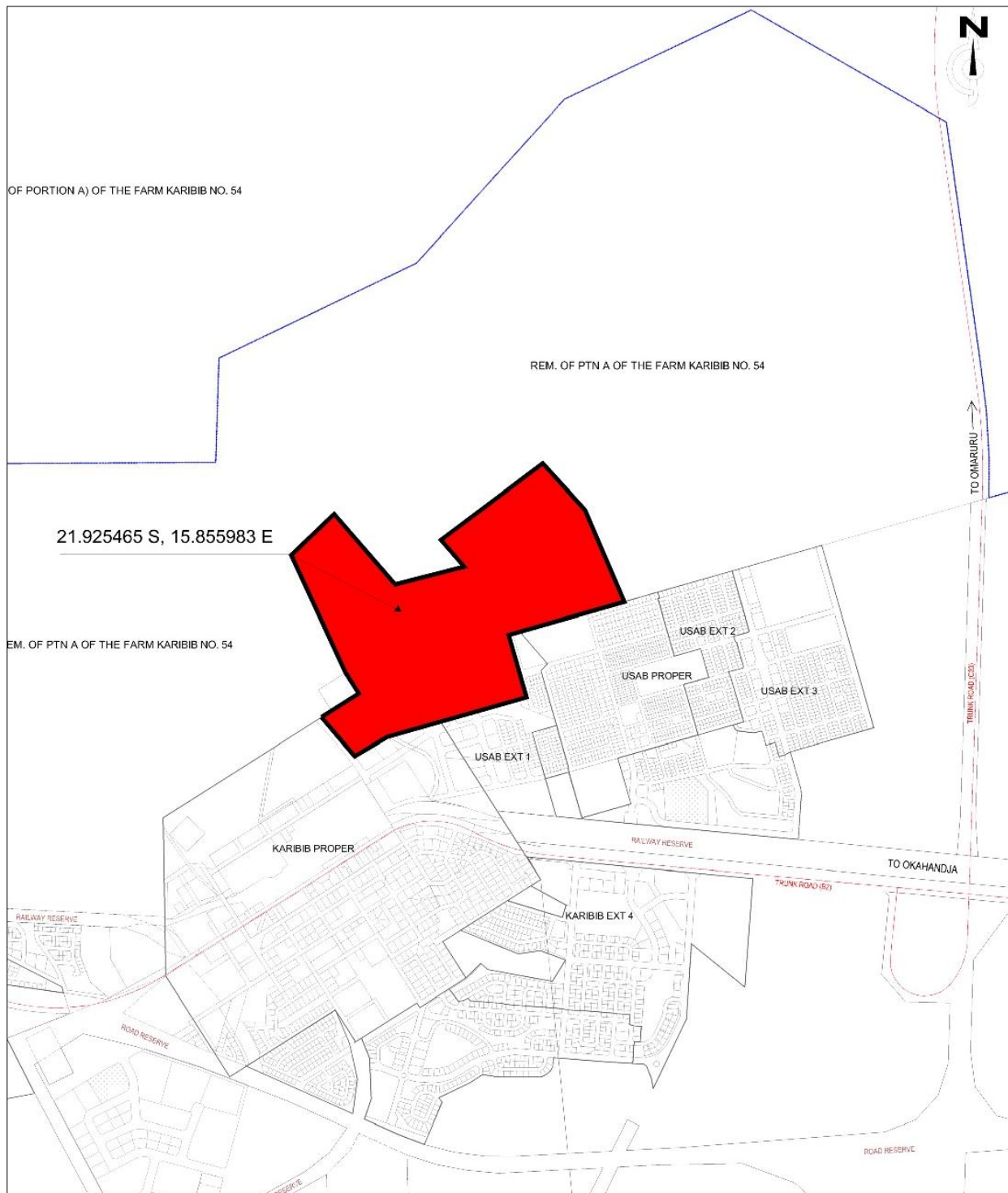
2.1 DESCRIPTION OF THE SITE

LOCATION AND EXTENT:

The project is situated on the northern outskirts of Karibib, within the Karibib Townlands and Erongo Region under Registration Division H. The site is adjacent to Usab Proper and Extension 1, and comprises of Usab Extensions 5 to 10, along with Portion A of Portion 23 of Portion 18 (a portion of Farm Karibib No 54), Erven 2 and 332 Karibib Proper.

The total development area covers approximately 96.4 hectares and is located at coordinates -21.925465 S, 15.855983 E. A locality map is provided in Annexure 6 (Figure 1).

Figure 1: Locality Map



OWNERSHIP AND SITE STATUS:

The Karibib Town Council is the registered owner of all land within the project area. Extensions 6 to 10 have been approved, surveyed, and registered under the Council's name. Portion A of Portion 23 of Portion 18 (part of Farm Karibib No. 54), along with Erven 2 and 332, are also owned by the Council, though these areas are still undergoing planning and statutory approval.

The site is classified as a Brownfield development, currently occupied by community members who were relocated and allocated plots through the Council's resettlement initiative in collaboration with DWN. Several erven within the approved extensions are in the process of being sold and transferred to residents. The remaining land is retained by the Council for the construction of roads, public open spaces, and bulk infrastructure services.

