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Bugesera Airport Company Limited

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Project Number
1700000222-001

NEW BUGESERA INTERNATIONAL AIRPORT
DEVELOPER CONSTRUCTION ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

RAMBOLL

NEW BUGESERA INTERNATIONAL AIRPORT DEVELOPER CONSTRUCTION ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

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GLOSSARY OF ACRONYMS AND TERMS

Abbreviation	Meaning
AfDB	African Development Bank
AOI	Area of Influence
ARFF	Aircraft Rescue and Firefighting
ATC	Air Traffic Control
BAC	The Bugesera Airport Company ("the Developer")
BAP	Biodiversity Action Plan
BMP	Biodiversity Management Plan
CCTV	closed-circuit television
C-ESMP	Construction Environmental and Social Management Plan
CHSSMP	Community Health, Safety and Security Management Plan
CIP	Contractor Construction Implementation Plan
CLO	Community Liaison Officer
CV	Curriculum Vitae
dB	Decibels
Developer C-ESMP	Developer Construction Environmental and Social Management Plan
Developer ESMS	Developer Environmental and Social Management System
Developer O-ESMP	Developer Overarching Operation Phase Environmental and Social Management Plan
EHS Guidelines	Environmental, Health, and Safety Guidelines
EHRA	Environmental Health Risk Assessment
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
E&S	environmental and social
FAA	Federal Aviation Authority
GHGs	greenhouse gases
GIIP	Good International Industry Practice
GOR	Government of Rwanda
GSE	Ground Service Equipment
ha	hectares
HR	Human Resources
HSE	Health, Safety and Environment
H&S	Health and Safety
IATA	International Air Transport Association
IBA	Important Bird Area
ICAO	International Civil Aviation Organisation
ID	Identification Number

Abbreviation	Meaning
IDF	Intensity-Duration-Frequency
IESC	Independent Environmental and Social Consultant
IFC	International Finance Corporation
ILO	International Labour Organisation
INMR	Institute of National Museums of Rwanda
ISO	International Standards Organisation
IUCN	International Union for Conservation of Nature
KGL	Kigali International Airport
Km	kilometres
Km/hr	Kilometres per hour
KPI	Key Performance Indicator
kV	Kilo-volt
LAeq	Equivalent Continuous Level
LWC&E MP	Labour, Working Conditions and Employment Management Plan
m	metres
MEECARW	Mota-Engil Engenharia e Construção Africa – Rwanda ("the Contractor")
MININFRA	Ministry of Infrastructure
mm	millimetres
MW	Mega-watts
N/A	Not applicable
NBIA	New Bugesera International Airport
OHSAS	Occupational Health and Safety Assessment Series
O-ESMP	Operation Phase Environmental and Social Management Plan
OHS	Occupational Health and Safety
OHTL	overhead transmission lines
OIP	Contractor Operation Implementation Plan
PPE	Personal Protective Equipment
PM	Particulate Matter
PS	Performance Standard
RDB	Rwanda Development Board
REG	Rwanda Energy Group
SEZ	Special Economic Zone
SHEQ	Safety Health Environment and Quality
STI	Sexually Transmitted Infection
UK	United Kingdom
UPS	uninterrupted power supply
VIPs	very important persons
WASAC	Water and Sanitation Corporation

Abbreviation	Meaning
WHO	World Health Organisation
WGM	Workers Grievance Mechanism
WRAP	Western Regional Air Partnership's
$\mu g/m^3$	Micrograms per Cubic Meter of Air

1. INTRODUCTION

1.1 Key Entities

The Bugesera Airport Company Limited (BAC) is a joint venture between Mota-Engil Engenharia e Construcão (MEEC) (75%) and the Government of Rwanda (GOR) (25%). BAC intends to develop a new international airport within the Bugesera District, in the Eastern Province of Rwanda, referred to as New Bugesera International Airport (NBIA or the 'Project'). For the purposes of this document, BAC is referred to as "the Developer" throughout.

Mota-Engil Engenharia e Construção Africa - Rwanda (MEECARW) has been appointed by the Developer as the Engineering, Procurement, and Construction (EPC) Contractor for the Project. For the purposes of this document, MEECARW and its sub-contractors are referred to as "the Contractor" throughout.

1.2 Purpose of this Document

This document is the Developer C-ESMP, a key component of the Developer Environmental and Social Management System (Developer ESMS), which serves to promote compliance with International Standards Organisation (ISO) 14001 requirements. The Project will be financed by the Developer and International Lenders comprising organisations that comply with international financial institution standards. These include the International Finance Corporation (IFC) Performance Standards, the Equator Principles and the standards of specific banks, such as the African Development Bank Integrated Safeguards System.

An Environmental and Social Impact Assessment (ESIA) was undertaken to assess potential impacts from the development and to set out management and mitigation measures to demonstrate that the Project complies with the relevant Project Standards that are to be adopted. The ESIA was prepared on behalf of r the Developer by Ramboll. The ESIA has been submitted to the International Lenders as well as the Rwanda Development Board (RDB) for consideration and approval.

The purpose of this Developer C-ESMP is to provide a consolidated summary of the Project's environmental and social (E&S) commitments relevant to the construction phase and an overview of the Developer ESMS that is being implemented, to ensure the systematic and effective execution of these commitments. This document also provides a summary of the relative responsibilities of the Developer and the Contractor during the construction phase. It therefore provides assurance that E&S mitigation, management and monitoring measures in the ESIA are accounted for and are being implemented during construction.

1.3 Scope

The scope of this document covers the activities being undertaken during the construction phase (design, construction and commissioning), and demonstrates how design-based risk assessment and ESIA mitigation, management and monitoring measures are being considered and implemented during the construction phase. A separate Operations Environmental and Social Management Plan (O-ESMP) addressing activities in the operation phase of the Project will be developed at a later stage, to mirror the approach set out in this document.

The management and monitoring controls set out in the appended C-ESMPs are directly applicable to all Project personnel of the Developer and Contractor (full-time, part-time, temporary and seconded staff, etc.). The Contractor (which includes its sub-contractors) is required to develop and implement management plans that align with this Developer's C-ESMP. These plans are referred to as the Contractor Construction Implementation Plans (the Contractor CIPs) throughout this document.

This C-ESMP is intended to address all aspects of "sustainability", as addressed in the IFC Performance Standards. As such, it encompasses consideration of environment, social, occupational health and safety, and labour and working conditions. For the sake of simplicity, the acronym E&S (for environmental and social) is used throughout this document, but this acronym should be interpreted as including community relations, community health safety and security, labour and working conditions and other IFC sustainability aspects.

1.4 Structure and Objectives

This Developer C-ESMP comprises up-front sections 1-6 with a suite of nine appended topic-specific management plans (the C-ESMPs) within one document. The appended C-ESMPs must be read in conjunction with the up-front sections of this Developer C-ESMP.

The Developer C-ESMP comprises:

- **Section 1:** Introduction – Outlines the document purpose, scope, structure and objectives.
- **Section 2:** Responsibilities - Outlines the overarching responsibilities of the Developer and Contractor for implementation of the C-ESMP management and monitoring controls; and
- **Section 3:** Project Description – Provides a summary of the key Project construction activities as per the ESIA.
- **Section 4:** Project Standards - Outline the legal framework for the Project Standards adopted to govern E&S management;
- **Section 5:** Describes the key environmental and social aspects and impacts associated with the Project; and
- **Section 6:** Developer ESMS Overview – Indicates the wider context of the Developer C-ESMP by providing an overview of the Developer ESMS, within which the Developer C-ESMP is a key component.
- **Appendices:** A suite of nine topic-specific management plans (the Developer C-ESMPs), containing management and monitoring controls that build upon the management, mitigation and monitoring measures set out in the Project ESIA and sign-post to the Contractor CIPs.

The individual appended topic-specific C-ESMPs are as follows:

- Biodiversity Management Plan;
- Community Health, Safety and Security Management Plan;
- Cultural Heritage Management Plan;
- Labour and Working Conditions Management Plan;
- Soil Management Plan;
- Stormwater Management Plan;
- Traffic Management Plan;
- Waste Management Plan; and
- Pollution Prevention Management Plan.

A separate Biodiversity Action Plan is also being developed as a key component of the Developer ESMS to cover the management of critical habitats and proposed offsets.

1.5 Document Control

The Developer C-ESMP is a "live" document and will continue to develop and evolve throughout the construction phase. This document will be reviewed regularly by the Developer to ensure the approach to E&S management remains fit-for-purpose and continues to align with relevant Good International Industry Practice (GIIP).

Updates of this document may also occur due to significant management of change (see section 6.10 below) or in the event of new E&S management and monitoring controls being generated from other key Project sources e.g. permits. Updates of the Developer C-ESMP will be shared with the Contractor to ensure the Contractor CIPs remain aligned.

2. OVERVIEW OF ROLES AND RESPONSIBILITIES

2.1 Overarching Responsibilities

The overarching responsibilities for the implementation of the C-ESMPs are defined below for the Developer and the Contractor as the key Project entities. The appended topic-specific C-ESMPs further specify who is responsible for the implementation of individual management and monitoring controls (see relevant tables provided within each management plan).

2.1.1 Developer

The Developer has ultimate responsibility for overall Project delivery and E&S governance. This includes assurance that the Contractor aligns with the Developer ESMS and this Developer C-ESMP. This includes undertaking formal and informal audits/checks of the Contractor's activities and performance as part of the ESMS to evaluate E&S performance throughout construction (see section 6.11 for a summary on performance evaluation).

The Developer is the primary custodian of stakeholder engagement for the Project through the appointment of a Community Liaison Officer (see section 6.5 for a summary of roles and responsibilities with regard to stakeholder engagement as part of the ESMS).

The Developer will engage with the operators of the Associated Facilities[1], the Water and Sanitation Corporation (WASAC) and Rwanda Energy Group (REG) who will respectively provide the permanent supply of water and electricity to the airport during the operation phase. Discussed further in sections 3.2 and 3.4.2).

2.1.2 Contractor

The Contractor (comprising the EPC Contractor and its sub-contractors) has overall responsibility for the construction of the entire Project and implementing applicable E&S management and monitoring controls, as per this C-ESMP and its own CIPs.

The Contractor is responsible for the management of worker grievances and will provide field support as necessary to the Developer Community Liaison Officer with regard to stakeholder engagement activities.

The Contractor is primarily responsible for the implementation of monitoring controls, including sampling of environmental media. Responsible party designation is included in the appended C-ESMP monitoring control tables.

2.2 Overarching Roles

Figure 2-1 illustrates the structure of the E&S management roles, for the implementation of the C-ESMPs, and how they interface with one another. Further detail on the Contractor HSE management roles is provided in the Contractor CIPs.

- Developer Director responsible for HSE.
- Developer Community Liaison Officer – reports to the Developer Director responsible for HSE.
- Developer Manager responsible for HSE - reports to the Developer Director responsible for HSE, interfaces with the Contractor Manager responsible for HSE, communicates and interacts with government bodies.
- Contractor Manager responsible for HSE – reports to and interfaces with Developer Manager responsible for HSE, communicates and interacts with government bodies, security teams, field

[1] As per the IFC PS1, Associated Facilities are facilities that are not funded as part of the project and that would not have been constructed or expanded if the project did not exist and without which the project would not be viable.

engineers, field supervisors, contract administrators, commercial service providers, human relations managers and relevant industrial entities.

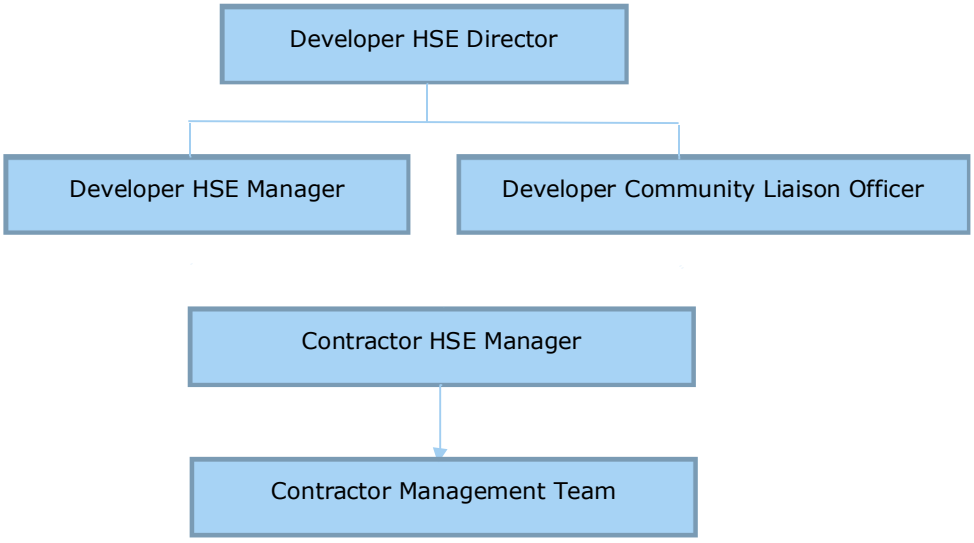

Figure 2-1: Organisation Chart for C-ESMP Implementation

3. PROJECT DESCRIPTION

3.1 Introduction

The NBIA Project will involve the construction of a new airport approximately 23 km to the southeast of Kigali City. When completed, it will be Rwanda's third and largest international airport and the country's eighth airport overall. It will serve commercial flights destined to and from the greater Kigali metropolitan area and the wider country. It will replace the existing civilian passenger capacity at Kigali International Airport (KGL), which will remain operational for military purposes.

3.2 Project Area

The Project is to be situated within the Rilima and Juru Sectors of the Bugesera District in the Eastern Province of Rwanda, as shown in Figure 3-1 and Figure 3-2. These main sectors are comprised of a number of cells, which in turn contain numerous villages. The airport will be approximately 23 km southeast of Kigali City, along the Kicukiro-Nyamata-Nemba KK-15 Road, which connects Rwanda to Burundi.

The Project will be delivered in five phases; the first of which is due to be finalised by 2020 to allow the airport to become operational. It includes the development, construction and operation of the following structures and infrastructure:

- Airport and associated structures and infrastructure;
- Temporary 5 km Water Pipeline for the construction phase;
- Upgrades to the road linking an existing quarry northeast of the Project to the Airport Area for the supply of aggregates during construction; and
- 14.5 km Expressway to link the airport to the national KK-15 Road also referred to as the NR5.

The final phase is due to be completed in 2045. The Project will be financed by the Developer as well as International Lenders.

As stated in section 2.2.1, there will also be Associated Facilities, which include the infrastructure for the permanent supply of power and water during the operation phase. The construction of these utilities and infrastructure will be the responsibility of the Rwanda Energy Group (REG) and The Rwanda Water and Sanitation Corporation (WASAC) respectively. Separate environmental and social impact assessments will need to be undertaken in accordance with the relevant legislative and regulatory standards.

3.3 Defined Terms Used to Describe the Project

The following defined terms are used to describe the Project. Figure 3-2 provides an illustration of these areas.

- **Project Area:** The Project Area contains all structures and infrastructure associated with the Airport Area, Construction Camp, Expressway, upgraded quarry road and temporary Water Pipeline during the construction phase.
- **Airport Area and Airport Footprint:** The Airport Area, within the Project Area, will cover approximately 2,500 ha and the actual Airport Footprint will be approximately 360 ha within this. This Airport Footprint will comprise the runway, taxiways, aprons, helipads, terminals (presidential, passengers and general aviation), airplane hangars, cargo area, vehicle parking areas, ground service equipment, airport maintenance areas, rescue and firefighting services, control tower, fuel farm, wastewater treatment and waste management facilities.

  Inhabitants and landowners within the Airport Area were resettled from 2010 onwards and they have been compensated and/or relocated/resettled offsite. This area is owned by the GOR and is currently being leased by BAC for an initial period of 99 years.

- **Construction Camp:** A Construction camp has been constructed within the Airport Area to the south of the Airport Footprint and comprises site offices, laboratories, changing rooms, first aid station, vehicle parking and maintenance sheds, fuel tank area and water treatment plant. Prior to a waste treatment plant being constructed, septic tank systems are being utilised across the camp area. The Construction Camp covers an area of approximately 9 ha. No worker accommodation is or will be provided for employees or contractors at the Construction Camp or within the Airport Area. A small number of foreign nationals are being housed temporarily offsite in a lodge complex (Gashora Lodge).
- **Expressway:** A new Expressway will be constructed to access NBIA. This route will be approximately 14.5 km in length from the north-western section of the Airport Area and link to the existing KK-15 Road providing direct access to Kigali. The Expressway will comprise a dual lane bitumen surfaced thoroughfare with a width of approximately 9 m that will be paved (one line in each direction – 3 m; paved shoulders 1.5 m each). The overall road reserve will be 44 m, although this will not be hard surfaced.
- **Water Pipeline:** During the construction phase, a Water Pipeline approximately 5 km in length will be laid underground along the edge of a local road located to the southeast of the Airport Area and will provide water from Lake Kidogo to the Project via a treatment plant at the Construction Camp.
- **Quarry Road:** The Project will make use of an existing quarry located approximately 10 km northeast of the Airport Area. An 18 km unpaved road is currently being used by heavy vehicles that pass through Kabukuba Village. An existing alternative route, also in use, has been earmarked to be widened and graded for use. This upgraded quarry road will bypass the centre of Kabukuba Village and reduce the overall length of the route to 10 km. The unsurfaced road will need to be widened at some areas and will be the responsibility of the Developer to maintain. The route will remain unsurfaced.