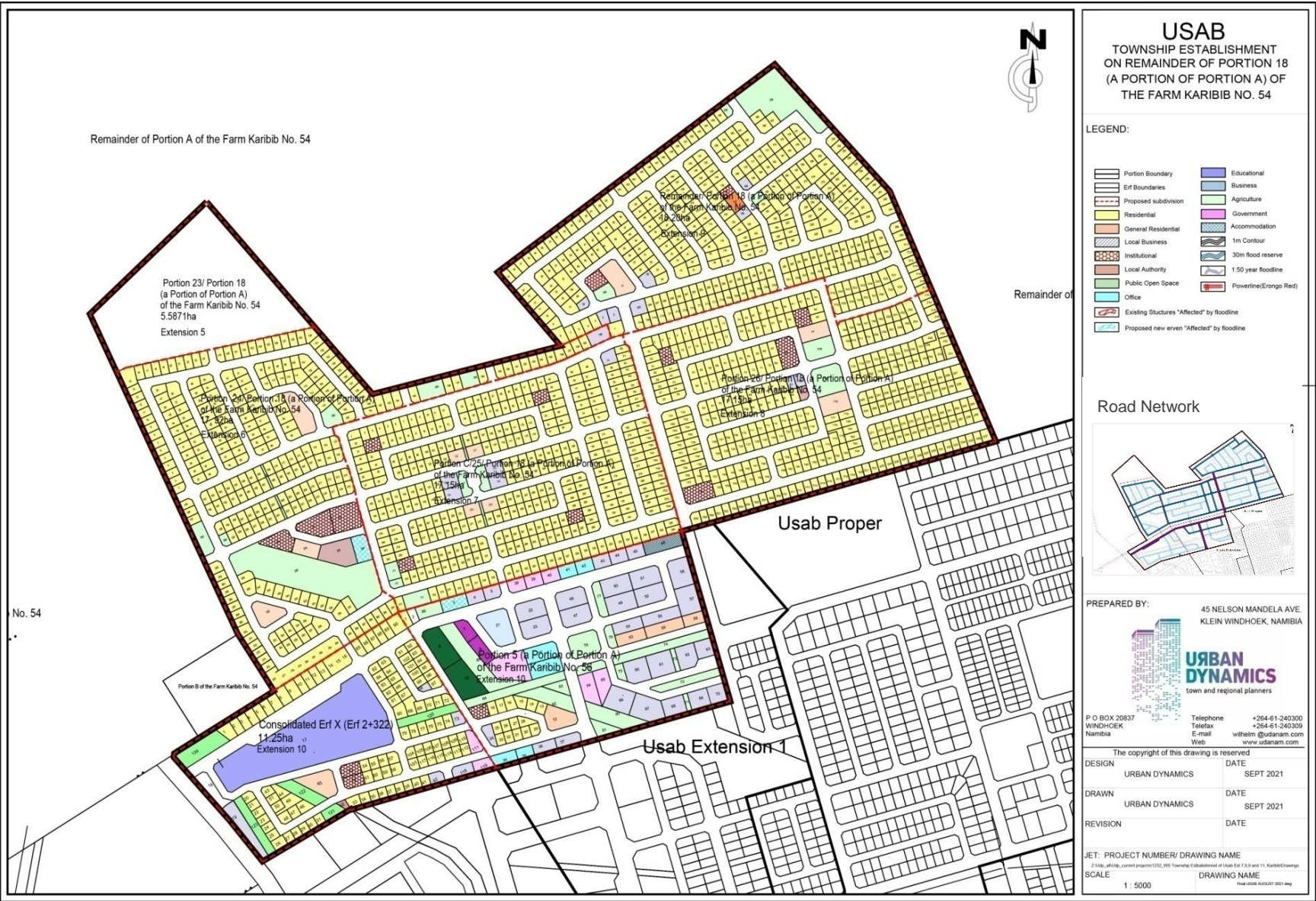
LAND USE ACTIVITIES:

The townships' layout includes residential, business, institutional and public open space land uses, replacing the previous "general industrial" zoning. The layout also incorporates a hierarchical road network designed to facilitate efficient traffic flow within the township. Figure 2 illustrates the erven zoning, road network, and overall layout.

ENVIRONMENTAL AND SOCIAL BASELINE:

The natural landscape has been significantly modified. While scattered mature scrubs and small trees remain, the area is largely cleared and ecologically degraded. There are no cultural or heritage sites, graves, or wildlife habitats within the development area. The area functions more as a developing urban settlement than a natural ecosystem.

Figure 2: Usab Layout



FLOOD RISK AND NATURAL FEATURES:

A flood study by Knight Piésold (2021) confirmed the presence of four ephemeral streams and mapped the 1:20 and 1:50-year flood lines. These have been accommodated in the layout as public open space and drainage corridors, reducing flood risk and preserving natural runoff patterns.

The climate is semi-arid, with low annual rainfall (180–224 mm), high evaporation, and prevailing south-westerly winds. The site has a gentle slope and a topography shaped by seasonal runoff.

ADJACENT ACTIVITIES:

The site to the south is located adjacent to Karibib Proper, Usab Proper, and Usab Extension 1, which are mixed-use neighbourhoods with a strong residential character. To the north, the site borders the Karibib Townlands and the remainder of Farm Karibib No. 54, both of which consist of open, undeveloped land. While no large-scale construction is currently taking place in the immediate surroundings, project-related activities have already commenced on site. Further infrastructure development is expected to continue as part of the township servicing and phased construction process.

PROJECT AREA OF INFLUENCE:

The Area of Influence (Aol) includes all erven and land parcels directly affected by the project, including Karibib Proper, Karibib Portion, Usab Proper, and Usab Extensions 1, 5 to 10. It also includes nearby residential areas that may be indirectly impacted by construction-related noise, dust, vibration, and traffic. The Aol covers associated bulk infrastructure such as water and sewer pipelines, electricity distribution networks, road systems, and stormwater drainage. While primarily confined to the township boundaries, the Aol extends to any areas where project-related impacts — such as environmental effects or social disruptions — may reasonably occur.

In addition to managing potential risks, the project is expected to generate a range of positive impacts across the Area of Influence. These include the provision of urgently needed serviced land and housing for low- and middle-income residents, as well as temporary employment opportunities for local labourers and small businesses. The construction activities will stimulate the local economy, generate income for residents, and contribute to municipal, regional, and national revenue through taxes, service fees, and procurement of goods and services. These benefits support broader development goals for Karibib and Namibia as a whole.

2.2 PROJECT ACTIVITIES

The Usab Township Establishment Project is an infrastructure development intervention focused on delivering bulk services to support formal township expansion in Karibib. The project falls under DWN's Component 1: Land Delivery, with construction phased across Erven 2 and 332 and Usab Extensions 5 to 10.

TYPE OF PROJECT:

This is a bulk infrastructure project, intended to unlock serviced land for residential, institutional, and business purposes. The key services planned include:

- Road infrastructure (gravel and/or future bitumen standard)
- Water supply reticulation, including communal water points and mainline access
- Electricity distribution infrastructure, including streetlights and household-ready connections
- Stormwater management systems using open drainage and natural watercourses

Note: A full sewerage network is not planned in the first phase. Residents will make use of on-site sanitation solutions (e.g., septic tanks, dry systems). Corridors for future sewer lines have been reserved in the layout to allow for long-term upgrades.