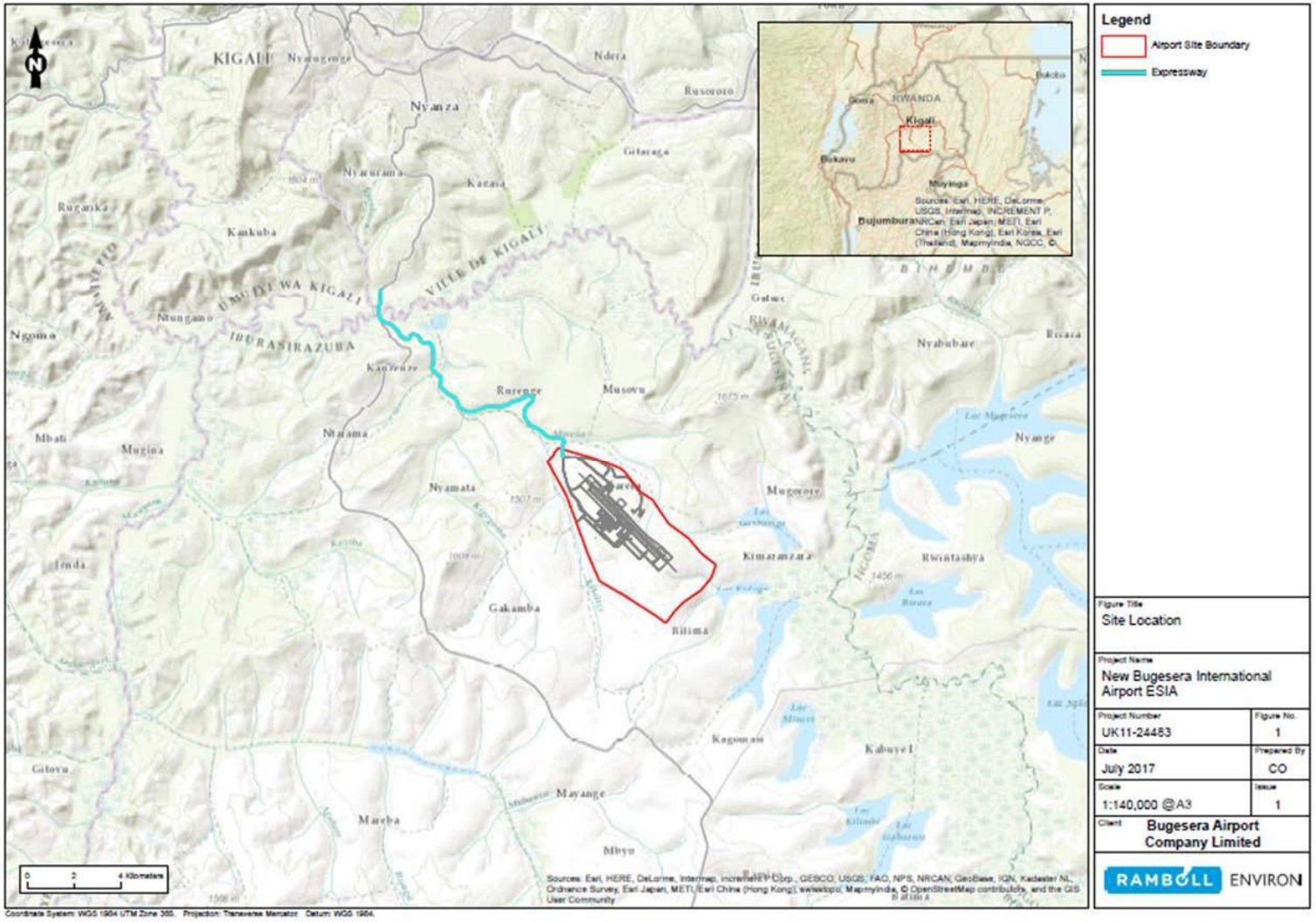

Figure 3-1: Location of the Project

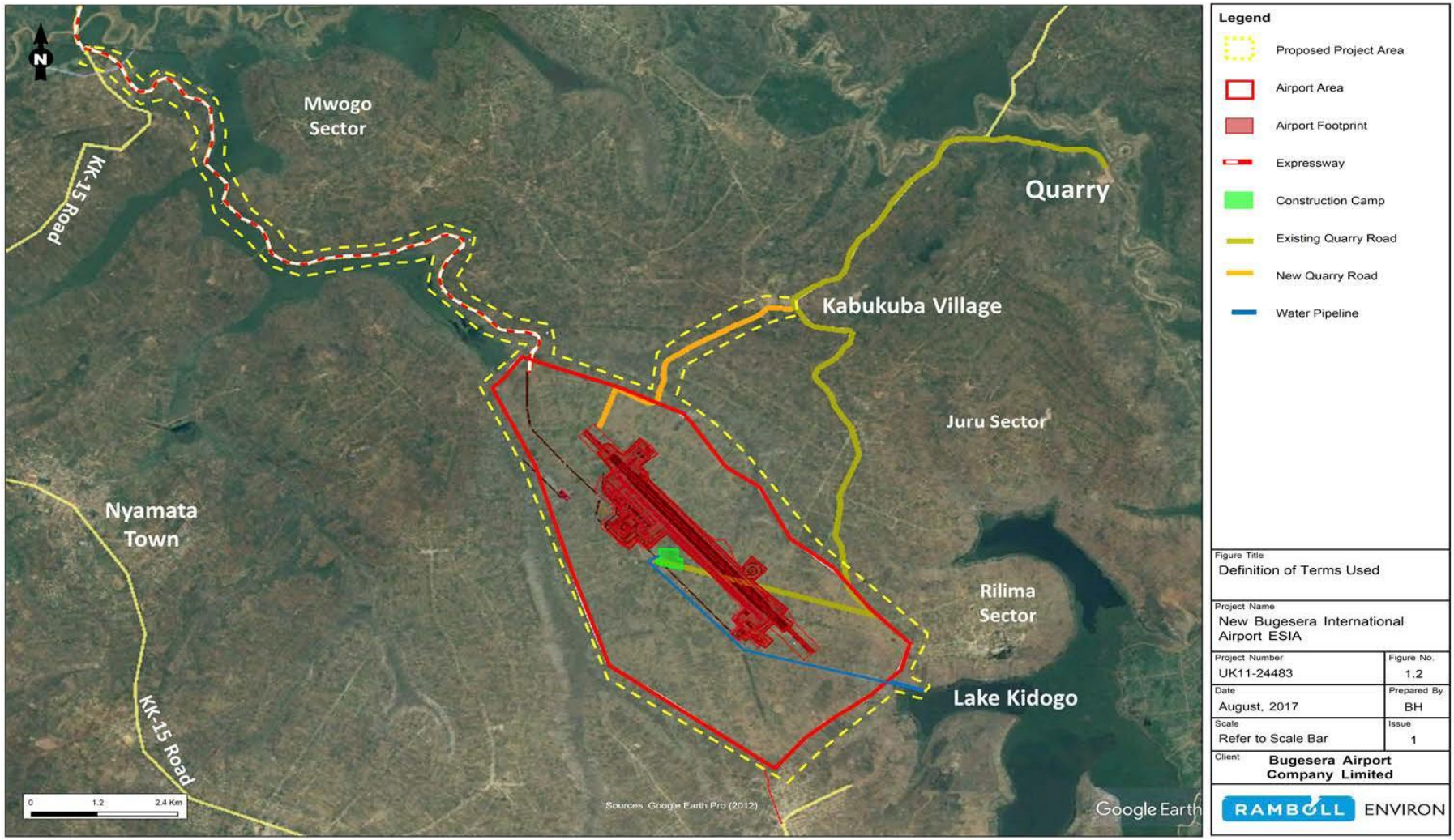

Figure 3-2: Defined Terms Used to Describe the Project (Source: Google Earth Pro, 2012)

3.4 Key Project Elements

The airport configuration has been driven by market demand and international standards (International Civil Aviation Organisation (ICAO), International Air Transport Association (IATA) and the Federal Aviation Authority (FAA)). The vision for the technical development is focused on a single roof concept, space optimisation, extension options, functionality and efficient operations, above average commercial space and optimised capital expenditure.

The airside configuration will initially consist of a single runway with space for an additional runway in the future. One parallel taxiway will be constructed in order to improve the runway capacity and airside operations.

In summary, the Project will include, the following key elements:

- A Runway (3,750 m in length by 45 m in width) and one parallel taxiway to improve runway capacity and the airside operations;
- A Passenger Terminal (29,900 m^2) will comprise check-in counters, security check points, gates, passenger boarding bridges, immigration and emigration counters, and retail and commercial areas;
- Ancillary facilities will include:
  - General Aviation Terminal;
  - Presidential Terminal;
  - Cargo area;
  - Air Traffic Control (ATC) tower;
  - Aircraft Rescue and Firefighting (ARFF) building;
  - Ground Service Equipment (GSE) maintenance building;
  - Catering area;
  - Police and anti-terror building;
  - Aircraft maintenance hangar;
  - Administrative area;
  - Access security;
  - Power distribution;
  - Waste management area;
  - Wastewater treatment facility;
  - Fuel farm; and
  - Car parking.
- A Water Pipeline of approximately 5 km will be installed from Lake Kidogo to a water treatment plant within the Airport Area to provide water for the construction phase; and
- A 14.5 km Expressway to link the airport to the national KK-15 Road joining at the existing Nyabarongo Bridge.

Associated Facilities will include the infrastructure for the permanent supply of power and water during the operation phase of the Project.

3.4.1 Project Facilities

Runway

The Runway will be 3.5 km long and its alignment has been based on the prevailing wind conditions, regional airspace, local obstacles and site geometry. Taking this into consideration, the runway was

designed to run in a northwest/southeast direction. Taxiway layouts have been developed to support proposed runway operations and optimise efficiency, minimising taxi times and delays.

Passenger Terminal

The Passenger Terminal will be the main terminal for the airport and will comprise 22 check-in counters, 6 security check points, 10 gates, 6 passenger boarding bridges, 10 immigration counters for arrival and 10 emigration counters for departure. There will be space in this terminal for retail and commercial activities.

General Aviation Terminal

The General Aviation Terminal will be a one level building with elevated sections for administrative offices and technical rooms.

Presidential Terminal

The Presidential Terminal will be in a separate location to the Passenger Terminal and General Aviation Terminal to assure a high level of security with separate access and additional security checkpoints. The building will provide a diplomatic reception area, conference and lounge areas for very important persons (VIPs), a press conference area and security and catering facilities.

Airport Support Facility Requirements

Support areas will be required to accommodate a wide range of facilities. These include aircraft maintenance, rescue and firefighting services, and catering facilities.

Cargo

The cargo facility will include a terminal, which will include customs, import and export, manipulation areas, and storage.

Air Traffic Control Tower

The Air Traffic Control Tower will comprise the tower itself, work stations for the controllers and the radar, electrical equipment room, uninterrupted power supply (UPS) room, break rooms and a kitchen.

Rescue and Firefighting Services

The Rescue and Firefighting Services facilities will include a fire station, including offices, garages and other functional areas, along with a service bay, training area and additional water supply.

Ground Service Equipment

The Ground Service Equipment will include space for servicing and repair of all vehicles and equipment used for the servicing of aircraft.

Flight and Employee Catering

During the operation phase. The catering facilities will consist of a facility where meals are prepared for inflight use. The facility will be able to handle up to 1 million meals per year. The building will include a kitchen and refrigeration, storage and wash areas. An employee canteen will be integrated in the ground floor of the building.

Police and Anti-Terror Buildings

There will be a police station, administration areas, detention cells, dog kennels and a medical station. The anti-terror building facility will include an operation centre, closed-circuit television (CCTV) control room and an accommodation area.

Maintenance Repair and Overhaul

A maintenance repair and overhaul facility will be constructed to service aircraft and include a hangar, apron area and offices.

Office Park

An office park will comprise the airport administration building, additional office buildings and a hotel.

Fuel Farm and System

The fuel farm will include storage tanks, truck and airside manoeuvring areas, and an airside fuelling station. No underground storage tanks will be installed and only jet fuel will be stored. It is estimated that four tanks will be installed in various phases during the Project, with two to be installed by 2020, a further tank by 2030 and a fourth tank by 2040. The apron has been designed with a standard hydrant fuelling system.

Security Fencing

There will be security fencing around the Airport Footprint, with a patrol road, security lighting and a video surveillance system.

Drainage

The drainage system will comprise a network of drainage trenches covering the entire Airport Footprint. Surface water from the apron areas will be treated through oil/water separators. The discharge will then pass through two passages and join the drainage channel located in the valley to the southwest of the Airport Area. Both passages will pass the Expressway via rectangular tunnels. There will also be two retention basins designed to manage the stormwater runoff and prevent erosion of the surrounding areas.

Wastewater and Waste Management

A permanent wastewater treatment plant and a central waste collection and management area will be constructed on the site in the operation phase.

Lighting

The airfield ground lighting for the runway, taxiway and apron have been designed following ICAO requirements. The lighting for the taxiways will include centreline lights, stop bar lights, runway guard lights and retroreflective markers. The lighting for the apron will comprise edge markers and floodlighting.

Bird Control System

Measures will be installed to manage wildlife hazards such as bird strikes during the operation phase. These may include devices that beep to scare birds, netting or draining of streams, grass management, removing waste disposal sites and limiting other attractions to birds.

Obstacle Limitation Surfaces

A zone will be implemented to define airspace around the Project to be maintained free of obstacles to permit safe airport operations. This zone will extend approximately 8 km in all directions from the runway. There will be controls on siting and heights of structures within this zone.

Expressway

The new Expressway will join the national KK-15 Road at the existing Nyabarongo Bridge, which crosses the Akagera River. The road will be paved, catering for one lane of traffic in both directions; this will be upgraded to two lanes of traffic in both directions in the future. The Expressway will be constructed in an area that is sparsely populated, crossing areas of subsistence farming, rural homesteads,

floodplains and a wetland. The Expressway will be designed and developed with due regard to safety aspects such as traffic lights, stop signs, speed humps, traffic calming zones, street lights, etc. The Expressway will also incorporate drainage and stormwater control systems.

Construction Camp

A Construction Camp will be constructed within the Airport Area to the south of the Airport Footprint and comprise site offices, training centre, laboratory, changing rooms, canteen, clinic, vehicle parking and maintenance sheds, fuel station/storage facility. The Construction Camp will also include a steel yard, carpentry, two batching plants and a cement warehouse. The Construction Camp will cover an area of approximately 9 ha. A waste water treatment plant is also located just outside the Construction Camp site area.

It is estimated the Project will generate approximately 1,800 jobs during the peak construction period between October 2018 and September 2019. The Developer has a target of 80% for hiring local people in to the workforce.

No onsite accommodation will be provided for any employees, contractors or subcontractors. Accommodation will only be provided to a limited number of senior employees at the Gashora Lodge, located to the east of Lake Rumira, approximately 9 km southeast of the Construction Camp. The remainder of the employees will live offsite in their own accommodation and transported to the site by company vehicles. It is estimated that 13 mini-buses (25 seats) and 25 light vehicles will be used daily for the transport of construction personnel. Approved caterers will provide meals onsite.

3.4.2 Associated Facilities

As defined above in section 2.1.1 according to IFC PS1, Associated Facilities are facilities that are not funded as part of the project but that would not have been constructed or expanded if the project did not exist and without which the project would not be viable.

WASAC and REG will be responsible for supplying water and power respectively for the operation phase. Limited information is currently available regarding the design (in particular route alignment) or the date of these services. However, WASAC and REG will be obligated to provide water and power at least six months before the Project begins operation.

Water Supply

The existing water supply infrastructure in the region comprises three reinforced concrete ground reservoirs: Bugesera Reservoir (with 5,000 m^3 storage capacity), Gahanga Reservoir (with 7,500 m^3 storage capacity) and Kagarama Reservoir (with 7,500 m^3 storage capacity). The Bugesera Reservoir is connected to the Bugesera Area Water Distribution Network, while the other two reservoirs are connected to the Kigali Water Distribution Network.

A new water treatment plant is planned near the Project Area that will supply water to NBIA. It is understood that the water treatment plant will treat water coming from the Kanzenze Well Fields and then distribute the water to the three reservoirs mentioned above. A connection point from the Airport Area to the Kigali Water Distribution Network is foreseen. Further details of the exact location and capacity of the water treatment plant and the pipeline route to the Airport Area are not currently available. The permanent water pipeline from the Kigali Water Distribution Network to the Airport Area will be an Associated Facility to the Project.

Electricity Supply

The source of electricity has yet to be confirmed. However, the power will likely be provided from two sources; the new Mamba peat power plant (80 MW installed capacity which is expected to be commissioned in 2019) located in Gisagara District in the Southern Province and the Rusumo hydroelectric project (80 MW installed capacity) on the border between Rwanda, Tanzania and Burundi.

There will be two 220 kV overhead transmission lines (OHTL) coming from each of these two power plants. According to the Rusumo OHTL RAP Summary[2] (a summary for all RAPs prepared for Rusumo transmission components), there will be an OHTL from Rusumo to Kigali with an extension from the Rusumo OHTL to the Kigali OHTL at the Shango sub-station leading to the airport. Both the Mamba and Rusumo OHTLs will terminate at the Majanja sub-station in the Juru Sector in the Bugesera District. From this substation, the voltage will be stepped down to 30 kV and a line (possibly underground) will terminate at the main airport substation.

The part of the Rusumo OHTL from Shango sub-station to the airport sub-station passing via Majanja sub-station will be an Associated Facility to the Project as per the IFC PS1 definition. However, at this stage, it is unclear whether the Mamba peat power plant and the full length of the Mamba OHTL are also Associated Facilities. This is because it is unclear whether these will only supply the airport or whether they will supply other facilities as well.

The identified Associated Facilities will likely result in environmental and social impacts, in particular they will likely require land acquisition. As mentioned above, WASAC and REG have responsibility for the supplying water and power and, thus, they also have responsibility for assessing and managing any environmental and social impacts in line with relevant legislative and regulatory standards.

Consistent with its commitment to adhere to the requirements set out in IFC PSs, the Developer will engage with WASAC and REG to:

- Confirm whether the Mamba peat power plant and the full length or only part of the Mamba OHTL are considered as Associated Facilities as per IFC PS1 definition;
- Review EIA/ESIAs prepared for each of the Associated Facilities to identify project risks and potential significant impacts; and
- Harmonise impact mitigation measures between the Project and Associated Facilities.

3.5 Construction Activities

3.5.1 Site Clearance

As part of the site enabling works, the vegetation in the Airport Footprint will be cleared.

3.5.2 Construction Camp

Following the site vegetation clearance, the construction of the airport facilities and infrastructure will commence, starting with earthworks. The Construction Camp will be used as the base for the management and coordination of these activities. All construction equipment will be maintained, refuelled and parked in designated areas. Quarry

Aggregate for the Project will be sourced from a quarry located 10 km to the northeast of the Construction Camp. The quarry is licensed by the Rwanda Development Board as well as by the Ministry of Natural Resources and has the capacity to produce 30,000 tonnes per annum of aggregate. Aggregate will be transported via the upgraded quarry road to the Airport Area and Expressway.

3.5.3 Borrow Pits

Five borrow pits are proposed to obtain fill material and six spoil areas have been demarcated in the Airport Area. Approximately 1 m depth of material will be removed from each borrow pit. Approximately 9,000,000 m^3 of cut will be excavated and approximately 7,000,000 m^3 will be filled to level the Airport Footprint. Excess cut material and spoil from site clearing and levelling activities will

[2] https://www.afdb.org/fileadmin/uploads/afdb/Documents/Environmental-and-Social-Assessments/Multinational%20-%20Rusumo%20Hydro%20Power%20Plant-%20Transmission%20Lines%20Component%20%e2%80%93%20RAP%20Summary.pdf

be largely used for filling and shaping borrow pits and landscaping around the Airport Area following construction.

3.5.4 Asphalt Plant

A temporary asphalt plant will be constructed to the northwest of the Airport Area, which will be used during the construction phase of the Project. Similarly, concrete batching plants and mechanical plants will be developed to assist with construction activities.

3.5.5 Surface Water Bodies

No surface water bodies requiring dewatering are present within the Airport Area; however, the south-eastern section of the runway crosses a non-perennial stream. To date, no water has been reported in the stream.

3.5.6 Water Pipeline

It is anticipated that approximately 192 m^3 of water per day will be required during the construction phase of the Project, mainly to be used for the two concrete batching plants, earthworks/fill, Construction Camp site, road watering for dust suppression and sand washing. An additional 20 m^3 of water will be abstracted and treated at the treatment plant onsite for potable use. The Water Pipeline will be laid underground along the edge of a local road located to the southeast of the Airport Area and will provide water from Lake Kidogo to the Construction Camp.

The land use along the Water Pipeline servitude largely comprises subsistence farming. No homesteads will be impacted by the Water Pipeline route. According to Ministry of Infrastructure (MININFRA), the corridor for the Water Pipeline route belongs to the GOR and therefore, no resettlement or compensation is anticipated for its installation.

3.5.7 Wastewater Treatment Plant

The Developer will construct a wastewater treatment plant to the north-western portion of the Construction Camp. Solid waste will be collected onsite at designated areas and will be disposed of offsite to licensed facilities.

3.5.8 Fuel Station

During the construction phase, power will be generated onsite via a series of diesel-fuelled generators. Fuel will be delivered to the Construction Camp area and stored onsite in a fuel station/storage facility. The fuel station will include bulk fuel storage in up to seven diesel tanks, each with a capacity of approximately 75,000 litres.

3.6 Resource Efficiency

The Developer requires the Contractor to apply resource efficiency measures throughout the construction phase as follows:

- To limit fuel and energy demand associated with construction vehicles, equipment and welfare facilities:
  - Implement staff training.
  - Use equipment and machinery that is in good condition and perform regular maintenance.
  - Ensure that machinery is not kept running while in use.
  - Identify, regularly measure and monitor the principal energy uses associated with both construction vehicles and equipment onsite.

  - Define and regularly review performance targets adjusted to account for the type of construction activity.
  - Adopt traffic management controls such as regular inspection of vehicles, adoption of speed restrictions to optimise fuel efficiency of vehicles.
  - Regularly compare energy use with performance targets to identify where action should be taken to reduce energy use.
- To limit water demand associated with construction, vehicles, equipment and welfare facilities:
  - Implement staff training.
  - Identify, regularly measure and monitor the principal water flow within construction works.
  - Define and regularly review performance targets adjusted to account for the type of construction activity.
  - Regularly compare water flows with performance targets to identify where action should be taken to reduce energy use.
- To limit material demand associated with earthworks and construction of the Project:
  - Adopt waste management controls.
  - Source materials that have low embodied energy use, are locally sourced and are durable.
  - Adopt traffic management controls to minimise traffic movements associated with importation of building materials, concrete and aggregate from offsite sources.