PLANNED CONSTRUCTION ACTIVITIES:

Construction activities will include:

- Site clearance and preparation, involving light bush removal and cleaning of informal waste
- Earthworks (excavation, levelling, backfilling)
- Construction of:
 - Stormwater channels and culverts near streams
 - Gravel roads, compacted to urban service standards
 - Water supply infrastructure
 - Electrical poles, cables, and transformer bases
- Connection of access roads to existing Karibib street infrastructure
- Installation of safety signage, basic fencing, and traffic management barriers where required

Heavy construction equipment such as excavators, tipper trucks, graders, compactors, and water trucks will be used throughout the process.

PROJECT PHASING AND SCALE:

Construction will be phased depending on funding availability and technical priorities.

The initial focus is on:

- Usab Extensions 5 to 7
- Servicing of Erven 2 and 332

Later phases will expand services to:

- Usab Extensions 8 to 10
- Remaining un-serviced areas

The township layout was developed by UDA and forms the basis for the zoning and road network design. The cadastral surveying was completed by Strydom & Associates Land Surveyors, a registered land surveyor, who also confirmed the physical layout for Extensions 6 to 10. Engineering layouts was done by KP.

2.3 DEVELOPMENT STAKEHOLDERS

The Figure 3 and Table 1 summarise the main stakeholders involved in the Usab Township project in Karibib, including their roles, engagement activities, and an indicative timeline for involvement.

Figure 3: Main Stakeholders' Involvement Timeline

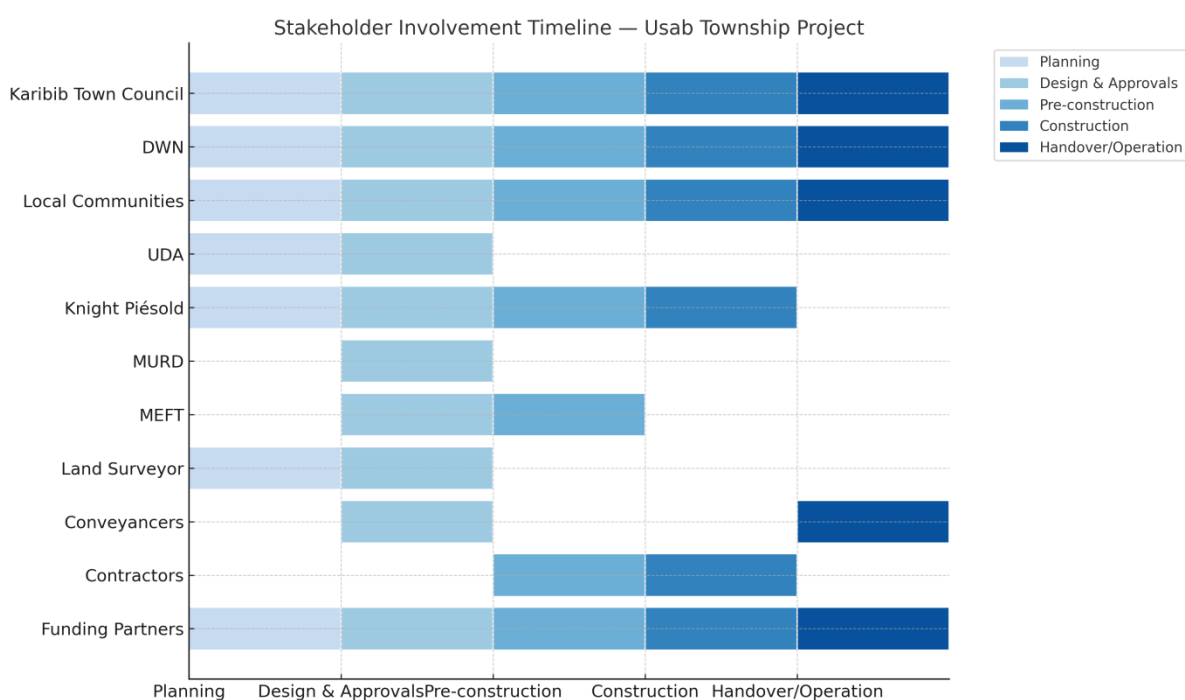


Table 1: Development Stakeholders

STAKEHOLDER	ROLE / RESPONSIBILITY	ENGAGEMENT OR KEY ACTIONS	INDICATIVE TIMELINE
KARIBIB TOWN COUNCIL	Overall authority for township establishment, planning coordination, and approvals.	Planning and arranging development agreement with DWN; Approvals by CEO and Council resolutions; Technical arrangements with service providers and Engineering Department; Review and consent before MURD approval; Ongoing oversight and community liaison.	Planning to project handover.
DEVELOPMENT WORKSHOP NAMIBIA (DWN)	Implementation consultant, technical coordinator, and project facilitator.	Project conceptual planning support and strategy; Technical coordination with UDA, Knight Piésold, and surveyors; Stakeholder engagement and community consultation facilitation; Preparation and implementation of EMP and ESHS measures; On-site supervision and construction monitoring; Capacity building and training for contractors and local stakeholders.	Entire project lifecycle.
FUNDING & DEVELOPMENT PARTNERS	Provide financial and technical support.	Support for planning, design, and implementation.	All phases.
LOCAL COMMUNITIES AND RESIDENTS	Primary beneficiaries and directly affected stakeholders.	Public consultations, feedback meetings, grievance mechanism participation.	Throughout the project lifecycle.

STAKEHOLDER	ROLE / RESPONSIBILITY	ENGAGEMENT OR KEY ACTIONS	INDICATIVE TIMELINE
URBAN DYNAMICS AFRICA (UDA)	Township layout design, statutory planning application, and consultation.	Prepare and submit layout to Town Council for initial approval; Submit final layout to MURD for statutory approval; Prepare Screening Report and ECC application to MEFT; Facilitate community engagement during planning and approval stages.	Planning phase.
KNIGHT PIÉSOLD (KP) CONSULTING (KP)	Engineering design, flood risk study, monitoring and sign-off on construction activities.	Technical design, construction monitoring, and quality assurance.	Planning to construction phase.
MINISTRY OF URBAN AND RURAL DEVELOPMENT (MURD)	Approves township establishment application.	Review and statutory final approval.	During layout application stage.
MINISTRY OF ENVIRONMENT, FORESTRY AND TOURISM (MEFT)	Approves ECC and ensures environmental compliance.	ECC application review and decision-making.	Pre-construction phase.
STRYDOM & ASSOCIATES (LAND SURVEYOR)	Aerial photography, cadastral surveys, and final layout confirmation.	Provide aerial mapping for planning and design; Conduct cadastral surveys and confirm layout boundaries.	Planning stage.
CONVEYANCERS	Legal registration of townships and erven.	Registration of legal documents and follow-ups.	Post-approval phase.
CONTRACTORS (TBC)	Construction and infrastructure implementation.	EMP compliance, on-site environmental and social management.	Construction phase.