3.7 Key Project Phases

The Project will be delivered in five phases. The first phase is planned to be completed by 2020 and the final phase by 2045. Table 3-1 summarises the five phases associated with the Project and relevant key information for each phase.

Table 3-1: Masterplan Development Phases

Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Completion Year	2020	2030	2035	2040	2045
Million Annual Passengers	1.77	2.52	3.42	4.48	5.72
Design Peak Hour (Passengers)	856	1,157	1,490	1,859	2,253
Annual Cargo (tons per annum)	13,803	19,542	27,626	39,434	56,416
Projects per Phase	Runway Taxiway Apron Passenger Terminal Presidential Terminal Airport Facilities Cargo Area	Apron Passenger Terminal Airport Facilities Parking Area	Apron Airport Facilities Cargo Area Extension Office Area Hotel Aircraft Maintenance Parking Area	Taxiway Apron Passenger Terminal Airport Facilities Landside Roads Parking Area	Taxiway Apron Passenger Terminal Airport Facilities Cargo Area Parking Area

Table 3-1: Masterplan Development Phases					
Phase	**Phase 1**	**Phase 2**	**Phase 3**	**Phase 4**	**Phase 5**
	Aircraft Maintenance Landside Roads Commercial Area Parking Area				

4. PROJECT STANDARDS

The following sections are indicative only as the Developer is also responsible for the development and maintenance of a standalone Legal Register for the Project **(BAC-ESM-PRF-001-01).**

For ease of reference, the appended C-ESMPs include tables (where relevant) with the Project Standards applicable to the specific topic of each plan.

4.1 Laws and Regulations of Rwanda

The ESIA Report was developed to align with the requirements of Rwandan legislation. The ESIA Report was submitted to RDB in October 2017 for review and approval.

Below is a general list of relevant legislation in Rwanda and will be updated by the Developer where required as construction proceeds:

- N° 13/2014 of 20/05/2014 - Law on mining and quarry operations
- Ministerial Order N°001/Minirena/2015 of 24/04/2015 - Determining modalities and requirements for the financial guarantee of environmental protection and its use in mining operations
- N° 04/2005 of 08/04/2005 - Organic Law determining the modalities of protection, conservation and promotion of the environment in Rwanda
- N° 003/2008 of 15/08/2008 - Ministerial Order relating to the requirements and procedure for Environmental Impact Assessment (EIA)
- N° 004/2008 of 15/08/2008 - Ministerial Order establishing the list of works, activities and projects that require an EIA
- N° 005/2008 of 15/08/2008 - Ministerial Order establishing modalities of inspecting companies or activities that pollute the environment
- N° 006/2008 of 15/08/2008 - Ministerial Order regulating the importation and exportation of ozone layer depleting substances, products and equipment containing such substances
- N° 007/2008 of 15/08/2008 - Ministerial Order establishing the list of protected animal and plant species
- The National Forestry Act, 2002
- The HIV and AIDS (Prevention and Control) Act, 2008
- Law No. 32/2015 of 11/06/2015 Relating to Expropriation in the Public Interest
- The Water Resources Management Act, 2014
- Law N°. 70/2013 of 02/09/2013 Governing Biodiversity in Rwanda
- Prime Minister's Order N°. 006/03 of 30/01/2017, Drawing Up a List of Swamp Lands, their Characteristics and Boundaries and Determining Modalities of their Use, Development and Management
- Law N°. 43/2013 of 16/06/2013 Governing Land in Rwanda
- Ministerial Order N°. 003/16.01 of 15/07/2010 Preventing Activities that Pollute the Atmosphere
- Ministerial Order N° 002/16.01 of 24/05/2013 Determining the Procedure for Declaration, Authorisation and Concession for the Utilisation of Water
- Law N° 47bis/2013 of 28/06/2013 Determining the Management and Utilisation of Forests in Rwanda
- Ministerial Order N° 004/16.01 of 24/05/2013 Determining the List of Water Pollutants
- Law N° 13/2009 of 27 May 2009 Regulating Labour in Rwanda

4.2 International Financial Institution Standards and Guidelines

As stated in section 1, the Project is being developed in IFC Performance Standards, the Equator Principles and the African Development Bank (AfDB) Integrated Safeguards System.

4.2.1 Relevant IFC Performance Standards

- IFC Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts;
- IFC Performance Standard 2: Labour and Working Conditions;
- IFC Performance Standard 3: Resource Efficiency and Pollution Prevention;
- IFC Performance Standard 4: Community Health, Safety and Security;
- IFC Performance Standard 5: Land Acquisition and Involuntary Resettlement;
- IFC Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources; and
- IFC Performance Standard 8: Cultural Heritage.

Note: IFC Performance Standard 7: Indigenous Peoples is not applicable to this Project.

4.2.2 Relevant IFC Guidelines and Good International Industry Practice

In addition to the local regulatory requirements set out in the previous section, the Developer has made a number of voluntary commitments to uphold GIIP, primarily sourced from the following IFC guidelines:

- IFC General Environmental, Health and Safety (EHS) Guidelines (2007); and
- IFC EHS Guidelines for Airports (2007).

4.2.3 African Development Bank Group Integrated Safeguards System

The Developer has made a further commitment to comply with the African Development Bank Integrated Safeguards System as follows:

- Operational Safeguard 1 Environmental and Social Assessment, which governs the process of determining a project's environmental and social category and the resulting environmental and social assessment requirements;
- Operational Safeguard 2 Involuntary Resettlement Land Acquisition, Population Displacement and Compensation, which sets out the commitments and requirements on involuntary resettlement;
- Operational Safeguard 3 Biodiversity and Ecosystem Services, which aims to conserve biological diversity and promote the sustainable use of natural resources;
- Operational Safeguard 4 Pollution Prevention and Control of Hazardous Materials and Resource Efficiency, which covers the industry-specific, regional and international standards regarding pollution, waste and hazardous materials; and
- Operational Safeguard 5 Labour Conditions, Health and Safety, which establishes the requirements concerning workers' conditions, rights and protection from abuse or exploitation.

4.3 Policy and Strategic Objectives

As part of its ESMS, the Developer has prepared policies that set out the guiding environmental and social principles for the Project. These are summarised in section 6, in addition to the procedures that have been established to ensure adequate and ongoing maintenance and communication of the policies.

The Project Standards that have been adopted can be summarised as illustrated in Figure 4-1.

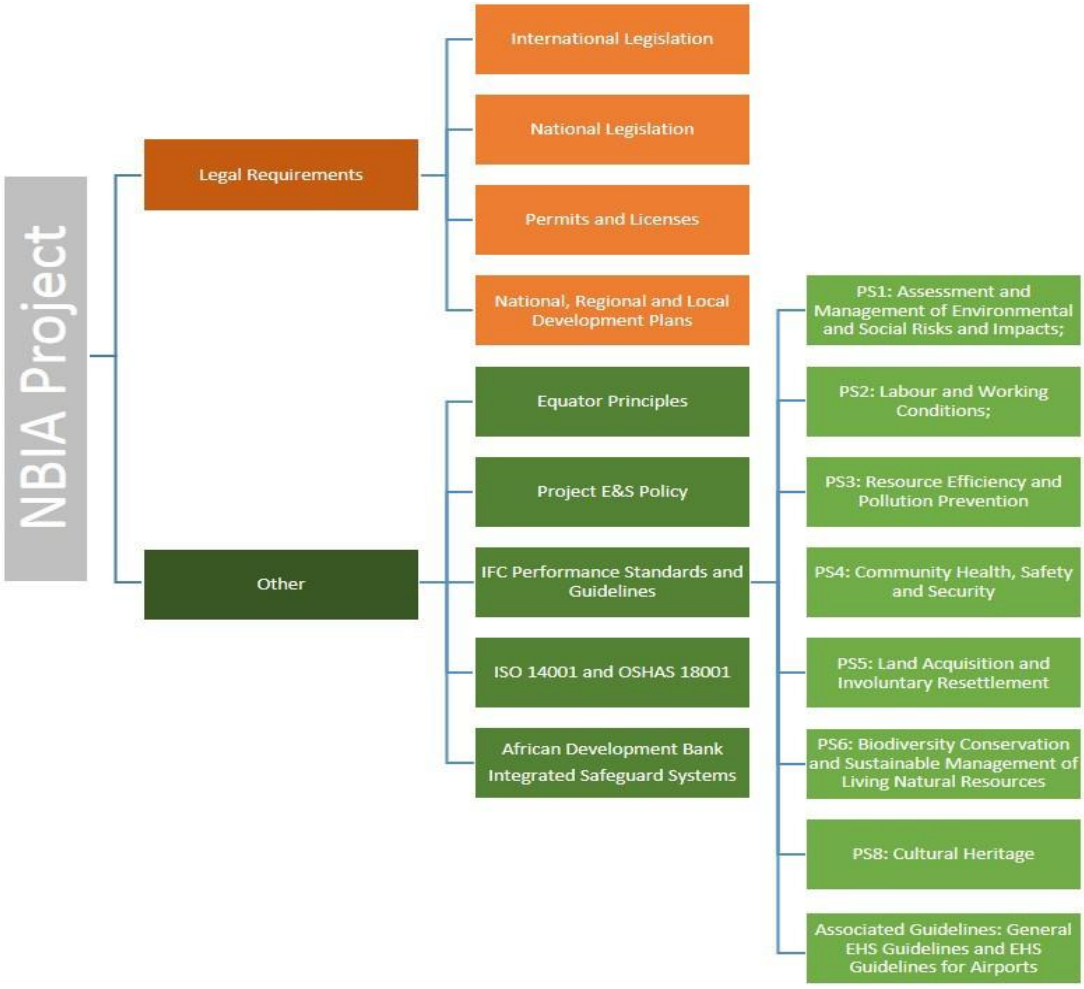

Figure 4-1: Project E&S Standards

5. E&S BASELINE, ASPECTS AND IMPACTS

5.1 Section Overview

This section provides a summary of the:

- Environmental and social baseline conditions;
- Key environmental and social aspects and impacts identified in the Project ESIA (note that the appended C-ESMPs outline these in more detail relevant to each plan's specific topic); and
- Cumulative impact assessment.

5.2 Environment and Social Baseline Conditions

5.2.1 Surrounding Environmental and Social Context

The Airport Area is located within an area dominated by an agrarian landscape with a prevalence of shrub crop production arranged in small to medium scale fields with occasional scrubby trees. There are a number of minor unsurfaced local roads that cross the Airport Area. Inhabitants and landowners within the Airport Area were resettled from 2010 onwards and have been compensated and/or resettled offsite. This area is owned by the GOR and is currently leased by BAC.

The land use along the Water Pipeline servitude largely comprises subsistence farming. No rural homesteads will be impacted by the pipeline route. The route of the Expressway crosses subsistence farming land uses, rural homesteads, floodplains and dissects the Nyabarongo Wetland.

5.2.2 Climate

Compared to other regions of the country, Bugesera is characterised by a very hot climate resulting from the absence of mountains, the relatively low altitude, low rainfall and excessively prolonged periods of drought. The district has a tropical climate with mean temperatures ranging from 15-16 degrees Celsius at night to 26-28 degree Celsius around noon. Humidity levels vary from 40-55% during the dry season months and 60-90% during the wet season months.

A total of 900-1200 mm of rain falls over Bugesera each year. The region experiences two distinct tropical wet seasons (mid-March to mid-June and mid-October to December), separated by one short (January to mid-March) and one long dry season (mid-June to mid-October). Most precipitation is generated from short-lived convective weather events such as that from tropical thunderstorms and squall lines.

5.2.3 Air Quality

Rwanda has one of the world's lowest per capita emissions of greenhouse gases (GHGs). It is highly vulnerable to the impacts of temperature and rainfall changes due to climate change since it relies on rain-fed agriculture for subsistence livelihoods.

Transportation is one of the largest sources of air pollution, especially in Kigali and air pollution is a growing concern in Rwanda's urban areas.

5.2.4 Topography

The Airport Area is situated on a plateau that rises from approximately 1,400 m in the south, north and east to a maximum elevation of 1,437.5 m at the centre. The lower areas fall rapidly to the river valleys at slopes ranging from 2.5% in the northern quadrant to 12.5% in the eastern quadrant of the site.

The Airport Area is situated on a relatively flat, slightly undulating mesa that is surrounded by poorly drained, swampy rivers to the north and west while there a number of small lakes to the east.

The Expressway route hugs the swampy areas of the Nyabarongo Wetland, as such the profile along the route is relatively flat.

5.2.5 Geology and Soils

The morphology and topography at the Project Area indicates an altered granite massif. The depth of soil cover (8 to 34 m) and the occurrence of laterite in the vicinity are both indicative of a deep weathering profile. The solid geology underlying the weathered granite in the Airport Area consists of Precambrian granitic rock, metaquartzites, pegmatites and mica schists. The silty/clayey soils overlying the granite are due to weathering of the granite.

5.2.6 Water Resources

The main natural water bodies within the influence of the Project are:

- Mwesa and Kibilizi seasonal streams, located partially onsite, as well as an unnamed tributary discharging to Lake Kidogo;
- Lake Kidogo, located approximately 2 km southeast of the Airport Area;
- Lake Gashanga, located approximately 4.8 km east of the Airport Area;
- Lake Rumira, located approximately 5 km southeast south of the Airport Area;
- The Nyabarongo River, which will be crossed by the Expressway approximately 9.5 km northwest of the Airport Area. The Nyabarongo River is also located approximately 7 km southeast of the Airport Area, beyond the lakes listed above (this is its closest location to the Airport Area); and
- The Nyabarongo Wetland Area, partially crossed by the northern end of the Expressway corridor.

The Project also falls within the Nyabarongo Wetland area, specifically along the Expressway corridor.

5.2.7 Biodiversity

The Project Area is located outside national protected areas. The nearest protected area is Akagera National Park located approximately 40 km away (northeast). The Project Area includes parts of the Nyabarongo Wetland Important Bird Area (IBA), which is an internationally recognised area as defined by IFC PS6.

The Project Area is characterised by five vegetation types: anthropic landscapes, grassland, wooded grassland, bushland and thicket and swamp and aquatic vegetation. A total of 103 plant species were recorded in the different vegetation types. Birds, mammals, amphibians and reptiles have been identified within and in the vicinity of the Project Area.

5.2.8 Socio-Economic Setting

The following provides a high level social and economic baseline relevant to the Project (i.e. within Bugesera District):

- According to the 2012 census, Bugesera District has a population of 361,914 people with an average annual growth rate of 3.1%;
- The District is relatively poor compared to other districts and the nation as a whole with about half of the population being poor, including 20% that is extremely poor;
- Approximately 30% of households still use an unimproved drinking water source;
- Less than 10% use electricity for lighting;
- Almost 70% of the households walk more than an hour to reach a health centre;

- Agriculture (crop farming and livestock) is the main economic activity and source of income, but most households (approximately 70%) cultivate under 0.9 ha of land (which is the Food and Agriculture Organisation's suggested land amount for Rwandan households to conduct sustainable agriculture), including 30% with under 0.3 ha of land;
- There is relatively high-out migration rate indicating a lack of acceptable economic opportunities; and
- Employment status by sex indicates that females are more occupied in small-scale farm activities than males and less involved in other types of employment that provide high income such as independent non-farm or wage non-farm work.

There are no declared archaeological, paleontological and/or historic monuments sites in Bugesera District.

5.3 Key Environmental and Social Aspects and Impacts

The ESIA identified the following potential E&S aspects and impacts specific to the construction activities. These are all covered in more detail by the appended C-ESMPs, with the exception of resource efficiency which is covered here and in section 3.6. Operation phase activities will be covered in the O-ESMPs.

5.3.1 Traffic

- Impacts to driver delay, severance, transport user safety and transport user amenity to the local community and vulnerable road users on roads used by construction traffic.

5.3.2 Air Quality

- Deterioration of ambient air quality (due to fugitive dust emissions and notably PM_{10}) resulting from earthworks and construction machinery and equipment.

5.3.3 Noise and Vibration

- Noise and vibration annoyance to dwellings, flora and fauna along the quarry road, outside the Airport Area boundary and along the Expressway.

5.3.4 Biodiversity

- Direct habitat loss mainly due to site clearance.
- General disturbance, including noise, due to construction activity.
- Impacts on water and air quality.
- Spread of invasive species.
- Changes in hydrology resulting from construction activities in and near waterbodies, particularly along the Expressway corridor.
- Water abstraction in Lake Kidogo.
- Impacts from induced access, loss of farmland and population influx.

5.3.5 Water Resources

- Increased surface water runoff and pollution affecting surrounding water bodies and streams (Mwesa Stream, Kibilizi Stream, Nyabarongo River, Nyabarongo Wetland Area and Lake Kidogo).
- Increased water supply demand on Lake Kidogo due to water abstraction.

5.3.6 Geology and Soils

- Contamination of soil resources due to unplanned release event (e.g. release of hazardous substance due to spillage or catastrophic tank failure) affecting soil resources (other environmental receptors such as water resources, and ecology) as well as human health.
- Identification of previously unidentified soil contamination.
- Soil disturbance and loss of topsoil resources, particularly during earthworks.

5.3.7 Archaeology and Cultural Heritage

- Destruction of archaeological sites.
- Destruction and exposure of human remains and burials.

5.3.8 Landscape and Visual

- Impact on form and cover of landscape fabric.
- Impact on baseline character/characteristics of landscape character.
- Impact on visual amenity of settlements on surrounding communities including Kinazi, Kayumba, Mwogo, Rilma and Nyamata.
- Impact on visual amenity of road users on KK-15 Road, DR73 route and DR74 route.

5.3.9 Waste

- Improper disposal of waste leading to the release of substances which may be harmful to environment and local communities.
- Health related impacts on employees of the Project as a result of improper handling, storage and disposal of waste.

5.3.10 Resource Efficiency

- Increased fuel and energy demand associated with construction vehicles, equipment and welfare facilities.
- Increased water demand associated with construction, vehicles, equipment and welfare facilities.
- Increased material demand associated with earthworks and construction of the Project.

5.3.11 Socio-economics

- Land acquisition and involuntary resettlement impacts in the Airport Area and Expressway corridor.
- Land speculation from the Expressway.
- Influx (un-planned in-migration) affecting local residents and communities.
- Potential damage to community infrastructure and utility services.
- Exposure to labour and working conditions that fall short of IFC PS2 requirements affecting employees.
- Economy, employment and livelihood impacts affecting local residents and communities include:
  - Job creation and equity.
  - Local-level inflation.
  - Local level loss of existing employees.
  - Loss of construction jobs at the end of the construction period.
  - Loss of access to family/friends and social and physical infrastructure/facilities (such as health centres.
- Food Security and Livelihoods Impacts include:

- An increasing lack of agricultural land.
- Threats to water/fisheries-based livelihoods resulting from deterioration of water resources.
- Threats to bee-keeping/honey production resulting from deterioration of air quality and construction noise disturbance.
- Increased livestock casualties resulting from construction traffic.

- Community Health Safety and Security Impacts include:
  - Risk of an increase in STIs and other non-communicable diseases affecting host local communities and workforce.
  - Health impacts resulting from changes in air quality and changes to water resources on local communities.
  - Increase in road traffic accidents resulting from construction traffic.
  - Potential for conflicts between security providers and the locals.

5.4 Cumulative Impacts

There are currently no '*planned or reasonably defined'* developments as defined in IFC PS1 within the Airport Area. A future development of approximately 1,500 ha may be established following the construction of the airport, which is referred to as the Aerotropolis. There are, however, no fixed or approved plans or any established timeframes for the Aerotropolis.

GOR officials at MININFRA have indicated that the development of the Aerotropolis and the Special Economic XZone (SEZ) will depend on the successful development of the Project and must be further integrated with urban planning at the district level. As such, it can be assumed that the construction of the Aerotropolis will not start before Phase 1 of the Project, and so no cumulative impacts would likely occur before then.

In line with IFC PS Guidance Note 1, the Developer will use commercially reasonable efforts to engage relevant government authorities, and other developers, Affected Communities and, where appropriate, other relevant stakeholders, in the design and implementation of coordinated mitigation measures to manage any potential cumulative impacts should they be identified.