3 ROLES AND RESPONSIBILITIES

This section outlines the roles and responsibilities of key stakeholders involved in implementing and managing the EMP during the construction phase of the Usab Township Establishment projects. The EMP ensures compliance with environmental legislation and best practices while managing project-related environmental impacts. Successful implementation requires coordination between DWN, contractors, and other entities.

3.1 DEVELOPMENT WORKSHOP NAMIBIA (DWN)

DWN, as Implementation Consultant, is responsible for overall environmental management during construction, including:

- Ensuring compliance with national environmental legislation and EMP mitigation measures.
- Ensuring design and planning comply with national and international best practices.
- Monitoring contractor and subcontractor performance.
- Serving as the primary contact for stakeholder consultation and feedback.
- Providing training to construction workers on environmental management and EMP implementation.

The Programme Manager holds ultimate responsibility for EMP implementation, while the Health and Safety (E&S) Manager supports contractors and guides EMP adherence.

3.2 CONTRACTORS

The Contractor (name to be inserted) must fulfil EMP commitments and ensure subcontractors do the same. Responsibilities include:

- Conducting monitoring and site audits to verify EMP implementation, reporting findings to the Project Environmental Advisor (PEA).
- Promptly reporting environmental issues or incidents to DWN.
- Supporting DWN in training construction personnel on environmental management.

3.3 OTHER ENTITIES

Knight Piésold Consulting (Pty) Ltd (KP) will also undertake periodic site inspections during construction to monitor compliance with approved engineering designs and environmental standards. In addition, KP will provide sign-off on critical construction milestones to ensure that works are implemented according to technical and safety requirements.

The Karibib Town Council will be informed about the EMP and involved as appropriate. Additional roles for relevant authorities will be defined, as necessary.

3.4 TRAINING

DWN will provide Induction Training for all employees and contractors before construction begins, and for new personnel joining later. Training covers:

- EMP mitigation measures and on-site responsibilities.
- Environmental sensitivities of the project area.
- Occupational Health and Safety (H&S) rules (e.g., PPE, conduct, first aid).
- The Grievance Mechanism and workers' rights
- Handling public enquiries and grievances.
- Code of Conduct for interactions with nearby residents and managing unauthorised visitors.
- Procedures for unforeseen incidents or emergencies.
- Roles and responsibilities regarding environmental management.

DWN will keep training records and repeat sessions as needed. DWN and the contractor will prepare a detailed training plan including refresher courses.

4 PROJECT STANDARDS AND LEGAL FRAMEWORK

The development has undergone a scoping assessment to identify potential environmental and social (E&S) risks associated with the construction phase. To ensure responsible and sustainable project delivery, it will comply with a comprehensive set of national, local, and international standards, guidelines, and regulatory requirements, which apply throughout both the construction and operational phases.

Adherence to this framework ensures the project meets Namibia's legal obligations, aligns with recognised international good practice, supports sustainable development objectives, and minimises adverse impacts on the environment and local communities.

4.1 NATIONAL AND LOCAL LEGISLATION & PERMIT REQUIREMENTS

The development will comply with all relevant Namibian national legislation and local planning instruments, notably the Karibib Town Planning Scheme and Structure Plan. These frameworks govern a wide range of aspects, including environmental protection, infrastructure development, occupational health and safety, social safeguards, land use planning, and the conservation of heritage resources. Tables 2 to 5 summarise the key legislative provisions and their implications for the project.

Table 2: National and Environmental Legislation

THEME	LEGISLATION	PROVISION	PROJECT IMPLICATIONS
NATIONAL	Constitution of the Republic of Namibia (Amendment Act 34/1998)	Guarantees property rights (Art. 16(1)) and mandates sustainable ecosystem management (Art. 95(ii))	Supports land ownership and mandates environmental sustainability.
ENVIRONMENTAL	Environmental Management Act, 7 of 2007	Requires Environmental Impact Assessments (Sec 27); mandates public participation (Sec 2(b-c))	Obtain Environmental Clearance Certificate (ECC) and hold consultations.
	Environmental Impact Assessment Regulations GN 57/2007	Lists activities requiring environmental clearance including roads and pipelines (Sec 10(1))	ECC and consultation processes are compulsory.
	Environmental Management Act, 7 of 2007	Regulates noise, dust control, and land rehabilitation.	Construction must mitigate noise, dust, and restore land.
	Environmental Impact Assessment Regulations GN 57/2007	Requires ECC for activities including construction affecting watercourses, canals, and wetlands (Sec. 10(1)(a)(b))	Must assess and mitigate impacts on watercourses; obtain ECC before commencement of such activities.
	Water Act, 54 of 1956	Regulates abstraction, diversion, and use of water resources.	Obtain water use permits for abstraction, diversion, or discharge; comply with water protection measures.

Table 3: Infrastructure and Hazardous Substances

THEME	LEGISLATION	PROVISION	PROJECT IMPLICATIONS
INFRASTRUCTURE	EIA Regulations GN 57/2007	Covers pipelines and roads (Sec 10.1(a), 10.1(b))	ECC required for pipeline and road works.
HAZARDOUS SUBSTANCES	EIA Regulations GN 57/2007	Regulates hazardous materials handling and waste permits (Sec 9.1, 9.2)	Ensure safe storage, handling, and disposal of hazardous substances.

Table 4: Health, Safety, and Social Legislation

THEME	LEGISLATION	PROVISION	PROJECT IMPLICATIONS
HEALTH & SAFETY	Labour Act, 11 of 2007	Regulates worker rights and prohibits child/forced labour.	Comply with labour laws; promote fair employment.
	Public and Environmental Health Act, 2015	Covers health standards, waste management, and water quality.	Maintain health and safety compliance.
	Health and Safety Regulations, 2011	Requires workplace safety measures, PPE, and accident prevention.	Implement occupational health and safety measures.