6. SUMMARY OF THE DEVELOPER ESMS

6.1 Introduction

This section summarises the key components of the Developer ESMS, **(BAC-ESM-MAN-001)** and places this Developer C-ESMP document in context within the wider system.

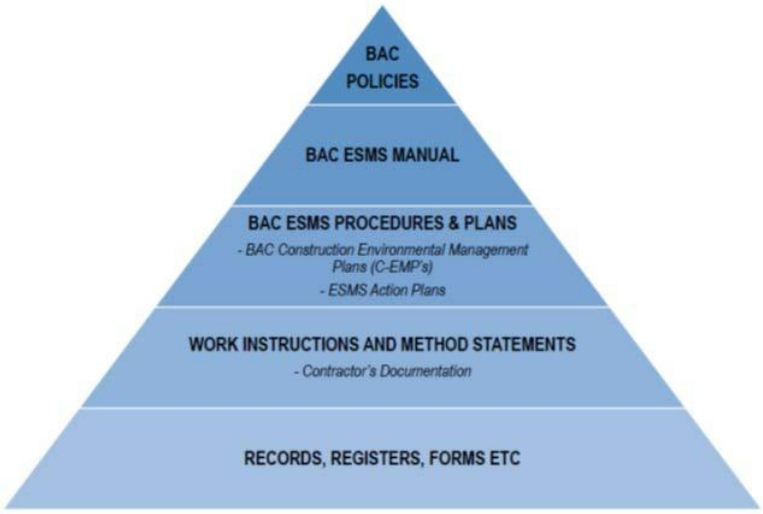

Figure 6-1: Developer ESMS Structure

International Standards Organisation (ISO) 14001[3] and OHSAS 18001[4] are international management system specifications for environmental management systems and occupational health and safety management systems respectively. They have been developed via a consortium of leading national standards bodies, certification bodies, and specialist consultancies.

The Developer ESMS aligns with ISO 14001 and OHSAS 18001, and reflects the associated international good practice Plan-Do-Check-Act model of systematic management[5]. This section describes the procedures, processes and approach that are being adopted for each element of the Plan-Do-Check-Act cycle shown in Figure 6-2.

[3] BSI, 2015: EN ISO 14001:2015: Environmental Management Systems — Requirements with guidance for use.
[4] BSI, 2007: OHSAS 18001:2007: Occupational Health and Safety Management Systems – Requirements currently undergoing transition to ISO standard.
[5] Note that EDEPC does not require certification to ISO 14001 and OHSAS 18001 but all parties working for, or on behalf of the Project must implement Management Systems that align with the principles and intent of ISO 14001 and OHSAS 18001, addressing each of the key elements of the PDCA model.

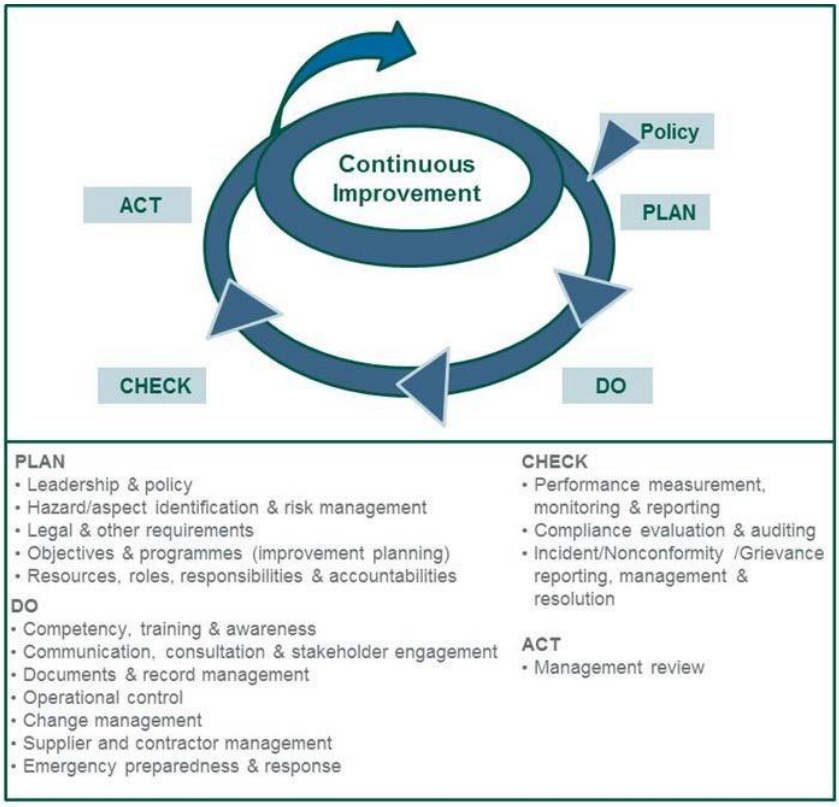

Figure 6-2: ISO Plan-Do-Check-Act Model of Management

6.2 Policy

As per its ESMS, the Developer has established and will maintain the following environmental and social policies for the Project:

- Environmental and Social Policy;
- Human Resources (HR) Policy;
- Drug and Alcohol Policy;
- HIV/ AIDS Policy, and
- Community Grievance Policy.

These policies have been developed to align with all regulatory requirements, international standards and good practices, including IFC standards and AfDB safeguards, and to communicate the Developer's expectations with respect to environment, social and HR management.

The policies will be adopted by the Contractor (and therefore communicated to sub-contractors) to enable them to align their policies/systems. The policies will be communicated to all workers during site induction, made available in visible areas onsite and made available to interested parties on request.

The policies will be reviewed a minimum of once annually, as part of the management review process and as the need arises, to ensure that it is maintained and appropriate to the nature and scale of the Project and the Developer's business objectives.

6.3 Hazard/Aspect Identification and Risk Management

An ESIA has been completed for the Project to identify key E&S aspects, risks and potential impacts requiring mitigation, management and monitoring controls. The identification and assessment of

impacts has been undertaken through a process comprising consultations, onsite observations, baseline studies and surveys, emission modelling, literature reviews and expert opinion based on experience of other similar projects. The modelling and assessment results have been reviewed and verified as part of finalising the ESIA Report.

The Developer is committed to the Mitigation Hierarchy, as set out in Figure 6-3 (Health and Safety), and the Mitigation Hierarchy set out in Figure 6-4 (Environmental and Social Risks). These hierarchies will be adhered to when devising appropriate mitigation and management strategies and measures.

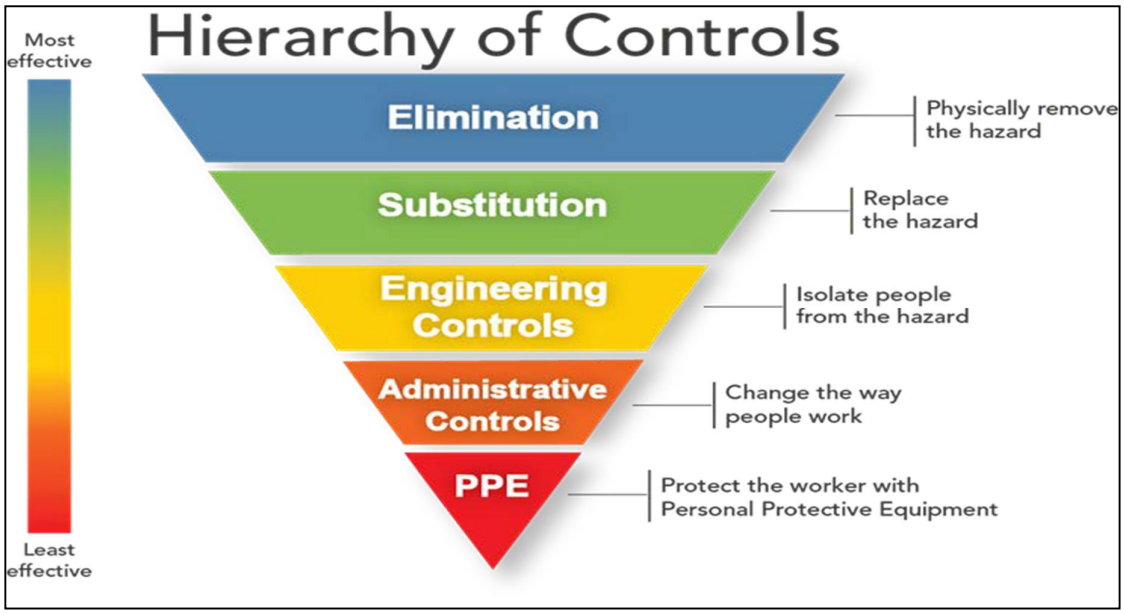

Figure 6-3: Mitigation Hierarchy of Control for Occupational Health and Safety Risks

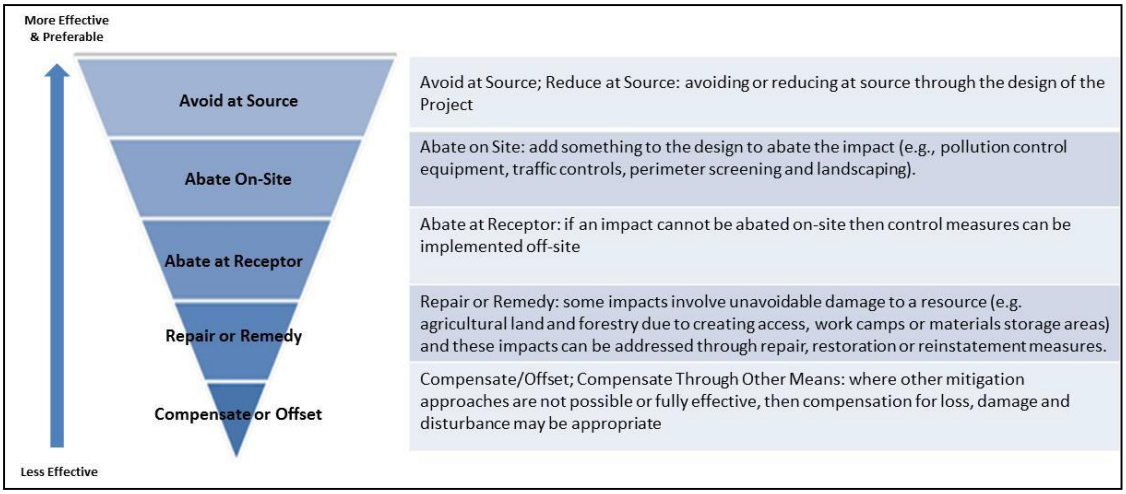

Figure 6-4: Mitigation Hierarchy of Control for Environmental and Social Risks

To ensure ongoing risk management during the construction phase of the Project, the Developer requires the Contractor to maintain a Risk Register, with oversight and input as necessary from the Developer.

6.4 Legal and Other Requirements

Compliance with all relevant legislation is a core commitment of the Developer ESMS and is communicated externally as part of the Project Policies. The Developer will stay abreast of relevant

legal developments via its engagement with the GOR. Regular communication with MININFRA, the Rwanda Transport Development Agency (RTDA), RDB and Rwanda Environmental Management Authority (REMA) and other relevant government departments will take place in order to keep updated with new legislation or amendments to existing legislation.

The Contractor will be required to:

- identify the environmental laws, regulations and standards applicable to their scope work,
- obtain and review those laws, regulations and standards,
- ensure project personnel are aware of those laws and regulations that impact on their work,
- ensure that project activities are in compliance with the laws and regulations.

Any environmental approvals (permits/ licenses) required in the name of Contractor will be the responsibility of the Contractor. Compliance with such documents, need to be undertaken by the Contractor on a regular basis, and will form part of the Developer's performance assessment of the Contractor.

6.5 Roles and Responsibilities

The Developer is the custodian of the Developer ESMS, and will ensure that it is actively communicated to the Contractor. The Developer ESMS forms part of the contractual agreements with the Contractor, and parties undertaking work for the Developer are required to align their systems with the Developer ESMS.

The Developer holds ultimate responsibility for the environmental and social performance of the overall Project, including the E&S performance of Contractor. The Contractor is responsible to undertake the construction of the Project in accordance with the Developer's E&S requirements as part of its ESMS.

All staff have a responsibility to consider environmental and social impacts when they manage and undertake work. The Developer is committed to continuous improvement of environmental and social management and expects the same from the Contractor.

Further detail on the Developer roles for E&S management is provided in the Developer ESMS. The Contractor is required to outline the roles and responsibilities for its E&S management in the Contractor CIPs.

The organisation structure for E&S management as per the Developer ESMS is shown in Figure 6-5.

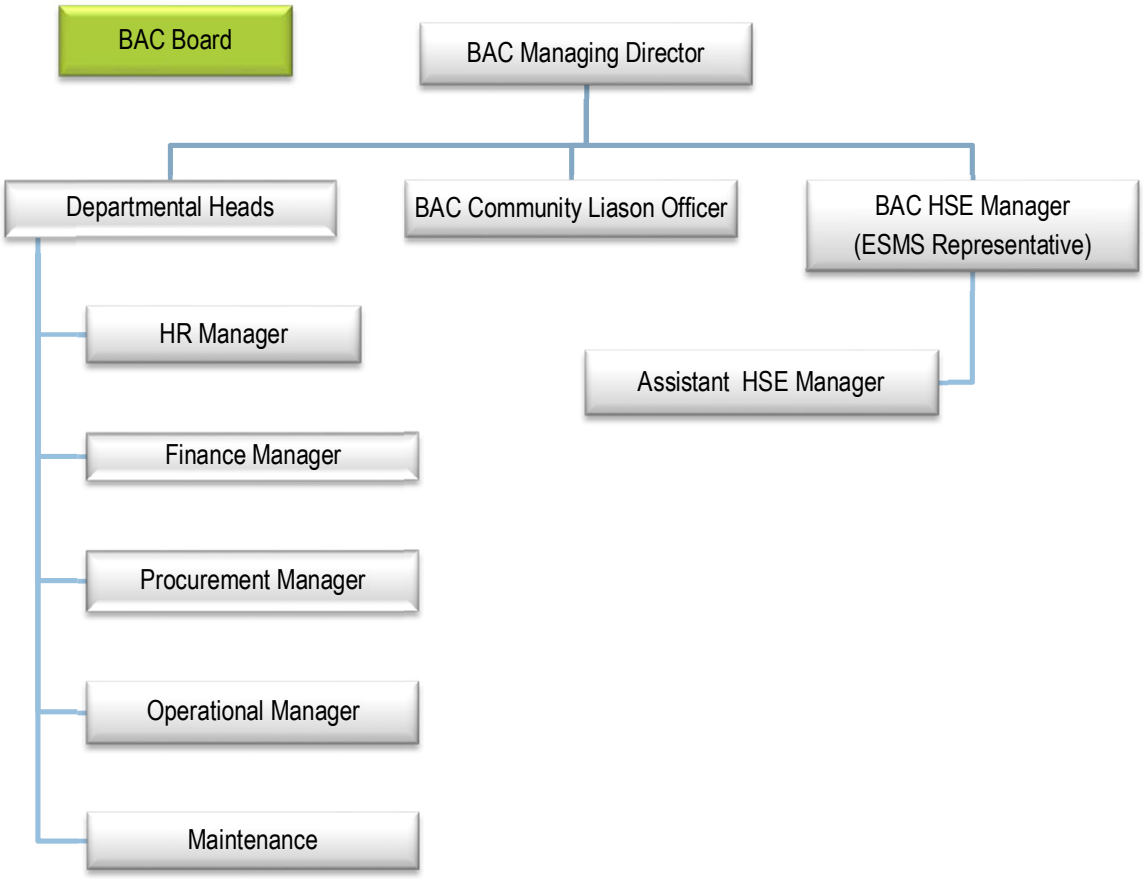

Figure 6-5: Organisation structure for E&S management as per the Developer ESMS

The Developer requires the Contractor to be responsible for ensuring adherence to environmental and social commitments, including mitigation and control throughout the construction phase. The Contractor HSE Manager will be responsible for training all relevant sub-contractors and employees. The structure of the Contractor's E&S management is further detailed in the Contractor CIPs.

The Developer recognises that the delivery of all relevant E&S management and monitoring controls requires effective and established mechanisms of communication, collaboration and coordination with the Contractor. With this in mind, the Developer/Contractor interface has been considered, and the key elements of that interface have been mapped out as shown in Figure 6-6. To facilitate cross-project collaboration the Developer and the Contractor will meet weekly to facilitate the progress reviews of the Project.

Figure 6-6: The Developer/Contractor Interface

As per its ESMS, the Developer requires all contractors to identify and define E&S roles, responsibility and authorities in the Contractor CIPs, and to ensure that human, technical and financial resources are provided where essential to the implementation and control of the E&S management.

During the Project ESIA process, formal stakeholder engagement was undertaken, in which several organisations and individuals had the opportunity to engage and raise comments for the Project. A Stakeholder Engagement Plan has been developed, which is a live document, and a key ESMS component that will be amended on a regular basis.

The key engagements expected during the construction phase are as follows:

- Engagement with external stakeholders will be led and managed by the Developer Community Liaison Officer (with support as necessary from the Contractor HSE Manager) including

stakeholder engagement with communities, the government and other external parties, including the media; and

- Engagement with Project Personnel (workers) will be led and managed by the Contractor with more details provided within the relevant Contractor CIP.

6.6 Training, Competency and Awareness

In accordance with the Developer ESMS, the Developer requires the Contractor to ensure the competency of the construction Project team through:

- Clear definition of critical E&S roles and responsibilities;
- Robust interview processes and consultancy selection processes;
- Ongoing training and development activities; and
- Use of external specialist support, where appropriate.

The Developer will evaluate the performance of the Contractor's training activities during audits. Initially, based on this C-ESMP and then on an annual basis, the Developer requires the Contractor to carry out a training needs analysis and report any competency gaps or training needs. The analysis will identify options for internal capacity building and training of existing staff, and/or recruitment of additional personnel with relevant skills. The Contractor will allocate resources or training courses as necessary.

As part of establishing the construction contract, the Developer communicated its competency expectations and training requirements of the Contractor. A detailed description of Contractor competency and training procedures is provided in the Contractor's CIPs. In general, the Contractor's approach comprises analysis of competency needs (for the specific project), effective recruitment to ensure alignment with those needs, and ongoing training to maintain and enhance the competency of hired staff.

All necessary training will be provided as part of the Contractor's induction training (to provide general awareness) and job-specific training as necessary.

The site induction will ensure that all personnel acknowledge the Project policies, organisational structure, job description requirements, regulations, site specific induction and health, safety and environmental awareness training.

All Project personnel involved in construction activities will be provided with toolbox training that outlines the specific management and monitoring controls included in the Developer C-ESMPs and the Contractor CIPs. Attendance records for all training will be kept for evaluation during the Developer's and third party audits.

6.7 Documentation and Record Keeping

The Developer requires the Contractor to manage E&S documentation in line with the requirements of the Developer ESMS Documents, Data, and Correspondence Management Procedure. The Developer and Contractor will maintain appropriate levels of documentation to demonstrate compliance with Project Standards and the Developer's requirements, as set out in this document. The Contractor documentation shall be available for review at all reasonable times.

The Contractor is required to operate an Open File Policy for all E&S documentation in order that Developer HSE management and Lender representatives can review any aspect of the E&S documentation at all reasonable times. The Contractor is also required to establish procedures governing review, approval, updates, version control, confidentiality, distribution, storage, retention and disposal of E&S information. Documents will be shared between the Contractor and the Developer electronically and in hard copy.

Over the course of the construction period, specific project documentation may also be publicly disclosed as necessary, via appropriate methods.

6.8 Operational Control

The Developer requires the Contractor to identify activities with the potential to cause E&S impacts and implement appropriate operational controls. These controls shall include effective supplier and contractor management procedures controlling the purchase of goods, equipment and services, control of any workplace visitors and stipulated operating criteria. As part of the ESIA process, the Developer identified Project Standards, including GIIP and specific management and mitigation measures, to be implemented by the Contractor as part of day-to-day management of operations (e.g. management and monitoring controls, and procedures). These standards and controls are set out in the appended Developer C-ESMPs.