Table 5: Other Relevant Frameworks

THEME	LEGISLATION	PROVISION	PROJECT IMPLICATIONS
FORESTRY	Forestry Act, 12 of 2001; Forest Regulations GN 170/2015	Protects trees; requires permits for removal.	Obtain permits before tree removal; implement safeguards.
SOIL CONSERVATION	Soil Conservation Act, 76 of 1969	Regulates erosion prevention and soil protection.	Apply erosion control measures.
WASTE MANAGEMENT	Waste Management and Pollution Control Act	Regulates disposal of solid and hazardous waste.	Comply with waste disposal and effluent discharge standards.
CHILD LABOUR	Labour Act, 11 of 2007; Child Care and Protection Act, 2015	Prohibits child labour; sets employment age limits.	Enforce zero tolerance on child labour.
WORKER RIGHTS	ILO Conventions (29, 87, 98, 100, 111)	Prohibits forced labour; guarantees union rights and equal pay.	Ensure fair and non-discriminatory working conditions.
ARCHAEOLOGY	National Heritage Act, 27 of 2004; Burial Place Ordinance	Protects heritage sites and graves.	Report findings; follow legal procedures for heritage sites.

4.2 INTERNATIONAL LENDER STANDARDS

The programme is funded by official development assistance from the Government of the Federal Republic of Germany through the Kreditanstalt für Wiederaufbau (KfW) Development Bank. As such, it must comply with international environmental and social standards required by KfW, which align with the World Bank's Environmental and Social Standards (ESS).

4.2.1 KfW's Sustainability Guideline

All financial cooperation measures financed by KfW are subject to assessment and implementation under the KfW Sustainability Guideline (2021), which sets out principles and procedures for evaluating environmental, social, and climate impacts. This guideline requires compliance with:

- Relevant national legislation and legal requirements;
- The ESS of the World Bank Group;
- World Bank's general and sector-specific Environmental, Health and Safety (EHS) Guidelines;
- ILO core labour standards;
- Human Rights Guidelines of the BMZ.

4.2.2 World Bank Environmental and Social Framework (ESF)

The ESF provides a comprehensive framework for managing environmental and social risks, enhancing transparency, accountability, and sustainable development outcomes through stakeholder engagement. While KfW requires only the ESS to be directly applied, the ESF underpins the broader approach to sustainable project delivery.

4.2.3 Bank Environmental and Social Standards (ESS)

The ESS consists of ten standards designed to:

- Support Borrowers in achieving good international practice for environmental and social sustainability;
- Help meet national and international environmental and social obligations;
- Enhance non-discrimination, transparency, participation, and accountability;
- Improve project sustainability through continuous stakeholder engagement.

A review will be conducted for each project intervention to confirm the relevance and applicability of each ESS based on specific site conditions, scope, and locality.

4.2.4 World Bank Environmental and Social Standards (2018)

The World Bank's ESS consists of ten standards as summarised below. Application of the standards intends to: (a) support Borrowers in achieving good international practice relating to environmental and social sustainability; (b) assist Borrowers in fulfilling their national and international environmental and social obligations; (c) enhance non-discrimination, transparency, participation, accountability, and governance; and (d) enhance the sustainable development outcomes of projects through ongoing stakeholder engagement.

KfW's Sustainability Guideline (2021) requires the application of the relevant ESS. The likely applicability of each standard to the DWN Programme is indicated. A review must be undertaken for each intervention to confirm (based on scope, locality, and site specifics) the applicability of the ESS.

5 STAKEHOLDER ENGAGEMENT AND GRIEVANCE MECHANISM

DWN, together with UDA and Karibib Town Council, led a comprehensive stakeholder engagement process as part of the Usab Township Establishment project.

Engagement activities included:

- Initial scoping discussions with Karibib Town Council departments (Planning, Engineering, CEO's Office) to define development priorities and technical requirements.
- Detailed design consultations with Knight Piésold Consulting (Pty) Ltd on engineering aspects, flood risk mitigation, and service infrastructure planning.
- Public consultation meetings facilitated by UDA and DWN before township layout approval and ECC application.
- Ongoing updates to the Ministry of Urban and Rural Development (MURD) on township layout submission and approval process.
- Submission and review processes with the MEFT for ECC approval.
- Regular technical consultations with Strydom & Associates Land Surveyors on cadastral surveys and layout confirmations.
- Coordination with conveyancers for legal registration of erven and township establishment.

A formal Grievance Mechanism has been established to ensure that community members, workers, and other interested parties can raise concerns or submit feedback throughout the project lifecycle. This mechanism includes:

- A designated contact person at DWN for receiving and logging grievances.
- Availability of grievance submission forms at the town council offices and the DWN project office.
- Clear communication to the public on how to submit complaints or suggestions.
- A standard response time of 20 working days to address grievances, with follow-up actions documented and shared with affected parties.
- Regular updates on resolved grievances to maintain transparency and build trust.

Stakeholder engagement and grievance resolution processes will continue throughout construction and into the operational phase, ensuring ongoing community participation and support.

6 REGISTER OF ENVIRONMENTAL AND SOCIAL ASPECTS (E&S ASPECTS)

This section presents the environmental and social aspects identified for the Usab Township Establishment project, as well as the associated management and mitigation measures to ensure compliance and minimise negative impacts throughout the project lifecycle.

The environmental and social aspects and mitigation measures presented in this section are informed by the findings of the Environmental Scoping Report for the Karibib Township Establishment Project (Urban Dynamics Africa, 2022). The Scoping Report provides detailed baseline information and impact assessments that guided the design of this EMP.

6.1 PLANNING AND DESIGN PHASE

During the planning and design phase, the following key environmental and social aspects were identified and addressed to avoid or minimise potential impacts:

- **Flood risk and stormwater management**, assessed by Knight Piésold to ensure infrastructure resilience and safety.
- **Cadastral and aerial surveys**, conducted by Strydom & Associates Land Surveyors, to optimise the township layout and avoid sensitive natural and community areas.
- **Legal compliance**, ensuring full alignment with national legislation and international lender standards, including the Namibian Environmental Management Act, KfW Sustainability Guideline, and World Bank Environmental and Social Standards (ESS).

- **Stakeholder feedback integration**, incorporating input from the Karibib Town Council, local communities, and technical authorities into final designs and service layouts.
- **Consideration of public open spaces and service corridors**, supporting long-term accessibility, service provision, and community development.

6.2 PROJECT IMPLEMENTATION — ESMP

During the construction and operational phases, the following key environmental and social risks and impacts have been identified. Specific mitigation and management measures have been established to address each aspect effectively and to ensure ongoing compliance with applicable standards:

- **Dust generation**, mitigated through surface wetting, speed control, and covering of stockpiles.
- **Noise and vibration**, managed by maintaining equipment, limiting working hours, and using appropriate personal protective equipment (PPE).
- **Solid and hazardous waste management**, addressed through proper collection, on-site storage, and disposal at approved facilities.
- **Water contamination risks**, reduced by establishing designated refuelling and maintenance areas, and implementing strict spill prevention measures.
- **Biodiversity disturbance**, controlled by restricting vegetation clearing to approved areas, enforcing no-go zones, and implementing re-vegetation where required.
- **Occupational health and safety**, safeguarded through comprehensive training, strict PPE enforcement, and availability of on-site first aid facilities.
- **Community health and safety**, ensured through clear signage, controlled site access, and proactive communication with local stakeholders.

These aspects and their corresponding mitigation measures are detailed further in the **Mitigation and Management Tables** included in section 7.

Detailed Code of Conduct, Grievance Mechanism, Health and Safety Plan, and Incident Reporting forms are provided in Annexes 2 to 3.

7 ESMP MONITORING

Monitoring is essential to ensure compliance with mitigation measures and continuous improvement. Contractors and DWN will conduct ongoing monitoring and report to the Karibib Town Council and funding partners

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
7.1 A. GENERAL REQUIREMENTS FOR ESHS MANAGEMENT				
<u>A1. Responsibilities and Liabilities</u>	Ensure that all workers, suppliers and possible subcontractors are familiar and comply with the ESHS requirements and specifications of this EMP.	Induction training performed and recorded. Contracts with subcontractors and suppliers	Contractor/DWN	Review of training records Review of Contracts to ensure that Project requirements are included
	Adjust this ESMP template to be project specific, define the frequency of the monitoring procedure and share it with DWN and KfW. Identify if further Management Plans are required and prepare these.	Final Project-specific ESMP Requisite Management Plans	Contractor/DWN	Review final ESMP and Management Plans prior to commencement of work 'No objection' from KfW for final ESMP
<u>A2. Resources allocated to ESHS Management</u>	Assign ESHS responsible staff ¹ and define the requirements and responsibilities. Define person(s) responsible for contact with stakeholders (Relations officer or Community Liaison officer)	Document assigned responsibilities. Inform the relevant authorities/stakeholders about the ESHS responsible staff.	Contractor/DWN	Review assignment of ESHS responsibilities. Records of notification to stakeholders

¹ Note: in many legislations an ESHS manager is required on sites employing 50 workers or more

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
7.1 A. GENERAL REQUIREMENTS FOR ESHS MANAGEMENT				
A3. Reporting	Reporting of progress and incidents, accidents, observations, near misses.	Final Project-specific ESMP (note monitoring and reporting requirements) Records of ESHS and incident reporting	Contractor/DWN	Review E&S Monitoring Checklist E&S audits
A4. Code of Conduct	Establish a Code of Conduct taking into consideration legislation, safety rules, substance abuse, environmental sensitivity, communicable diseases, gender issues (sexual harassment), respect for local beliefs and customs, community interactions etc.	Code of Conduct in place and rules shared with personnel (see Annex A)	Contractor/DWN	Review of Code of Conduct induction records Review of reported punishable or misconduct behaviour Review of grievance records
A5. ESHS Training	Provide induction, training, and awareness to the workforce regarding ESHS risks and mitigation measures (including indirect workers) tailored to Project scope.	Training performed and recorded	Contractor/ DWN	Review of ESHS induction and training records

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
7.2 B. PROTECTION OF THE ENVIRONMENT:				
B1. Protection of adjacent areas	Ensure to keep the buffer distances from sensitive urban services and buildings (school, water supply for populations (borehole)); any housing.	Marking the borders of works site boundaries in line with given limits and usage of warning signs	Contractor/DWN	Site inspection prior to commencement of activities.
	Ensure that work site boundaries and limits are in accordance with plans agreed upon in advance. All construction activities should be carried out within boundaries.	Marking the borders of works site boundaries and usage of warning signs	Contractor/DWN	Site inspection prior to commencement of activities.
	Ensure that means of protection are in place to avoid or minimise adverse effects on vegetation, soils, groundwater and surface water, biodiversity, natural drainage and the water quality in areas within the works area. Construction methods to minimise impacts to the extent possible.	No impacts identified in the adjacent environment	Contractor/DWN	Site assessment prior to site selection. Site inspection prior to commencement of activities. Regular monitoring of adjacent natural resources.
	Protect excavation works with cut off ditches to prevent water from entering excavations.	No water entering excavations	Contractor/DWN	Site inspection
	Minimise visual impacts by good house-keeping and erecting screens if required.	Visual inspection and comparison with adjacent undisturbed areas.	Contractor /DWN	Site inspection Review of grievance records
	After construction, form reshaped land so that it is inherently stable, adequately drained and suitable for the desired long-term land use and allows natural regeneration of vegetation.	Visual inspection and comparison with adjacent undisturbed areas.	Contractor /DWN	Site inspection at completion

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
7.2 B. PROTECTION OF THE ENVIRONMENT:				
B2. Selection of borrow areas, backfill material stockpile sites and access road	Select areas to be excavated, backfill material stockpile locations and access roads if applicable to the project.	Designated areas selected	Contractor /DWN	Once during site selection
	Locate stockpile areas in areas where trees can act as buffers to prevent dust pollution	Designated areas selected	Contractor /DWN	Once during site selection
	Deposit any excess material in areas approved by local authorities	Designated areas selected	Contractor /DWN	Once during site selection
	Locate disposal site on low value land.	Designated areas selected	Contractor /DWN	Once during site selection
B3. Pollution prevention	Ensure all works carried out minimise pollution risk (e.g. liquid effluents, air emissions, noise and vibration management, vehicle and equipment maintenance and selection, fuel, oil and chemical storage and handling) including the whole duration of the Project.	Ensure that potential pollutants are not stored and handled within 50 m of sensitive receptors (particularly boreholes).	Contractor /DWN	Regular site inspection Review of grievance records
B4. Effluents	Ensure appropriate containment and storage of construction wastewater, including sanitary water. No untreated effluent is discharged.	No untreated wastewater discharge	Contractor/DWN	Regular site inspection Review of grievance records
B5. Emissions and dust	Best practice to ensure minimisation of dust emissions (e.g. proper stockpiling, watering etc.) during dry and windy conditions and transportation.	Watering conducted, no dust emissions are observed, no workers' grievances	Contractor /DWN	Regular site inspection Review of grievance records