6.9 Emergency Preparedness and Response

The Developer requires all Project personnel, including the Contractor, to identify potential and actual emergency situations, and respond to these situations in an appropriate manner, in order to prevent or mitigate potentially adverse E&S impacts. The Developer requires the needs of relevant interested parties to be taken into account (e.g. emergency services, communities, neighbours) as part of this process, and procedures shall be reviewed, tested and revised periodically, and where required.

For the construction phase, the Developer requires the Contractor to develop a Project-specific Emergency Preparedness and Response Plan and associated procedures. The Developer will review and monitor the performance of the Contractor's plan and related procedures as part of the monthly reviews, weekly meetings, and through performance reporting, as necessary.

As the Project transitions to the operational phase, Emergency Preparedness and Response will become the responsibility of the Developer and/or the airport operator, for the operational part of the site.

6.10 Management of Change

The Developer requires the Contractor to comply with the Change Management Procedure as set out in the Developer ESMS Manual **(BAC-ESM- PRO-001).**

Any changes that significantly impact ESMS documents or approved design documents are considered a change.

Effective Management of Change underpins every element of the Developer ESMS including but not limited to:

- Maintaining the ESMS;
- Review of environmental and social risks and aspects;
- Changes in compliance requirements;
- Changes in resources, roles and responsibilities, and related management and assurance of competency;
- Communications, consultation and stakeholder engagement;
- Changes emerging from the ongoing detailed design process and operational control; and
- Emergency Preparedness and Response.

There are a number of elements in the Developer ESMS that are relevant to the checking and identification of changes in Project E&S performance, risk profile or management effectiveness to ensure that action is taken to address issues and ensure appropriate management of change. These include:

- Performance Measurement and Reporting;

- Incident/Non-Conformity Reporting and Resolution; and
- Management Review.

6.11 Performance Monitoring, Evaluation and Reporting

6.11.1 Monitoring, Measurement, Analysis and Evaluation

As per the Developer ESMS Manual, **(BAC-ESM-MAN-001)** the Developer requires the Contractor to monitor its own E&S performance to ensure compliance with the Project Standards throughout construction. Both Developer and Contractor performance monitoring responsibilities are specified in the appended C-ESMP Monitoring Controls tables.

Where a non-compliance is detected, or monitoring results are outside of the expected range the results will be immediately reported to the Developer.

A non-compliance report will be issued by the Contractor documenting the outcome of the steps taken, in consultation with the Developer.

Specific roles for undertaking E&S monitoring will be further elaborated in the Contractor CIPs as necessary.

6.11.2 Audits

The Developer will review audits undertaken by the Contractor and other parties as described below.

Contractor Audits

The Contractor is required to undertake audits and inspections of its own management systems, plans and procedures used to manage and mitigate environmental and social risks. The Contractor audits will address effectiveness and compliance against the Project standards.

Contractor audit reports are to be provided to the Developer upon completion. A corrective action plan will be drafted to address all non-compliances.

Third Party Audits

Third party audits will also be conducted, including the following:

- Audits by local authority regulators to ascertain compliance with national legislation and Project permit approval conditions; and
- The Independent Environmental and Social Consultant (IESC), acting on behalf of the Lenders, will undertake periodic environmental and social audits of Project activities. Such audits will be undertaken in accordance with the predetermined protocol agreed between the Developer and the Lenders. Findings will be reported to the Contractor and the Developer.

6.11.3 Non-Compliance and Corrective Actions

The analysis of the non-compliances identified during monitoring and audits, is crucial for the identification of corrective actions that are to be implemented.

Incidents and non-compliances relating to construction activities and E&S management within the site boundary will be reported to the Developer and managed by the Contractor. The Contractor is required to establish procedures for incident reporting, investigation, corrective/ preventative action and resolution in line with the reporting requirements as set out in the Developer Incident and Non-conformity and Corrective Action Procedure **(BAC-ESM-PRO-013).**

Any incident reporting requirements to either the Rwandan environmental authorities or the Lenders will be managed by the Developer.

6.12 ESMS Review and Continual Improvement

As the Developer ESMS continues to develop and evolve, the Developer will periodically review the overall effectiveness of the system, and decide if any changes are necessary or desired. The review will consider the results of internal and external audits, incidents, regulatory developments, communications with external parties, etc.

This review process will take place with necessary input from the Contractor. The Developer's HSE management will agree actions, if any, to ensure the Project policies, ESIA Commitments, C-ESMP (this document) and associated procedures and practices remain fit for purpose, and are implemented and effective.

7. ESIA COMMITMENTS REGISTER

A Project ESIA Report has been prepared and submitted to the Rwanda Development Board and Lenders for consideration and approval. The ESIA Report mitigation, management and monitoring measures (as per ESIA Chapter 20: Environmental and Social Management) have been collated in to a Commitments Register below to demonstrate how they will be further addressed by the Developer C-ESMPs, and ultimately the Contractor CIPs.

Table 7-1: ESIA Commitments Register

ESIA Chapter Reference	Impact	Receptor	ESIA Mitigation/ Management/ Monitoring Measure	Developer ESMS Document Allocation	C-ESMP Management Control IDs
Chapter 8 Transport	Impacts to driver delay, severance, transport user safety and transport user amenity to local communities and road users within the Project Area.	Local community and vulnerable road users.	The design of the Expressway will take cognisance of safety aspects such as traffic lights, stop signs, speed humps, traffic calming zones, street lights, etc. The Expressway design will be developed and approved by engineers as per Rwanda requirements and GIIP. The quarry road will be shortened with the upgrade of an existing link to the road, which will result in shorter distances travelled and will alleviate transport through the centre of the Kabukuba Village and in the minimisation of potential accidents to the surrounding community and cattle. Ensure all vehicles are maintained regularly and are road worthy. Signs and lights are to be provided to warn motorists of hazardous driving conditions created by construction interference with existing roads.	Developer Traffic Management Plan	TR01 TR02 TR03 TR04
Chapter 9 Air Quality	Deterioration of ambient air quality (due to fugitive dust emissions and notably PM_{10}) resulting from earthworks and construction equipment.	Communities located down wind of the Airport Area and Expressway.	Vehicle speed limitations, particularly close to sensitive receptors (to be determined on a case by case basis to reduce dust emission although typically < 20-30 km). Restriction on vehicular usage in off-road areas.	Developer Pollution Prevention Plan	AQ01

Table 7-1: ESIA Commitments Register					
ESIA Chapter Reference	**Impact**	**Receptor**	**ESIA Mitigation/ Management/ Monitoring Measure**	**Developer ESMS Document Allocation**	**C-ESMP Management Control IDs**
			Limiting earthwork activities during high winds. Minimising dust from material handling sources, such as conveyors and bins, by using covers and/or control equipment (water suppression, bag house filters or cyclones). Minimising dust from open area sources, including storage piles, by using control measures such as installing enclosures and covers, and increasing the moisture content. Dust suppression techniques, such as applying water or non-toxic chemicals to minimise dust from vehicle movements. Management of emissions from mobile sources, including adequate maintenance of vehicle and equipment. Visual monitoring for dust emissions.		
Chapter 10 Noise and Vibration	Noise annoyance to dwellings along the quarry road, outside the Airport Area boundary and along the Expressway during construction.	Existing dwelling along the Expressway.	Vehicles, machinery and equipment will be of good working condition and submitted to routine maintenance and repair.	Developer Pollution Prevention Plan	NV01

Table 7-1: ESIA Commitments Register					
ESIA Chapter Reference	**Impact**	**Receptor**	**ESIA Mitigation/ Management/ Monitoring Measure**	**Developer ESMS Document Allocation**	**C-ESMP Management Control IDs**
Chapter 10 Noise and Vibration	Vibration annoyance to dwellings along the quarry road, outside the Airport Area boundary and along the Expressway during construction.	Existing dwellings outside of the Airport Area boundary, along the Expressway and along the quarry road.	Vehicles, machinery and equipment will be of good working condition and submitted to routine maintenance and repair.	Developer Pollution Prevention Plan	NV02
Chapter 11 Biodiversity	Direct habitat loss, changes in hydrology, water abstraction, disturbance, water quality, invasive species and air quality. Impacts from induced access, loss of farmland and population influx.	Nyabarongo Wetlands IBA.	Employment of EHS Officers. Offsetting, to be detailed in Biodiversity Action Plan. Biodiversity Monitoring Strategy.	Developer Biodiversity Management Plan Developer Biodiversity Action Plan	BD01 to BD14 BD16 BD19 BD20
Chapter 11 Biodiversity	Direct habitat loss, sediment runoff, invasive species and air quality.	Modified Habitats: Anthropic landscapes, Grassland, Wooded grassland, Bush land and thicket.	Employment of EHS Officers. Landscaping using native plant species.	Developer Biodiversity Management Plan	BD01 BD03 to BD09 BD11 to BD14 BD16 BD19 BD20
Chapter 11 Biodiversity	Direct habitat loss, changes in hydrology, water abstraction, disturbance, invasive species, water quality and air quality. Impacts from induced access, loss of farmland and population influx.	Natural Habitats: Swamp and aquatic vegetation.	Employment of EHS Officers. Offsetting, to be detailed in BAP. Biodiversity Monitoring Strategy.	Developer Biodiversity Management Plan Developer Biodiversity Action Plan	BD01 BD03 to BD14 BD16 BD19 BD20

Table 7-1: ESIA Commitments Register

ESIA Chapter Reference	Impact	Receptor	ESIA Mitigation/ Management/ Monitoring Measure	Developer ESMS Document Allocation	C-ESMP Management Control IDs
Chapter 11 Biodiversity	Changes in hydrology, water abstraction, water quality. Impacts from induced access and population influx.	Ningu *Labeo victorianus*.	Offsetting, to be detailed in BAP if confirmed to be present. Biodiversity Monitoring Strategy.	Developer Biodiversity Management Plan Developer Pollution Prevention Plan	BD09 BD10 BD12 BD14 BD15 BD21
Chapter 11 Biodiversity	Changes in hydrology, water abstraction, water quality.	*Varicorhinus ruandae.*		Developer Biodiversity Management Plan Developer Pollution Prevention Plan	BD09 BD10 BD12 BD14 BD15 BD21
Chapter 11 Biodiversity	Construction Phase impacts including site clearance and loss of habitat.	Grey Crowned-crane *Balearica regulorum.*	Employment of EHS Officers. Biodiversity Monitoring Strategy.	Developer Biodiversity Management Plan Developer Biodiversity Action Plan	BD01 BD15 BD17 BD18 BD19 BD20

Table 7-1: ESIA Commitments Register

ESIA Chapter Reference	Impact	Receptor	ESIA Mitigation/ Management/ Monitoring Measure	Developer ESMS Document Allocation	C-ESMP Management Control IDs
Chapter 11 Biodiversity	Construction Phase impacts including site clearance and loss of habitat.	Pallid Harrier *Circus macrourus.*	Employment of EHS Officers. Biodiversity Monitoring Strategy.	Developer Biodiversity Management Plan Developer Biodiversity Action Plan	BD01 BD15 BD17 BD18 BD19 BD20
Chapter 11 Biodiversity	Direct habitat loss, changes in hydrology, water abstraction, disturbance, water quality, invasive species and air quality. Impacts from induced access, loss of farmland and population influx.	IBA trigger species assemblage and Madagascar Pond Heron.	Employment of EHS Officers. Offsetting, to be detailed in BAP. Biodiversity Monitoring Strategy.	Developer Biodiversity Management Plan Developer Biodiversity Action Plan	BD01 BD09 BD10 BD12 BD14 BD15 BD17 to BD20
Chapter 11 Biodiversity	Construction phase impacts mainly related to changes in hydrology.	Hippopotamus	Employment of EHS Officers. Offsetting, to be detailed in BAP. Biodiversity Monitoring Strategy.	Developer Biodiversity Management Plan Developer Biodiversity Action Plan	BD09 BD10 BD12 BD14 BD15

Note: Biodiversity residual impact assessment excludes offsetting strategy that will compensate for losses and deliver a net gain as required. This is addressed in the Developer Biodiversity Action Plan (BAP), a key component of the Developer ESMS that interfaces with the Developer Biodiversity Management Plan (BMP).

Table 7-1: ESIA Commitments Register

ESIA Chapter Reference	Impact	Receptor	ESIA Mitigation/ Management/ Monitoring Measure	Developer ESMS Document Allocation	C-ESMP Management Control IDs
Chapter 12 Water Resources	Surface Water pollution arising from construction activities.	Surrounding water bodies and streams (Mwesa Stream, Kibilizi Stream, Nyabarongo River, Nyabarongo Wetland Area, and Lake Kidogo).	Install oil interceptors and silt traps. Do not permit any discharge to Lake Kidogo. No vehicles will be permitted to access the lake or any other watercourse or surface water body. Ensure site compounds and storage areas are situated away from surface water receptors. Ensure that the storage of materials and waste is undertaken in accordance with international best practice.	Developer Pollution Prevention Plan Developer Stormwater Management Plan	WR02 STW02 STW03
Chapter 12 Water Resources	Water Supply Demand on Lake Kidogo during construction activities.	Lake Kidogo.	Water levels and quality monitored on a weekly basis. Cease or reduce extraction if lake levels reduce below the nominated trigger level which is to be defined in the ESMP. Identify additional water sources, if necessary.	Developer Pollution Prevention Plan	WR03
Chapter 12 Water Resources	Increased surface water runoff arising from construction activities.	Surrounding water bodies and streams (Mwesa Stream, Kibilizi Stream, Nyabarongo River, Nyabarongo Wetland Area, and Lake Kidogo).	Ensure temporary drainage infrastructure is installed within the Airport Area. Avoid use of scaffolding and temporary structures in surrounding streams and rivers.	Developer Stormwater Management Plan Developer Pollution Prevention Plan	WR01 STW01 STW02 STW04

Table 7-1: ESIA Commitments Register

ESIA Chapter Reference	Impact	Receptor	ESIA Mitigation/ Management/ Monitoring Measure	Developer ESMS Document Allocation	C-ESMP Management Control IDs
			Ensure that bridge piers are designed to minimise effects on stream/river flow. Culverts are to be designed to ensure no increased risk of upstream flooding occurs.		
Chapter 13 Geology and Soils	Contamination of soil resources due to unplanned release event (e.g. release of hazardous substance due to spillage or catastrophic tank failure).	Soil resources (other environmental receptors such as water resources, and ecology) as well as human health.	Adoption of management plans (as detailed in the next column). Implementation of procedures and defined schedules for maintenance of assets and ageing asset replacement criteria, in particular for fuel storage and distribution, interceptors, drainage and hazardous material containment measures. Installation of boreholes to assess the potential for shallow perched groundwater to be present, allowing for improvement conceptual understanding of potential pathways for soil contamination.	Developer Pollution Prevention Plan	GS01
Chapter 13 Geology and Soils	Identification of previously unidentified soil contamination.	Soil resources (other environmental receptors such as water resources, and ecology) as well as human health.	Adoption of management plans (as detailed in the next column). Targeted assessment of areas of identified contamination (if identified as an unexpected find or through further site walkover and assessment).	Developer Pollution Prevention Plan	GS02

Table 7-1: ESIA Commitments Register					
ESIA Chapter Reference	**Impact**	**Receptor**	**ESIA Mitigation/ Management/ Monitoring Measure**	**Developer ESMS Document Allocation**	**C-ESMP Management Control IDs**
			Development of unexpected find protocol and education of staff implementing reactive control measures.		
Chapter 13 Geology and Soils	Soil disturbance and loss of topsoil resources.	Soil resources.	Adoption of materials management measures. Control of areas in which vehicle trafficking can occur through the addition of temporary or permanent barricading and application of good industry practice when handling soil resource and trafficking in proximity to soil stripping/stockpiling areas.	Developer Soil Management Plan	SO01
Chapter 14 Archaeology and Cultural Heritage	Destruction of Archaeological sites.	Local communities.	The Chance Finds Procedure provides measures to follow should any archaeological or cultural heritage findings be identified. Should an artefact be identified, all work is to stop and the INMR will be contacted. Relocation of burials, if found, within the Project Area will be done in consultation with the Institute of National Museums of Rwanda (INMR) and the Affected Community, and all the ritual requirements for the relocation will be followed. Consultation with the area elders on requirements needed in case of relocation of human remains.	Developer Cultural Heritage Management Plan	CHM01

Table 7-1: ESIA Commitments Register					
ESIA Chapter Reference	**Impact**	**Receptor**	**ESIA Mitigation/ Management/ Monitoring Measure**	**Developer ESMS Document Allocation**	**C-ESMP Management Control IDs**
Chapter 14 Archaeology and Cultural Heritage	Destruction and exposure of human remains and burials.	Local communities.	Chance Finds Procedure Relocation of burials, if found, within the Project Area will be done in consultation with the Institute of National Museums of Rwanda (INMR) and the Affected Community, and all the ritual requirements for the relocation will be followed. Consultation with the area elders on requirements needed in case of relocation of human remains.	Developer Cultural Heritage Management Plan	CH02
Chapter 15 Landscape and Visual	Impact on form and cover of landscape.	Landscape fabric.	Ensure the development is phased. Positioning of the proposed Water Pipeline above ground. Use of dust suppressant. Consider sympathetic, low rise terminal building designs. Appropriate lighting management. Control of working areas/widths. Restriction on the size and duration of spoil heaps and stockpiles. Concurrent construction and reinstatement process.	Developer Pollution Prevention Plan	LV01

Table 7-1: ESIA Commitments Register					
ESIA Chapter Reference	**Impact**	**Receptor**	**ESIA Mitigation/ Management/ Monitoring Measure**	**Developer ESMS Document Allocation**	**C-ESMP Management Control IDs**
Chapter 15 Landscape and Visual	Impact upon baseline character/characteristics of landscape.	Landscape character.	Ensure the development is phased. Use of dust suppressant. Use of existing tracks and roads. Restrictions on working hours. Restriction on the size and duration of spoil heaps and stockpiles. Control of construction lighting. Concurrent construction and reinstatement.	Developer Pollution Prevention Plan	LV02
Chapter 15 Landscape and Visual	Impact upon visual amenity of settlements.	Surrounding communities including Kinazi, Kayumba, Mwogo, Rilma and Nyamata.	Ensure the development is phased. Use of dust suppressant. Use of existing tracks and roads. Control of working areas/widths. Restriction on the size and duration of spoil heaps and stockpiles. Control of construction lighting. Concurrent construction and reinstatement.	Developer Pollution Prevention Plan	LV03

Table 7-1: ESIA Commitments Register					
ESIA Chapter Reference	**Impact**	**Receptor**	**ESIA Mitigation/ Management/ Monitoring Measure**	**Developer ESMS Document Allocation**	**C-ESMP Management Control IDs**
Chapter 15 Landscape and Visual	Impact upon visual amenity of road users.	Road users on KK-15 Road also referred to as the NR5, DR73 route and DR74 route.	Ensure the development is phased. Use of dust suppressant. Use of existing tracks and roads. Control of working areas/widths. Restriction on the size and duration of spoil heaps and stockpiles. Control of construction lighting. Concurrent construction and reinstatement.	Developer Pollution Prevention Plan	LV04
Chapter 16 Waste Management	Deterioration of soil and water quality resulting from the improper waste storage on site, disposal of waste in unlicensed facilities or using inappropriate disposal methods.	Regional groundwater aquifer systems and surface water bodies.	Salvageable materials will be diverted from disposal where possible. Designated area reserved for bins will be provided. HSE officers will inspect containers for compliance with requirements. Wood cutting will occur in centralised locations to maximise reuse and make collection easier. Hazardous waste will be managed by a licensed waste vendor and will be stored separately. Quantified waste inventory will be prepared. Legal compliance will be met and sufficient capacity available for contractors and facilities will be provided.	Developer Waste Management Plan	WA01 WA02 WA04