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
7.2 B. PROTECTION OF THE ENVIRONMENT:				
	Ensure speed limits on site and when passing local receptor areas. Sensitise drivers.	Speed signs installed Training performed and recorded Accident/incident reports	Contractor/DWN	Random site inspection Review of grievance records Review of accident/incident records Review of training records
B6. Noise	Avoid operations and vehicle movements at night.	No work conducted between 17:00 pm and 8:00 am	Contractor/ DWN	Random site inspection Review of grievance records Review of accident/incident records Review of training records
	Locate stationary equipment (such as power generators) as far as possible from nearby receptors (e.g. worker resting areas, populated areas and environmentally sensitive areas).	Distances between equipment and receptors are kept	Contractor/ DWN	Review of grievance records Monitor noise levels in case of complaints
B7. Waste Management	Identify waste management facilities and waste management contractors. Ensure disposal through waste contractors licensed for treatment/removal/recycling of each of the waste types.	Waste management through licensed contractors, if feasible Waste management contracts Waste transfer notes	Contractor/ DWN	Inspect waste management facilities Proof of contractors' certifications Review of waste transfer records
	Ensure that all wastes produced are properly collected, segregated, stored, transported and treated	Waste collection areas existent, waste inventories Waste transfer notes	Contractor/ DWN	Regular site inspection Review of waste inventories Review of waste transfer records

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
7.2 B. PROTECTION OF THE ENVIRONMENT:				
	Minimise the waste production to the extent possible.	Records of waste production are kept Waste Management Plan Training performed and recorded	Contractor/ DWN	Monitor (e.g. monthly) the amount of waste produced Review of training records
	Document all waste related operations (type of wastes, quantities produced etc.).	Storage, transport and treatment of waste is documented Waste transfer notes Waste inventories	Contractor/ DWN	Review of waste transfer records Review of waste inventories
	Appropriate and safe storage of fuels, construction materials, wastes and any materials that can cause spills (e.g. batteries from energy generators).	Safe storage of materials Spill response procedure Spill response and remediation equipment in place.	Contractor/ DWN	Regular site inspection
B8. Vegetation clearing	Limit vegetation clearing to areas within the site boundary where it is strictly necessary.	Vegetation clearing minimal Marking the borders of works site boundaries	Contractor/ DWN	Site inspection prior to commencement of activities.
	Ensure that no chemicals/pesticides are used, burning of vegetation is restricted etc. Do not clear vegetation more than two months in advance of operations	No use of fires or chemicals on site Marking the borders of works site boundaries Usage of warning signs	Contractor/ DWN	Site inspection prior to commencement of activities. Site inspection during site clearance

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
7.2 B. PROTECTION OF THE ENVIRONMENT:				
	A tree survey should be conducted to identify protected tree species on the site. Avoid clearing mature trees and endangered species.	No mature trees cleared Option permits to remove protected trees	Contractor/ DWN	Site inspection prior to commencement of activities. Site inspection during site clearance
B9. Site rehabilitation	Ensure revegetation and restoration of cleared areas where possible after construction using native species.	Revegetation completed	Contractor/ DWN	Site inspection at completion
	Ensure that rehabilitated areas don't pose health and safety risks (such as holes, ponds).	Reinstatement completed	Contractor/ DWN	Site inspection at completion Inspection after heavy rainfalls
	Reinstatement of construction working area to the best possible after construction activities are completed.	Reinstatement completed	Contractor/ DWN	Site inspection at completion Inspection after heavy rainfalls
	Rehabilitate borrow areas, backfill material stockpile sites and access roads, where applicable.	Rehabilitation completed	Contractor/ DWN	Site inspection at completion
B10. Budget allocation	Budget allocation for phased flood mitigation implementation and detailed design	Budget plans and approval documents	Karibib Town Council	Budget review and expenditure tracking
B11. Removal of sand deposit	Remove sand deposits obstructing culverts before rainy season	Site clearance reports; photographic evidence	Karibib Town Council / Contractor	Pre-rainy season inspection reports
B12. Maintaining culverts	Clean and inspect all culverts east of Omaruru road; initiate hydraulic assessment if needed	Inspection and maintenance logs; hydraulic study if done	Karibib Town Council	Inspection checklist and contractor reports

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
7.2 B. PROTECTION OF THE ENVIRONMENT:				
B13. 1-in 5 year flood mitigating	Implement full 1-in-50-year flood mitigation design	Engineering designs, construction plans	DWN / Contractor / Knight Piésold	Engineering sign-off; site progress reports
B14. Flood prone erven	Allocate flood-prone erven only after mitigation measures are in place	Updated township allocation register	Karibib Town Council / DWN	Review of allocation records against flood line compliance

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
7.3 C. HEALTH AND SAFETY				
C1. Health and Safety Plan	Develop a Health and Safety Plan to provide for a safe and healthy work environment, taking into account the ESHS impacts and risks level of the works.	H&S Plan in place	Contractor/ DWN	Review of H&S Plan
C2. Accident reporting	Ensure all H&S related incidents (e.g. observations, accidents) on site are recorded and followed up properly. (See Annex 4 – Incident Reporting)	Incident recording process in place	Contractor/ DWN	Check incident/accident records
C3. Personal protective equipment	Ensure the provision of Personal Protective Equipment (PPE) for workers (hardhats, masks, safety glasses, safety boots etc).	PPE used by everyone on-site Training performed and recorded	Contractor/Site Manager	Random site inspection Review training records
C4. Emergency scenarios prevention	Ensure immediate cleaning of any spills and remediation of contaminated areas after construction.	Workers trained Emergency Response Team (ERT) is in place	Contractor/ DWN	Random site inspection after spill events One-time inspection after construction Review of training records Review of ERT
	Provide necessary prevention equipment and teams on site in line with applicable regulations to respond to emergency scenarios e.g. fire, explosion, floods, natural hazards etc.	Prevention equipment and team is in place Training performed and recorded	Contractor/ DWN	Regular site inspection Review list of equipment Review of ERT Review of training records

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
7.3 C. HEALTH AND SAFETY				
	Maintain high standard in housekeeping on site. Construction materials and equipment should be stored properly.	Visual verification of good housekeeping on-site	Contractor/ DWN	Random site inspection
C5. First-aid	Ensure minimum first aid provisions on site (suitably stocked first-aid kits; a person, respectively an adequate number of first-aid helpers and ensure that staff and workers are informed about first-aid arrangements)	Suitable first aid kits on site Ensure the presence of first aid helpers in all shifts First aid certificates	Contractor/ DWN	Regular monitoring of first aid kits Review of first aider certificates Review of number of first aiders required by local legislation
C6. Access to health care	Ensure the workforce has access to primary healthcare on site, providing prescriptions.	Healthcare available on site Medical surveillance records	Contractor/ DWN	Random site inspection Review of grievance records Review of medical records (in case not confidential)
	In case more than 35 workers are present on site, ensure that a hospital, medical clinic or a health centre can be reached within a period of 45 minutes.	Medical centres in the proximity of the site.	Contractor/ DWN	Medical centres in the proximity of the site identified once prior the commencement of works
C7. Hygiene, accommodation and food	Ensure provision of Health and Safety (H&S) and hygienic and sanitary facilities at the site, including shaded welfare areas, bathrooms, changing rooms and potable water. Ensure toilets and changing rooms are separated between male and female employees.	Appropriate H&S and sanitary facilities provided at site	Contractor/ DWN	Campsite inspection prior to accommodation of the workers. Regular inspection Review of grievance records

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
7.3 C. HEALTH AND SAFETY				
	Ensure the provision of adequate space, supply of water, adequate sewage and garbage disposal system, appropriate protection against heat, cold, damp, fire and disease-carrying animals, adequate sanitary and washing facilities, adequate lighting, and basic medical services, in accordance with all applicable health and safety regulations and norms.	Appropriate conditions for workers on site	Contractor/ DWN	Campsite inspection prior to accommodation of the workers. Regular inspection Review of grievance records
	Report any occurrence of any communicable diseases amongst the workforce (STD, HIV/AIDS, TB, malaria and Hepatitis B and C). Sensitise workers.	Communicable Diseases Register Training performed and recorded	Contractor/ DWN	Review of diseases register and disease prevention programme if available. Review of training records

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
7.4 D. LABOUR AND RELATIONS WITH LOCAL COMMUNITIES				
D1. Labour conditions	Ensure minimum legal labour standards as per ILO regulations (child/forced labour, sexual assault, no discrimination, equal opportunities, working hours, minimum wages) are met.	Grievance Mechanism Records, Training performed and recorded	Contractor/ DWN	Review of Inspection reports, Review of grievance records Review of training records
	Ensure that all direct and indirect workers have access to and are aware about the Grievance Mechanism were they can raise workplace relevant complaints anonymously. (See Annex 2 – Grievance Mechanism)	Grievance Mechanism in place and grievances recorded Training performed and recorded	Contractor/ DWN	Review of grievance register Review of training records
	Ensure all workers have the same rights and are treated equally.	Non-discrimination policy in place	Contractor/ DWN	Random site inspection Review of grievance register
D2. Local recruitment	Ensure local communities are preferred for the supply of goods and services to the Project and Project personnel, where appropriate.	Local Procurement and Employment Records	Contractor/ DWN	Review procurement and employment rules and records Review of grievance register

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
7.4 D. LABOUR AND RELATIONS WITH LOCAL COMMUNITIES				
D3. Community interaction	Engage/ communicate/inform communities. Ensure consultations with the local authorities and communities regarding the construction. Obtain local knowledge regarding chance finds and land acquisition matters.	Minutes of Meetings Grievance Mechanism	Contractor/ DWN	Review of grievance register Minutes of consultation meetings
	Initiate an efficient Grievance Mechanism to allow potentially affected individuals to raise their concerns	Grievance Mechanism in place (See Annexe 2). Grievances recorded	Contractor/ DWN	Review of grievance register
D4. Damage to people and property	Ensure all contractors implement Codes of Conduct concerning employment and workforce behaviour (including but not limited to safety rules, zero tolerance for substance abuse, environmental sensitivity of the area, dangers of sexually transmissible diseases and HIV/AIDS, gender equality and sexual harassment, respect for the beliefs and customs of the populations and community relations in general).	Code of Conduct (See Annexe 1). Grievance Mechanism records	Contractor/ DWN	Worker interviews, Review of grievance register

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
7.4 D. LABOUR AND RELATIONS WITH LOCAL COMMUNITIES				
	Ensure that site areas are provided with appropriate security, fencing, signage and lighting. Use hazard notices/signs/barriers to protect children and other vulnerable people from harm and prevent access to non-workers.	H&S planning of construction site done, items installed	Contractor/ DWN	Inspection prior to the activities. Regular site inspection Review of grievance register
D5. Traffic management	Ensure safe driving by Project personnel (e.g. through training or induction).	Driver Training Records as part of Induction training	Contractor/ DWN	Review of training records Review of grievance register
	Target signage and outreach activities to improve public awareness of traffic changes and potential hazards for high-risk sections of public roads, including near the site and lay down areas.	Warning signs Minutes of Meetings	Contractor/ DWN	Inspection if traffic routes, Review of grievance register
D6 Fossils/ Archaeological Chance Finds	Establish specific procedures to manage the protection of archaeological and historical sites, chance finds, and fossils. Ensure all finds of cultural heritage (e.g. graves, old ceramic, old building fragments) are reported immediately to the relevant authority and avoid excavation in the ultimate neighbourhood of a chance find, fence the chance find and await instructions from the competent authority.	Chance Finds Procedure Notification records to relevant authority Training records, Records about chance finds	Contractor/ DWN	Site inspection Review records of chance finds

8 CONCLUSION:

The EMP for the Usab Township Establishment project in Karibib serves as a comprehensive framework to ensure that environmental and social risks are effectively managed throughout the project lifecycle.

Through careful planning and design, guided by flood risk assessments, cadastral surveys, and extensive stakeholder input, the project has proactively integrated sustainability considerations from the outset.

During the construction and operational phases, the EMP provides clear and practical mitigation measures addressing key risks such as dust, noise, waste, biodiversity disturbance, and health and safety concerns. These measures are designed to comply with national legislation and international best practice, including the Namibian Environmental Management Act, KfW Sustainability Guideline, and World Bank Environmental and Social Standards (ESS).

Continuous monitoring and transparent stakeholder engagement, supported by an established grievance mechanism, further strengthen the project's commitment to responsible development and community wellbeing.

Overall, the EMP aims to facilitate the successful implementation of the township project while safeguarding environmental resources and enhancing socio-economic benefits for the Karibib community.