Table 7-1: ESIA Commitments Register					
ESIA Chapter Reference	**Impact**	**Receptor**	**ESIA Mitigation/ Management/ Monitoring Measure**	**Developer ESMS Document Allocation**	**C-ESMP Management Control IDs**
			Effective segregation and safeguarding will take place for waste. Detailed plans for routing of traffic transporting waste, in order to minimise impacts on communities will be provided. Training and protection measures to be implemented. Audits by the BAC Environment Officer will be undertaken.		
Chapter 16 Waste Management	Impacts on local communities including loss of land, nuisance, disturbance through increased vehicle movements, indirect impacts as a result of negative impacts on the surrounding environment.	Local communities within the Project Area of Influence.	Salvageable materials will be diverted from disposal where possible. Designated area reserved for bins will be provided. HSE officers will inspect containers for compliance with requirements. Wood cutting will occur in centralised locations to maximise reuse and make collection easier. Hazardous waste will be managed by a licensed waste vendor and will be stored separately. Quantified waste inventory will be prepared. Legal compliance will be met and sufficient capacity available for contractors and facilities will be provided.	Developer Waste Management Plan	WA03

Table 7-1: ESIA Commitments Register					
ESIA Chapter Reference	**Impact**	**Receptor**	**ESIA Mitigation/ Management/ Monitoring Measure**	**Developer ESMS Document Allocation**	**C-ESMP Management Control IDs**
			Effective segregation and safeguarding will take place for waste. Detailed plans for routing of traffic transporting waste, in order to minimise impacts on communities will be provided. Training and protection measures to be implemented. Audits will be undertaken.		
Chapter 16 Waste Management	Improper disposal of waste due to existing waste management facilities being unable to process high volumes of waste arising from the Project.	Local waste management facilities within the Project Area of Influence.	Salvageable materials will be diverted from disposal where possible. Designated area reserved for bins will be provided. HSE officers will inspect containers for compliance with requirements. Wood cutting will occur in centralised locations to maximise reuse and make collection easier. Hazardous waste will be managed by a licensed waste vendor and will be stored separately. Quantified waste inventory will be prepared. Legal compliance will be met and sufficient capacity available for contractors and facilities will be provided.	Developer Waste Management Plan	WA04

Table 7-1: ESIA Commitments Register					
ESIA Chapter Reference	**Impact**	**Receptor**	**ESIA Mitigation/ Management/ Monitoring Measure**	**Developer ESMS Document Allocation**	**C-ESMP Management Control IDs**
			Effective segregation and safeguarding will take place for waste. Detailed plans for routing of traffic transporting waste, in order to minimise impacts on communities will be provided. Training and protection measures to be implemented. Audits will be undertaken.		
Chapter 16 Waste Management	Health related impacts on employees of the Project as a result of improper handling, storage and disposal of waste.	Proposed Project Employees.	Salvageable materials will be diverted from disposal where possible. Designated area reserved for bins will be provided. HSE officers will inspect containers for compliance with requirements. Wood cutting will occur in centralised locations to maximise reuse and make collection easier. Hazardous waste will be managed by a licensed waste vendor and will be stored separately. Quantified waste inventory will be prepared. Legal compliance will be met and sufficient capacity available for contractors and facilities will be provided.	Developer Waste Management Plan	WA05

Table 7-1: ESIA Commitments Register					
ESIA Chapter Reference	**Impact**	**Receptor**	**ESIA Mitigation/ Management/ Monitoring Measure**	**Developer ESMS Document Allocation**	**C-ESMP Management Control IDs**
			Effective segregation and safeguarding will take place for waste. Detailed plans for routing of traffic transporting waste, in order to minimise impacts on communities will be provided. Training and protection measures to be implemented. Audits will be undertaken.		
Chapter 16 Waste Management	Improper disposal of waste leading to the release of substances which may be harmful to the environment impacting upon local flora and fauna and migrating fauna.	Local flora and fauna and migrating fauna.	Salvageable materials will be diverted from disposal where possible. Designated area reserved for bins will be provided. HSE officers will inspect containers for compliance with requirements. Wood cutting will occur in centralised locations to maximise reuse and make collection easier. Hazardous waste will be managed by a licensed waste vendor and will be stored separately. Quantified waste inventory will be prepared. Legal compliance will be met and sufficient capacity available for contractors and facilities will be provided.	Developer Waste Management Plan	WA06

Table 7-1: ESIA Commitments Register					
ESIA Chapter Reference	**Impact**	**Receptor**	**ESIA Mitigation/ Management/ Monitoring Measure**	**Developer ESMS Document Allocation**	**C-ESMP Management Control IDs**
			Effective segregation and safeguarding will take place for waste. Detailed plans for routing of traffic transporting waste, in order to minimise impacts on communities will be provided. Training and protection measures to be implemented. Audits will be undertaken.		
Chapter 17 Resource Efficiency	Increase fuel and energy demand associated with construction vehicles, equipment and welfare facilities.	Local communities and land users.	Implement staff training. Use of equipment and machinery that is in good condition and perform regular maintenance. Ensure that machinery is not kept running while in use. Identify, regularly measure and monitor the principal energy uses associated with both construction vehicles and equipment onsite. Define and regularly review performance targets adjusted to account for the type of construction activity. Adoption of transport measures such as regular inspection of vehicles, adoption of speed restrictions to optimise fuel efficiency of vehicles.	Developer Traffic Management Plan (for fuel demand) Overarching Developer C-ESMP	TR11 (fuel use)

Table 7-1: ESIA Commitments Register

ESIA Chapter Reference	Impact	Receptor	ESIA Mitigation/ Management/ Monitoring Measure	Developer ESMS Document Allocation	C-ESMP Management Control IDs
			Regularly compare energy use with performance targets to identify where action should be taken to reduce energy use.		
Chapter 17 Resource Efficiency	Increase water demand associated with construction, vehicles, equipment and welfare facilities.	Local communities and land users.	Implement staff training. Identify, regularly measure and monitor the principal flow within construction works. Define and regularly review performance targets adjusted to account for the type of construction activity. Regularly compare water flows with performance targets to identify where action should be taken to reduce energy use.	Developer Pollution Prevention Plan Overarching Developer C-ESMP	WR03
Chapter 17 Resource Efficiency	Increase material demand associated with earthworks and construction of the Project.	Local communities and land users.	Adoption of Waste Management Plan. Sourcing of materials that have low embodied energy use, are locally sourced, are durable etc. Adoption of a Traffic Management Plan to minimise traffic movements associated with importation of building materials, concrete and aggregate from offsite sources.	Developer Waste Management Plan Developer Traffic Management Plan Overarching Developer C-ESMP	WA01 to WA06 TR01 TR02

Table 7-1: ESIA Commitments Register					
ESIA Chapter Reference	**Impact**	**Receptor**	**ESIA Mitigation/ Management/ Monitoring Measure**	**Developer ESMS Document Allocation**	**C-ESMP Management Control IDs**
Chapter 18 Socio-economics	Land acquisition and involuntary resettlement impacts (Airport Area).	Property owners and land occupiers/users with assets or access to assets.	Conduct an 'outcomes audit' on communities relocated from the Airport Area.	Supplemental Resettlement Plan (if required)	N/A
Chapter 18 Socio-economics	Land speculation from the Expressway.	Existing land-owners/occupiers. Government of Rwanda (RTDA).	BAC will use its best endeavours to ensure that a cut-off date for compensation purposes is set as soon as possible, by RTDA, and disseminated widely, along with a map of the Expressway route showing the 44 m wide reservation to be expropriated, in Kigali as well as in communities located close to the Expressway route.	Resettlement Action Plan or Livelihood Restoration Plan	N/A
Chapter 18 Socio-economics	Land acquisition and involuntary resettlement impacts (the Expressway).	Property owners and land occupiers/users with assets or access to assets in the Expressway reservation area.	Support to RTDA in preparing and implementing a PS5-compliant Resettlement Action Plan or a Livelihood Restoration Plan (as necessary).	Resettlement Action Plan or Livelihood Restoration Plan	N/A
Chapter 18 Socio-economics	Land acquisition and involuntary resettlement impacts. (Upgraded quarry road and the water abstraction facility and Water Pipeline).	Property owners and land occupiers/users with assets or access to assets in located in the land to be acquired.	BAC will investigate the land take situation for the upgraded quarry road the water abstraction facility and Water Pipeline. Should it be found that land was acquired, and compensation paid, in a manner that is not compliant with PS 5 requirements then any remedial measures, required for PAPs, will be incorporated into the Airport Area	Supplemental Resettlement Plan	N/A

Table 7-1: ESIA Commitments Register					
ESIA Chapter Reference	**Impact**	**Receptor**	**ESIA Mitigation/ Management/ Monitoring Measure**	**Developer ESMS Document Allocation**	**C-ESMP Management Control IDs**
			Supplemental Resettlement Plan; if such a Plan is required. Alternatively, a bespoke Supplemental Resettlement Plan may be prepared for the upgraded quarry road and the water abstraction facility and Water Pipeline.		
Chapter 18 Socio-economics	Employees being exposed to risks that labour and working conditions fall short of IFC PS2 requirements.	Employees and contractors.	Development of a Human Resources Policy addressing all IFC PS2 requirements deemed applicable to the Project (including, no use of forced and child labour; provisions in terms of workers employed by third parties and supply chain). Provision of a workers' Grievance Mechanism. Development of an Employee Handbook (or equivalent) addressing all IFC PS2 requirements on working conditions and management of worker relationships not already incorporated in-to the existing suite of human resources documentation. Revisions, as necessary, to key documents provided to employees, to provide information on BAC/EPC Contractor obligations and employee rights regarding the role of Workers' Organisations (and collective bargaining if in place) and the	Developer Labour, Working Conditions and Employment Management Plan	LWC&E01 to LWC&E12

Table 7-1: ESIA Commitments Register					
ESIA Chapter Reference	**Impact**	**Receptor**	**ESIA Mitigation/ Management/ Monitoring Measure**	**Developer ESMS Document Allocation**	**C-ESMP Management Control IDs**
			principle of BAC/Contractor non-interference with workers' rights to form or join workers' organisations. Ensure that OHS arrangements are compliant with IFC PS2 are in place. For catering facilities provided onsite, ensure that those are managed and maintained in compliance with the local legislation, and good international practice (i.e. regular controls of food/facilities hygiene; Training of the catering staff; Establishment of rodent and vector management/controls, Prohibition on feeding of wildlife, etc.).		
Chapter 18 Socio-economics	Population Influx.	Local residents and communities.	Managing expectations, outside the local area, by reducing/removing any perception that a prospective in-migrant may hold that he/she will benefit from BAC activities. Dissemination of information, via media announcements at regional and national-level, of BAC/EPC Contractor's policy on local recruitment.	Developer Labour, Working Conditions and Employment Management Plan	LWC&E14 and LWC&E16
Chapter 18 Socio-economics	Economy, Employment and Livelihood Impacts: Job creation and equity.	Local residents and communities.	Declared priority of local hiring, meeting targets for local recruitment by both BAC and the EPC contractor. BAC/EPC Contractor will manage employment expectations by	Developer Labour, Working Conditions and Employment	LWC&E13 to LWC&E16

Table 7-1: ESIA Commitments Register

ESIA Chapter Reference	Impact	Receptor	ESIA Mitigation/ Management/ Monitoring Measure	Developer ESMS Document Allocation	C-ESMP Management Control IDs
			explaining the number and type of opportunities to local communities in advance. Advertising job vacancies in rural communities. Recruitment points established in key locations. Clear job descriptions provided in advance of recruitment which will explain the skills required for each post. Transparent and non-discriminatory recruitment procedure, with respect to ethnicity, sex, sexuality, or disability. All workers will have contracts describing their job description, conditions of work and will have the contents explained to them.	Management Plan	
Chapter 18 Socio-economics	Economy, Employment and Livelihood Impacts: Local-level inflation.	Local residents and communities.	There are no realistic mitigation measures within the control of BAC and/or the EPC Contractor that can manage local-level inflation.	N/A	N/A

Table 7-1: ESIA Commitments Register

ESIA Chapter Reference	Impact	Receptor	ESIA Mitigation/ Management/ Monitoring Measure	Developer ESMS Document Allocation	C-ESMP Management Control IDs
Chapter 18 Socio-economics	Economy, Employment and Livelihood Impacts: Local level loss of existing employees.	Local residents and communities.	There are no realistic mitigation measures within the control of BAC and/or the EPC Contractor that can manage avoid/prevent or reduce the impact of loss of existing employees on existing public or private sector organisations/ enterprises.	N/A	N/A
Chapter 18 Socio-economics	Economy, Employment and Livelihood Impacts: Loss of construction jobs.	Local residents and communities.	Workers are aware that: Their contract is temporary with a specified end date.	Developer Labour, Working Conditions and Employment Management Plan	LWC&E02
Chapter 18 Socio-economics	Economy, Employment and Livelihood Impacts: Loss of access.	Local residents and communities.	Identify routes that will require closure. Undertake a survey of users (covering such factors as age, sex, starting location, intended destination and trip purpose for each user). Discus options to 'replace' lost access with local governments; and, to extent feasible. Replace lost access.	Developer Traffic Management Plan	TR01 to TR04
Chapter 18 Socio-economics	Food Security and Livelihoods Impacts: Threats to water/fisheries-based livelihoods.	Communities and households dependent on water/fisheries-based livelihoods.	Application of the mitigation measures presented in Chapter 12: Water Resources is required.	Developer Pollution Prevention Plan	WR01 to WR04

Table 7-1: ESIA Commitments Register

ESIA Chapter Reference	Impact	Receptor	ESIA Mitigation/ Management/ Monitoring Measure	Developer ESMS Document Allocation	C-ESMP Management Control IDs
Chapter 18 Socio-economics	Food Security and Livelihoods Impacts: Bee-keeping/honey production.	Households in certain villages dependent on bee-keeping/honey production.	Measures to control dust. BAC/EPC Contractor will identify any beekeepers whose hives are within 300 m of the Expressway or an access route to the Expressway before the start of the honey production season. These beekeepers will be asked to move their hives (both mobile hives and stationary hives) a suitable distance (at least 300 metres) from the Expressway and/or access routes for the season. If necessary, BAC/EPC Contractor will aid the relocation. BAC will inform the bee-keepers about using the community-level Grievance Mechanism to submit any complaints regarding BAC/EPC Contractor actions considered by the complainant to have adversely affected bee-keeping/honey production.	Developer Pollution Prevention Plan Resettlement Action Plan	AQ01
Chapter 18 Socio-economics	Food Security and Livelihoods Impacts: Increased livestock casualties.	Communities and households' dependent on livestock-based livelihoods.	Series of mitigation measures as presented in Chapter 8: Transport and Traffic.	Developer Traffic Management Plan	TR05

Table 7-1: ESIA Commitments Register

ESIA Chapter Reference	Impact	Receptor	ESIA Mitigation/ Management/ Monitoring Measure	Developer ESMS Document Allocation	C-ESMP Management Control IDs
Chapter 18 Socio-economics	Community Health Safety and Security Impacts: Risk of an increase in STIs and other non-communicable diseases.	Host local communities. Workforce.	Establishing a clinic to manage minor ailments of construction workers and operate a personnel health programme. A worker education and awareness programme regarding the risks and prevention measures associated with STIs, including HIV/AIDS. Medical screening of all employees prior to hiring and then on a regular basis. Prepare, approve and implement an HIV/AIDS Policy.	Developer Community Health, Safety and Security Management Plan	CHSS01 to CHSS11
Chapter 18 Socio-economics	Community Health Safety and Security Impacts: Health impacts resulting from changes in air quality (1) and changes to Water Re-sources (2).	Local Communities.	Use of low emission vehicles for all BAC-related transport purposes, including buses for workers travelling to/from the Construction Camp. Regular vehicle maintenance with monitoring and enforcement of emission standards. In case of vehicle-related spills a rapid response team will be formed, trained and be on standby to be mobilised in the event of spillage of hazardous materials. Spill response equipment (absorbents etc.) will be available in all vehicles carrying hazardous cargo.	Developer Pollution Prevention Plan	AQ01 WR01 to WR04

Table 7-1: ESIA Commitments Register

ESIA Chapter Reference	Impact	Receptor	ESIA Mitigation/ Management/ Monitoring Measure	Developer ESMS Document Allocation	C-ESMP Management Control IDs
			Application of all mitigation measures as per Chapter 12: Water Resources.		
Chapter 18 Socio-economics	Community Health Safety and Security Impacts: Increase in road traffic accidents.	Local communities.	Series of mitigation measures as presented in Chapter 8: Transport and Traffic.	Developer Traffic Management Plan	TR06
Chapter 18 Socio-economics	Community Health Safety and Security Impacts: Potential for conflicts between security providers and the locals.	Local communities.	Implementation of the 'Voluntary Principles on Security and Human Rights'. During construction (and operations), due diligence will be applied to selection of security providers, rules of engagement will be devised, and training provided to all personnel. Performance will be monitored and audited periodically. Use of force will not be sanctioned except when used for preventive and defensive purposes in proportion to the nature and extent of the threat. Safety signage will be provided in both Kinyarwanda and English. Ensuring fencing of active and inactive construction sites until rehabilitated or the threat posed by the sites is removed by some other means. Sensitisation of school children under 12 years of age in nearby schools.	Developer Community Health, Safety and Security Management Plan	CHSS12 to CHSS19

Table 7-1: ESIA Commitments Register					
ESIA Chapter Reference	**Impact**	**Receptor**	**ESIA Mitigation/ Management/ Monitoring Measure**	**Developer ESMS Document Allocation**	**C-ESMP Management Control IDs**
Chapter 18 Socio-economics	Potential damage to community infrastructure and utility services.	Local residents and communities. Local infrastructure.	Application of the mitigation measures proposed under 'Influx' will help to mitigate impacts on infrastructure and utility services. Working Method Statements, relating to infrastructure/utilities that include measures to protect the integrity of the third-party services and which are acceptable to the service operator/s. Any damage to third-party services should be repaired promptly in consultation with the service operator. Any planned diversion of services (for example, electricity or water) will be communicated to local government authorities and villages in advance.	Developer Community Health, Safety and Security Management Plan	CHSS20

APPENDIX 1
DEVELOPER CULTURAL HERITAGE MANAGEMENT PLAN

Intended for
Bugesera Airport Company Limited

Date
February 2018

Project Number
1700000222-001

NEW BUGESERA INTERNATIONAL AIRPORT
DEVELOPER CULTURAL HERITAGE MANAGEMENT PLAN

Bugesera Airport Company

NEW BUGESERA INTERNATIONAL AIRPORT
DEVELOPER CULTURAL HERITAGE MANAGEMENT PLAN

Project No.	**1700000222-001**
Issue No.	**1**
Date	**February 2018**
Made by	**Ellie Bicknell/Marylise Schmid**
Checked by	**Ailish Catriona Enker**
Approved by	**Denise Wright**

Made by: 

Checked/Approved by: 

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File Name	Cultural Heritage Management Plan
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Original Author	
Creation Date	
Approved By	
Approval Date	
Change Record Number	

Revision	Revision Date	Authors	Approved By	Revision Notes

1. INTRODUCTION

1.1 Purpose

The Bugesera Airport Company Limited (BAC or the "Developer") has overall responsibility for the delivery of the New Bugesera International Airport Project, (the "Project"). The Engineering, Procurement and Construction (EPC) Contractor, Mota-Engil Engenharia e Construção Africa - Rwanda (MEECARW), and its sub-contractors (collectively, the "Contractor") is responsible for the construction of the Project.

This document is the Developer Cultural Heritage Management Plan for the construction of the Project. This Management Plan is appended to the overarching Construction Environmental and Social Management Plan (Developer C-ESMP) and, as such, must be read in conjunction with it. The purpose of this Management Plan is to avoid or minimise the environmental and/or social risks and impacts of the Project in relation to cultural heritage. To fulfil this purpose, this Management Plan will:

- define the scope of cultural heritage management and set out applicable management interfaces;
- define the responsibilities for its implementation;
- outline the applicable Project Standards relevant to cultural heritage management;
- define the management and monitoring controls related to traffic (primarily based on commitments made in the Project ESIA); and
- sign-post to supporting materials and information.

1.2 Application

The management and monitoring controls set out in this Management Plan apply to all Project construction activities, including those of the Contractor and its sub-contractors.

This Management Plan will be reviewed every year as a minimum to determine whether any changes or updates are required to the Plan unless a more frequent update is required to reflect changing Project design or procedures.

1.3 Authority and Management

The Developer's Health, Safety and Environment (HSE) Management is the custodian of this Developer Cultural Heritage Management Plan. Any requests for changes to this Management Plan must be addressed to this person and will be subjected to the appropriate review and approval processes as outlined in the Management of Change Procedure described in the C-ESMP.

2. SCOPE

2.1 Scope of this Developer Cultural Heritage Management Plan

This Management Plan is applicable to the Project construction phase. It covers the archaeological and cultural heritage considerations arising from construction activities, including ground intervention and excavation, which may significantly impact on archaeological and cultural heritage assets.

2.2 Overlaps with Other Management Plans

This Management Plan is part of the suite of Developer C-ESMPs developed for the Project, as follows:

- Developer Labour, Working Conditions and Employment Management Plan;
- Developer Waste Management Plan;
- Developer Biodiversity Management Plan;
- Developer Community Health, Safety and Security Plan;
- Developer Stormwater Management Plan;
- Developer Pollution Prevention Plan;
- Developer Soil Management Plan;
- Developer Traffic Management Plan; and
- **Developer Cultural Heritage Plan.**

Figure 2.1 below illustrates the relationship between the Developer Environmental and Social Management System (Developer ESMS), the C-ESMP and appended suite of C-ESMPs, the Developer Overarching Operation Phase ESMP (Developer O-ESMP) and other Operation Phase ESMPs (O-ESMPs), the Contractor Construction Implementation Plans (CIPs) and the Contractor Operation Implementation Plans (OIPs).

The Contractor CIPs and OIPs will align with the Developer C-ESMPs and O-ESMPs, respectively. The OIPs and O-ESMPs will be developed at a later stage of the Project.

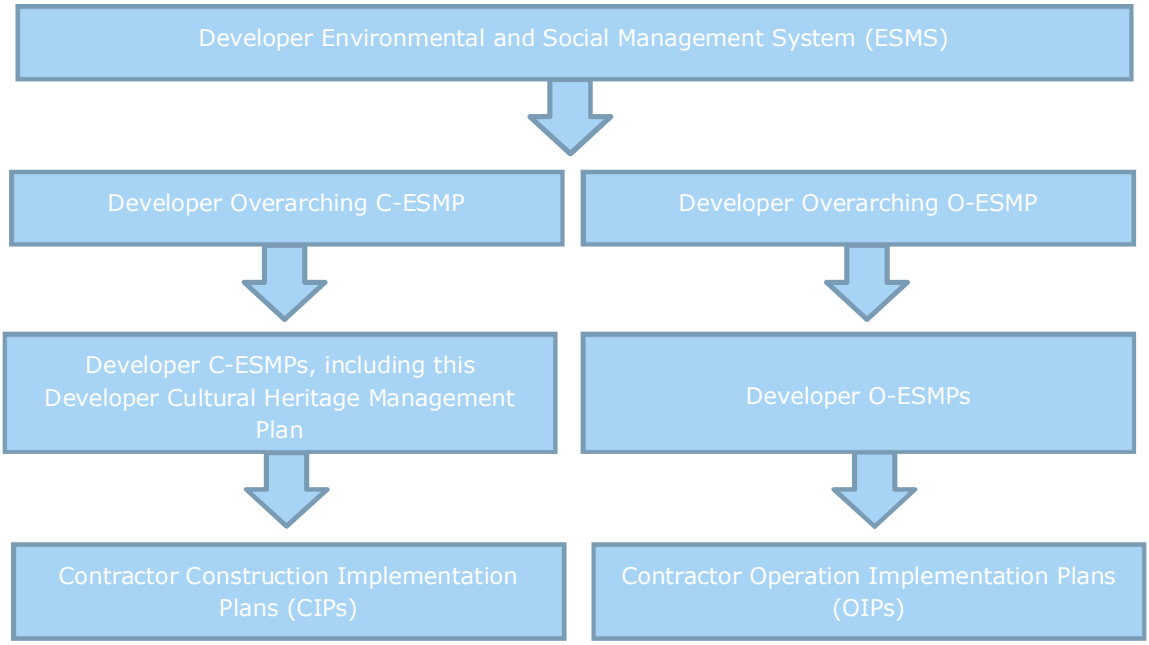

Figure 2-1: Environmental and Social Management Flowchart

3. RESPONSIBILITES

The Developer has overall responsibility for the delivery of the Project. The Contractor is responsible for the construction of the Project. Responsibility for implementation of the management and monitoring controls set out in this Management Plan are split between Developer and Contractor as detailed in tables provided in Section 5 and Section 6.

The overarching roles and responsibilities for implementation of the C-ESMPs is provided in the overarching Developer C-ESMP.

The Developer is responsible for:

- Ensuring adherence to this Management Plan; and
- Ensuring that the evaluation of the management and monitoring controls set out in this Management Plan takes place to ensure they are effective.

The Contractor is responsible for:

- Adhering to this Management Plan; and
- Ensuring alignment of the relevant CIP to this Management Plan and providing more detail on how controls will be implemented and by whom.

4. PROJECT STANDARDS

A list of applicable standards for the construction phase, including International law, Lender standards and national legislation is presented in the overarching Developer C-ESMP. There are no specific Project Standards for cultural heritage management that need to be repeated or highlighted here.

5. MANAGEMENT CONTROLS

5.1 Environmental and Social Aspects and Impacts

This section includes information on how to protect archaeological and cultural heritage assets during construction activities. The following activities have the potential to impact archaeology and cultural heritage during the construction phase:

- Ground intervention activities (e.g. cut and fill);
- The construction of the Expressway and widening of the quarry road;
- Construction of the Proposed Project; and
- Excavation activities.

5.2 Implementation of Management Controls

Management and mitigation measures (primarily derived from the Project ESIA) are elaborated on and will be implemented through the Key Management Controls as described in Table 5.1.

Each Management Control has been assigned a unique identification number (ID) to enable traceability and tracking from source of origin to implementation and vice versa. This is to demonstrate transparency in the environmental and social management process. The same Management Control IDs will be referenced by the Contractor in the relevant CIPs to demonstrate alignment with the Developer's C-ESMPs.

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
CH01	Destruction of Archaeological sites	a) Develop a Chance Finds Procedure (including induction of all Contractor and sub-contractor personnel). b) Stop work in the event of a chance find being encountered and notify the Developer (as detailed in the Chance Finds Procedure). c) Notify the Institute of National Museums of Rwanda (INMR) should a cultural heritage object be identified.	Contractor (CH01a-b) Developer (CH01c)	• Inclusion of a Chance Finds Procedure in a relevant CIP • Training records • Chance Find reports • Complaints Register in the Grievance Mechanism
CH02	Destruction and Exposure of Human Remains and Burials	a) Develop a Chance Finds Procedure (including induction of all Contractor and sub-contractor personnel); b) Stop work in the event of a chance find being encountered and notify the Developer (as detailed in the Chance Finds Procedure). c) In the event that Cultural Heritage is encountered in the Project Area, it will be handled in a sensitive manner during any interactions with the Affected Community. d) Notify the INMR should human remains be identified. e) Relocation of burials, if found within the Project Area, will only be undertaken in consultation with the INMR and the Affected Community (in particular the area elders), and the Developer will ensure the Contractor follows all ritual requirements during relocation activities.	Contractor (CH02a-c/e) Developer (CH02d-e)	• Inclusion of a Chance Finds Procedure in a relevant CIP • Training records • Chance Find reports • Complaints Register in the Grievance Mechanism

6. MONITORING CONTROLS

6.1 Definition of Monitoring

For the purposes of this Project and this Management Plan, monitoring is defined as a repeated action undertaken to determine the:

- compliance against threshold targets (e.g. reviewing Chance Finds reports and Grievance Register); OR
- performance of a management control (e.g. reviewing Chance Finds reports and Grievance Register).

Monitoring does not therefore include one off actions, for example, undertaking specific surveys/assessments, adhering to ongoing standards/rules/prohibitions, installation of equipment for protection/preventative purposes, training, maintaining equipment and vehicles. These are considered to be management controls.

6.2 Implementation of Monitoring Controls

The monitoring controls to be implemented during construction to ensure compliance with the Project Standards are described in Table 6-1 below. This includes Key Performance Indicators (KPIs) to help assess the efficacy of implementation. As indicated in the Table 6-1, all monitoring controls will be recorded and/or reported.

In the event that monitoring results identify non-conformance with Project Standards, these will be reported, investigated and corrective actions identified and implemented.

Table 6-1: Key Monitoring Controls

ID	Topic	KPI	Methods	Periodicity	Location	Responsible Party
CHM01	Chance finds	**KPI:** Number of recorded non-compliances against the Chance Finds Procedure **Target:** Minimise number of reported non-compliances **Threshold:** Objective is zero. If non-compliances are recorded, target is to eliminate from next recording period.	• Review of Chance Finds reports.	Six-monthly	Project Area	Contractor
CHM02	Grievances	**KPI:** Number of recorded cultural heritage related grievances from local communities (as recorded through the Grievance Mechanism in the Grievance Register). **Target:** Minimise cultural heritage related community grievances. **Threshold:** Objective is zero. If non-compliances are recorded, investigate any grievances in relation to cultural heritage (e.g. desecration, disturbance, removal, trafficking of artefacts) and take appropriate remedial action. Provide rapid response to any grievances from local communities in relation to inappropriate conduct personnel in relation to cultural sensitivities. Investigate and take appropriate action within timeframe specified in the Project's Grievance Mechanism.	• Review of the Grievance Register in the Grievance Mechanism for any cultural heritage related complaints from local communities. • All grievances logged, responded to and closed out.	Weekly	Project Area	Developer

APPENDIX 2
DEVELOPER LABOUR, WORKING CONDITIONS & EMPLOYMENT MANAGEMENT PLAN

Intended for
Bugesera Airport Company Limited

Date
February 2018

Project Number
1700000222-001

NEW BUGESERA INTERNATIONAL AIRPORT
DEVELOPER LABOUR, WORKING CONDITIONS AND EMPLOYMENT MANAGEMENT PLAN

Bugesera Airport Company

NEW BUGESERA INTERNATIONAL AIRPORT
DEVELOPER LABOUR, WORKING CONDITIONS AND EMPLOYMENT MANAGEMENT PLAN

Project No.	**1700000222-001**
Issue No.	**1**
Date	**February 2018**
Made by	**Katya Sladkova / Ron Bisset**
Checked by	**Marylise Schmid / Ailish Catriona Enker**
Approved by	**Denise Wright**

Made by: Katya Sladkova / Ron Bisset

Checked/Approved by: 

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DOCUMENT CONTROL

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Approval Date	
Change Record Number	

Revision	Revision Date	Authors	Approved By	Revision Notes

1. INTRODUCTION

1.1 Purpose

The Bugesera Airport Company Limited (BAC, the "Developer") has overall responsibility for the delivery of the New Bugesera International Airport Project, (the "Project"). The Engineering, Procurement and Construction (EPC) Contractor, Mota-Engil Engenharia e Construção Africa - Rwanda (MEECARW) and its sub-contractors (collectively, the "Contractor") is responsible for the construction of the Project.

This document is the Developer Labour, Working Conditions and Employment Management Plan (LWC&E MP) for the construction phase of the Project. This Management Plan is appended to the overarching Construction Environmental and Social Management Plan (Developer C-ESMP) and as such must be read in conjunction with it. The purpose of this Management Plan is to avoid or minimise risks and impacts of the Project in the area of LWC&E. To fulfil this purpose, this Management Plan will:

- define the scope of LWC&E management;
- define the responsibilities for its implementation;
- outline the applicable Project Standards relevant to LWC&E management;
- define the management and monitoring controls related to LWC&E (primarily based on commitments made in the Project ESIA); and;
- sign-post to supporting materials and information.

1.2 Application

The management and monitoring controls set out in this Management Plan apply to all Project construction activities, including those of the Contractor.

This Management Plan will be reviewed every year as a minimum to determine whether any changes or updates are required to the Plan unless a more frequent update is required to reflect changing Project design or procedures.

1.3 Authority and Management

The Developer's Health, Safety and Environment (HSE) Management is the custodian of this Developer LWC&E MP. Any requests for changes to this Management Plan must be addressed to this person and will be subjected to the appropriate review and approval processes as outlined in the Management of Change Procedure described in the C-ESMP.

2. SCOPE

2.1 Scope of this Management Plan

This Management Plan covers the actions and measures necessary for the control of risks and impacts associated with labour, working conditions and employment, as well for ensuring compliance with key labour requirements, including International Labour Organization conventions and International Finance Corporation (IFC) Performance Standard 2. This Labour, Working Conditions and Employment Management Plan (LWC&E MP) details specific management and monitoring control measures to be implemented by the Developer and the Contractor.
Overlaps with Other Management Plans

This Management Plan is part of the suite of Developer C-ESMPs developed for the Project, as follows:

- **Developer Labour, Working Conditions and Employment Management Plan;**
- Developer Waste Management Plan;
- Developer Biodiversity Management Plan;
- Developer Community Health, Safety and Security Plan;
- Developer Stormwater Management Plan;
- Developer Pollution Prevention Plan;
- Developer Soil Management Plan;
- Developer Traffic Management Plan; and
- Developer Cultural Heritage Plan.

Figure 2-1 below illustrates the relationship between the Developer Environmental and Social Management System (Developer ESMS), the Developer C-ESMP and the appended suite of C-ESMPs, the Developer Overarching Operation Phase ESMP (Developer O-ESMP) and other Operation Phase ESMPs (O-ESMPs), the Contractor Construction Implementation Plans (CIPs) and the Contractor Operation Implementation Plans (OIPs).

The Contractor CIPs and OIPs will align with the Developer C-ESMPs and O-ESMPs, respectively. The OIPs and O-ESMPs will be developed at a later stage of the Project.

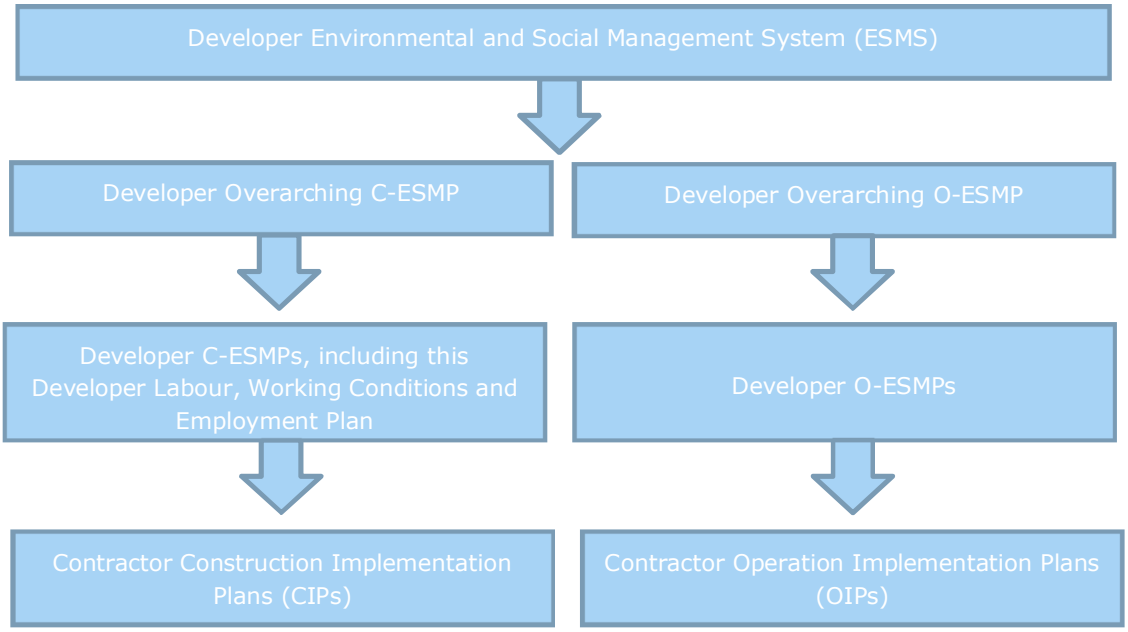

Figure 2-1: Environmental and Social Management Flowchart

3. RESPONSIBILITES

The Developer has overall responsibility for the delivery of the Project. The Contractor is responsible for the construction of the Project. Responsibility for implementation of the management and monitoring controls set out in this Management Plan are split between Developer and Contractor as detailed in tables provided in Section 5 and Section 6.

The overarching roles and responsibilities for implementation of the C-ESMPs are summaries provided in the overarching Developer C-ESMP.

The Developer is responsible for:

- Ensuring adherence to this Management Plan; and
- Ensuring that the evaluation of the management and monitoring controls set out in this Management Plan takes place to ensure they are effective.

The Contractor is responsible for:

- Adhering to this Management Plan; and
- Ensuring alignment of the relevant CIP to this Management Plan and providing more detail on how controls will be implemented and by whom.

4. PROJECT STANDARDS

A list of applicable standards for the construction phase, including International law, Lender standards and national legislation is presented in the overarching Developer C-ESMP. There are no specific Project Standards for traffic management that need to be repeated or highlighted here.

5. MANAGEMENT CONTROLS

5.1 Environmental and Social Aspects and Impacts

This section includes information on how to manage labour, working conditions and employment during the Project construction phase. The Project construction activities have the potential to impact labour, working conditions and employment during the construction phase in the following ways:

- Potential use of child labour and threat to educational attainment;
- A need to manage labour retrenchment resulting in a conflict between the Developer and Contractor personnel/workers (schedule blockages, stoppages etc.);
- Potential discrimination against migrant labour, if any;
- Labour and welfare conditions on site;
- Occupational health and safety;
- Benefits - Creation of new temporary and permanent direct jobs; and
- Benefits - Local skills development through job-related training.

5.2 Implementation of Management Controls

Management and mitigation measures (primarily derived from the Project ESIA) are elaborated on and will be implemented through the Key Management Controls as described in Table 5.1.

Each Management Control has been assigned a unique identification number (ID) to enable traceability and tracking from source of origin to implementation and vice versa. This is to demonstrate transparency in the environmental and social management process. The same Management Control IDs will be referenced by the Contractor in the relevant CIPs to demonstrate alignment with the Developer's C-ESMPs.

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
LWC&E 01	Employees being exposed to risks when labour and working conditions fall short of IFC PS2 requirements – in relation to HR policy	a) Develop a Human Resources Policy addressing the applicable IFC PS2 and containing, at a minimum, high-level 'mission' statements on the following: • No harassment and discrimination; • Collective bargaining; • Workers' organisations; • Retrenchment provisions; • Intention to hire locally; • No child/forced labour; and • Migrant, third parties' and supply chain workers' rights. b) The Policy is to be cascaded down to the Contractor's level.	Developer	• HR Policy in place
LWC&E 02	Employees being exposed to risks when labour and working conditions fall short of IFC PS2 requirements in relation to employment agreements	Fully comply with the requirements of labour legislation of Rwanda, including: • Formalisation of work relations (all employees have written contracts describing their job position and conditions of work; all provisions of the contracts clearly explained to them); • Overtime/maternity leave/sick leave, etc. paid appropriately; and • Minimum wage level is met, etc.	Developer and Contractor (each responsible for their own employees)	• Employment contracts in place • Payment records
LWC&E 03	Employees being exposed to risks when labour and working conditions fall short of IFC PS2 requirements in relation to grievances	Ensure a functioning Workers' Grievance Mechanism (WGM) for the Project is in place that would address concerns promptly, using an understandable and transparent process that provides timely feedback to those concerned, without any retribution. The mechanism should also allow for anonymous complaints to be raised and addressed.	Developer and Contractor (each responsible for their own employees)	• WGM written procedure in place; • Induction records; • Register of workers' grievances; • Inspection records.

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
LWC&E 04	Employees being exposed to risks when labour and working conditions fall short of IFC PS2 requirements in relation to employee benefits	a) Develop an Employee Handbook (or equivalent) addressing all IFC PS2 requirements on working conditions and management of worker relationships not already incorporated into the existing suite of human resources documentation. b) The Employee Handbook is to be shared with the Contractor.	Developer or Contractor	• Employee Handbook in place
LWC&E 05	Employees being exposed to risks when labour and working conditions fall short of IFC PS2 requirements in relation to working principles	a) Ensure that all new recruits undergo induction and refresher training activities to ensure that they have the necessary understanding and knowledge levels for their jobs. b) As part of the induction, make the Project employees familiar with the following documents/principles: – Environmental and Social Policy; – Human Resources Policy; – Employee Handbook; – WGM Procedure; – Rules of Work in The Work, Jobsite and Social Facilities; – Occupational Health & Safety Policy; – Chance Finds Procedure; – Minimising energy consumption; – Wildlife sensitivity to disturbance. c) Ensure that induction materials are easily understandable for all Project workers in terms of their contents and language used.	Developer and Contractor (each responsible for their own employees)	• Induction records • Induction slides (in both Kinyarwanda and English) • 'Induction' documents in place (in both Kinyarwanda and English)

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
LWC&E 06	Employees being exposed to risks when labour and working conditions fall short of IFC PS2 requirements in relation to OHS	Ensure that Occupational Health & Safety (OHS) management and operational controls are in place through continuous implementation of an Occupational Health & Safety Policy, overarching Health and Safety Plan and a series of topic-specific 'daughter' plans, procedures and supporting documents. Review and, as necessary, revise these OHS management tools to ensure full compliance with IFC PS2.	Developer and Contractor (each responsible for their own employees)	• Internal audits' records; • OHS statistics; • Inspection records; • OHS training records; • H&S Plan. •
LWC&E 07	Employees being exposed to risks when labour and working conditions fall short of IFC PS2 requirements in relation to welfare provisions	a) For catering facilities provided onsite, ensure that those are managed and maintained in compliance with the local legislation, and good international practice, including, at a minimum, the following: – Regular controls of food/facilities hygiene; – Training of the catering staff; – Establishment of rodent and vector management/controls; and – Prohibition on feeding of wildlife.	Contractor	• Internal audits' records; • Inspection records.
LWC&E 08	Child labour	Undertake careful ID check upon start of employment to ensure that child labour is not used.	Developer and Contractor (each responsible for their own employees)	• Copies of workers' IDs
LWC&E 09	Forced labour	Ensure that forced labour is not used, which consists of any work or service not voluntarily performed that is exacted from an individual under threat of force or penalty. This covers any kind of involuntary or compulsory labour, such as indentured labour, bonded labour, or similar labour-contracting arrangements. Ensure that trafficked persons are not employed.	Developer and Contractor (each responsible for their own employees)	• Employment contracts for all workers in place • Only copies of workers' personal documents are kept by the employer

Table 5-1: Key Management Controls				
ID	**Topic/Aspect**	**Control Description**	**Responsible Party**	**Means of Verification**
LWC&E 10	Retrenchment	In case of collective dismissals/retrenchment are planned, undertake the following in compliance with the requirements of PS2: • Undertake analysis of alternatives to retrenchment; • Develop an IFC-compliant retrenchment plan; and • Ensure that workers receive notice of dismissal and severance payments mandated by law and collective agreements in a timely manner.	Developer and Contractor (each responsible for their own employees)	• Results of analysis of alternatives • Retrenchment Plan • Notices'/payments' records.
LWC&E 11	Workers engaged by third parties	a) Make commercially reasonable efforts to ascertain that third parties who engage workers are reputable and legitimate enterprises and have an appropriate management system in place that allows them to operate in a manner consistent with the requirements of IFC PS 2[1]. If possible, make commercially reasonable efforts to incorporate these requirements in contractual agreements with such third-parties. a) Assess the performance of third-party employers in relation to IFC PS2 requirements. b) Ensure that third-party contracted workers have access to the Project Worker's Grievance Mechanism (in case an IFC-compliant WGM is not provided by the third party).	Contractor	• Evidence of corresponding requests for information made (emails/letters/ minutes of meetings) • Examples of contractual agreements • Results of the third-party performance monitoring • Evidence of sharing the WGM procedure with the third-parties • Register of worker grievances • Inspection records

[1] Except for paragraphs 18-19 and 27-29.

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
LWC&E 12	Supply chain	a) Assess the primary supply chain to identify risks or incidents of child and/or forced labour. In case such risks are identified, take appropriate steps to remedy them. b) Where there is a high risk of significant safety issues related to supply chain workers, introduce procedures and mitigation measures to ensure that primary suppliers within the supply chain are taking steps to prevent or to correct life-threatening situations. c) Where remedy is not possible, in relation to a high risk of significant safety issues related to supply chain workers, shift the Project's primary supply chain, over time, to suppliers that can demonstrate that they are complying with IFC PS2.	Contractor	• Records on supply chain monitoring and risk assessments • Records on the suggested steps to remedy child and/or forced labour risks in the supply chain • Evidence of shifts in the supply chain
LWC&E 13	Job creation and equity – local recruitment declaration	Declared priority for local hiring (all other things being equal) through meeting a target of 80% for local recruitment.	Contractor	• HR statistics •
LWC&E 14	Job creation and equity - CLO	Ensure that a dedicated person (Community Liaison Officer) manages employment expectations by regular visits to the affected communities and spreading information on the Project's approach (i.e. availability of recruitment centres; priority of locals in terms of employment, if they have the appropriate skills; applications for employment will only be considered if submitted via the official application procedure, etc.).	Developer	• Community Liaison Officer job description • Bi-monthly reports on community visits
LWC&E 15	Job creation and equity – non-discrimination	Develop and implement a transparent and non-discriminatory recruitment procedure, with respect to ethnicity, sex, sexuality, or disability.	Developer and Contractor (each responsible for their own employees)	• Recruitment procedure in place • Recruitment paperwork in place (candidate's database, CVs received, interviews held, etc.)

Table 5-1: Key Management Controls				
ID	**Topic/Aspect**	**Control Description**	**Responsible Party**	**Means of Verification**
LWC&E 16	Job creation and equity – local recruitment provisions	Establish recruitment centres in the key affected communities within 'travel-to work' zone. Ensure that the following information is available in the recruitment centres: • Recruitment procedure; • Provisional recruitment plan indicating number and type of opportunities to be created by the Project in every half-year period (consistent with employment targets); • Clear descriptions of job vacancies that are open in each particular moment, with explanation of the skills required for each post; • Information on opportunities for the provision of goods and services for the Project.	Contractor	• Inspection results • Recruitment Procedure • Provisional recruitment plan • Job descriptions
LWC&E 17	Job creation and equity – local skill enhancement	Prepare and implement a procedure to enhance the skills of local workers including: • Identification of training needs by project phase; • Training plan and budget; and • Verification of performance (via KPIs).	Contractor	• Training Plan • Training records

6. MONITORING CONTROLS

6.1 Definition of Monitoring

For the purposes of this Project and this Management Plan, monitoring is defined as a repeated action undertaken to determine the:

- quality of environmental media potentially impacted by the Project (e.g. taking samples of air/water/soil or surveying flora/fauna);
- compliance against threshold targets (e.g. recording measurements for air emissions/water discharges/sediment runoff/noise emissions/vibration etc) generated by the Project; or
- performance of a management control (e.g. inspection observations during regular site walkovers, checking and reviewing of key records/registers).

Monitoring does not therefore include one off actions, for example, undertaking specific surveys/assessments, adhering to ongoing standards/rules/prohibitions, installation of equipment for protection/preventative purposes, training, maintaining equipment and vehicles. These are considered to be management controls.

6.2 Implementation of Monitoring Controls

The monitoring controls that are to be implemented during construction to ensure compliance with the Project Standards, as described in Table 6-1 below. This includes Key Performance Indicators (KPIs) to help assess the efficacy of implementation. As detailed in Table 6-1, all monitoring controls will be recorded and/or reported.

In the event that monitoring results identify non-conformance with Project Standards, these will be reported, investigated and corrective actions identified and implemented.

Table 6-1: Key Monitoring Controls

ID	Topic	KPI	Methods	Periodicity	Location	Responsible Party
LWC&EM01	Worker satisfaction levels	Number of accepted grievances from workers in relation to labour and working conditions Target: N/A	Review of Worker Grievance Register records	Quarterly review and reporting	N/A	Contractor
LWC&EM02	Compliance with the local labour legislation	Number of local labour law violations identified by the state labour inspectorate Target: 0	Review of the state labour inspection results	To align with the state labour inspection frequency	N/A	Contractor
LWC&EM03	Local employment	Proportion of local people employed (out of 100%) Target: 80%	HR paperwork review	Semi-Annual Reporting	N/A	Contractor
LWC&EM04	Local employment	Number of external grievances related to employment opportunities Target: N/A	External Grievance Mechanism paperwork review	Quarterly Reporting	N/A	Developer

APPENDIX 3
DEVELOPER SOIL MANAGEMENT PLAN

Intended for
Bugesera Airport Company Limited

Date
February 2018

Project Number
1700000222-001

NEW BUGESERA INTERNATIONAL AIRPORT
DEVELOPER SOIL MANAGEMENT PLAN

Bugesera Airport Company

NEW BUGESERA INTERNATIONAL AIRPORT
DEVELOPER SOIL MANAGEMENT PLAN

Project No.	**1700000222-001**
Issue No.	**1**
Date	**February 2018**
Made by	**Ellie Bicknell/Marylise Schmid/Steve R King**
Checked by	**Ailish Catriona Enker**
Approved by	**Denise Wright**

Made by:  Steve R King

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Revision	Revision Date	Authors	Approved By	Revision Notes

1. INTRODUCTION

1.1 Purpose

The Bugesera Airport Company Limited (BAC, the "Developer") has overall responsibility for the delivery of the New Bugesera International Airport Project, (the "Project"). The Engineering, Procurement and Construction (EPC) Contractor, Mota-Engil Engenharia e Construção Africa - Rwanda (MEECARW) and its sub-contractors (collectively, the "Contractor") is responsible for the construction of the Project.

This document is the Developer Soil Management Plan for the construction phase of the Project. This Management Plan is appended to the overarching Construction Environmental and Social Management Plan (Developer C-ESMP) and as such must be read in conjunction. The purpose of this Management Plan is to avoid or minimise the environmental and/or social risks and impacts of the Project related to soil. To fulfil this purpose, this Management Plan will:

- define the scope of soil management and set out applicable management interfaces;
- define the responsibilities for its implementation;
- outline the applicable Project Standards relevant to soil management;
- define the management and monitoring controls related to traffic (primarily based on commitments made in the Project ESIA); and;
- sign-post to supporting materials and information.

1.2 Application

The management and monitoring controls set out in this Management Plan apply to all Project construction activities, including those of the Contractor and its sub-contractors.

This Management Plan will be reviewed every year as a minimum to determine whether any changes or updates are required to the Plan unless a more frequent update is required to reflect changing Project design or procedures.

1.3 Authority and Management

The Developer's Health, Safety and Environment (HSE) Management is the custodian of this Developer Soil Management Plan. Any requests for changes to this Management Plan must be addressed to this person and will be subjected to the appropriate review and approval processes as outlined in the Management of Change Procedure in the C-ESMP.

2. SCOPE

2.1 Scope of this Developer Soil Management Plan

This Management Plan covers the key elements of soil management and monitoring specific to the handling and protection of soils and prevention of their loss from the site during construction and operation.

2.2 Overlaps with Other Management Plans

This Management Plan is part of the suite of Developer C-ESMPs developed for the Project, as follows:

- Developer Labour, Working Conditions and Employment Management Plan;
- Developer Waste Management Plan;
- Developer Biodiversity Management Plan;
- Developer Community Health, Safety and Security Plan;
- Developer Stormwater Management Plan;
- Developer Pollution Prevention Plan;
- **Developer Soil Management Plan**;
- Developer Traffic Management Plan; and
- Developer Cultural Heritage Plan.

Note: Management controls to prevent the release of contaminants to soils are presented in the Developer Pollution Prevention Plan and are not repeated here. Management controls to prevent soil erosion resulting from water run-off on the construction site are presented in the Developer Stormwater Management Plan and are not repeated here.

Figure 2.1 below illustrates the relationship between the Developer Environmental and Social Management System (Developer ESMS), the Developer C-ESMP and the appended suite of C-ESMPs, the Developer Overarching Operation Phase ESMP (Developer O-ESMP) and other Operation Phase ESMPs (O-ESMPs), the Contractor Construction Implementation Plans (CIPs) and the Contractor Operation Implementation Plans (OIPs).

The Contractor CIPs and OIPs will align with the Developer C-ESMPs and O-ESMPs, respectively. The OIPs and O-ESMPs will be developed at a later stage of the Project.

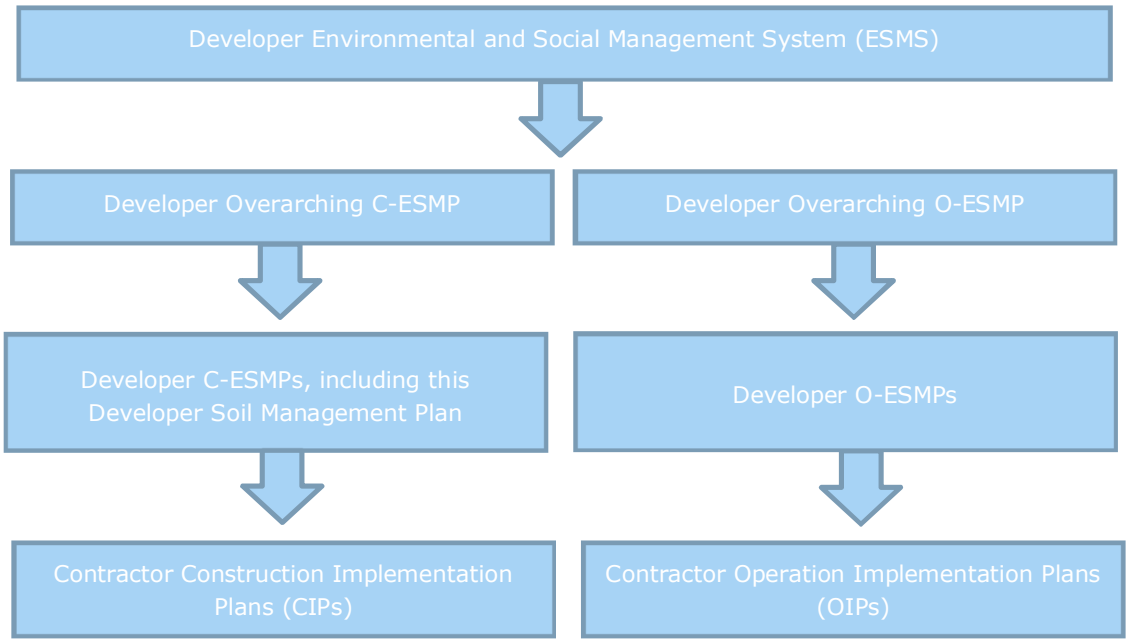

Figure 2-1: Environmental and Social Management Flowchart

3. RESPONSIBILITIES

The Developer has overall responsibility for the delivery of the Project. The Contractor is responsible for the construction of the Project. Responsibility for implementation of management and monitoring controls set out in this Management Plan are split between Developer and Contractor as detailed in tables provided in Section 5 and Section 6.

The overarching roles and responsibilities for implementation of the C-ESMPs is provided in the overarching Developer C-ESMP.

The Developer is responsible for:

- Ensuring adherence to this Management Plan; and
- Ensuring that the evaluation of the management and monitoring controls set out in this Management Plan takes place to ensure they are effective.

The Contractor is responsible for:

- Adhering to this Management Plan; and
- Ensuring alignment of the relevant CIP to this Management Plan and providing more detail on how controls will be implemented and by whom.

4. PROJECT STANDARDS

A list of applicable standards for the construction phase, including International law, Lender standards and national legislation is presented in the overarching Developer C-ESMP. There are no specific Project Standards for soil management that need to be repeated or highlighted here.

5. MANAGEMENT CONTROLS

5.1 Environmental and Social Aspects and Impacts

This section includes information on how to preserve soil resources during Project construction activities, in particular soil handling.

The following Project construction activities have the potential to result in soil disturbance and/or loss of topsoil resources:

- Construction and running of the Construction Camp;
- Earthworks including large scale cut and fill operations and the use of borrow pits;
- General construction activities – highway construction, water and wastewater treatment plants, buried water pipeline connecting Lake Kidogo to the water treatment plant to be used temporarily during construction, temporary asphalt and concrete plants, and construction of airport infrastructure; and
- Aggregate supply from the Bugesera Quarry 10 km to the northeast of the Construction Camp and quarry road upgrades.

5.2 Implementation of Management Controls

Management and mitigation measures (primarily derived from the Project ESIA) are elaborated on and will be implemented through the Key Management Controls as described in Table 5.1.

Each Management Control has been assigned a unique identification number (ID) to enable traceability and tracking from source of origin to implementation and vice versa. This is to demonstrate transparency in the environmental and social management process. The same Management Control IDs will be referenced by the Contractor in the relevant CIPs to demonstrate alignment with the Developer's C-ESMPs.

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
SO01	Soil disturbance and loss of topsoil resources.	a) Application of Good International Industry Practice (GIIP) when handling soil resources as outlined in IFC EHS Guidance, including: – Where topsoil is pre-stripped, it will be stored for future site rehabilitation activities. Topsoil management will include maintenance of soil integrity in readiness for future use. Storage areas shall be temporarily protected or vegetated to prevent erosion; and – Soil conservation measures (e.g. segregation, proper placement and stockpiling of clean soils and overburden material for existing site remediation) will be implemented. Key factors when confirming the measures include placement, location, design, duration, coverage, reuse and handling procedures. b) Adoption of materials management measures for appropriate material stockpiling including implementation of: – Procedures for verification of the quality of imported materials; – Documented procedures for assessment of material suitability for use classification; – Material movement tracking; and – Material storage procedures and signage clearly stating material type, material origin and potentially hazardous status (in the event that contaminated soils are present and need to be managed). c) Application of GIIP when trafficking in proximity to soil stripping/storage areas. d) Control of areas in which vehicle trafficking can occur through the addition of temporary or permanent barricading. e) Application of GIIP with respect to disturbed and stripped areas by restoring these as soon as practicable by sowing with stabilising grass seed mix or using temporary protection measures (e.g. Geojute or similar).	Contractor	Site Walkover Inspection Records

6. MONITORING CONTROLS

6.1 Definition of Monitoring

For the purposes of this Project and this Management Plan, monitoring is defined as a repeated action undertaken to determine the:

- quality of environmental media potentially impacted by the Project (e.g. taking samples of air/water/soil or surveying flora/fauna);
- compliance against threshold targets (e.g. recording measurements for air emissions/water discharges/sediment runoff/noise emissions/vibration etc) generated by the Project; or
- performance of a management control (e.g. inspection observations during regular site walkovers, tracking adherence to speed limits).

Monitoring does not therefore include one off actions, for example, undertaking specific surveys/assessments, adhering to ongoing standards/rules/prohibitions, installation of equipment for protection/preventative purposes, training, maintaining equipment and vehicles. These are considered to be management controls.

6.2 Implementation of Monitoring Controls

The monitoring controls that are to be implemented during construction to ensure compliance with the Project Standards, are described in Table 6-1 below. This includes Key Performance Indicators (KPIs) to help assess the efficacy of implementation. As indicated in the Table 6-1, all monitoring controls will be recorded and/or reported.

In the event that monitoring results identify non-conformance with Project Standards, these will be reported, investigated and corrective actions identified and implemented.

Table 6-1: Key Monitoring Controls						
ID	**Topic**	**KPI**	**Methods**	**Periodicity**	**Location**	**Responsible Party**
SOM01	Soil disturbance and loss of topsoil resources. Note: this control is required to monitor the performance of management control SO01.	**KPI:** Number of recorded soil management related non-compliances with this Plan **Target:** Minimise soil management related non-compliances **Threshold:** Objective is zero. If non-compliances are recorded, target is to eliminate from next recording period.	• Routine inspections will be carried using an Environmental Inspection Checklist; and • Incidents will be reported, investigated, corrective actions proposed and implemented.	Weekly	Areas of key construction activity including earthworks and material management and storage	Contractor
SOM02	Soil disturbance and loss of topsoil resources. Note: this control is required to monitor the performance of management control SO01.	**KPI:** Number of recorded soil management related grievances from local communities (as recorded through the Grievance Mechanism in the Grievance Register) **Target:** Minimise soil management related community grievances. **Threshold:** Objective is zero. If grievances are recorded, target is to eliminate from next recording period.	• Review of the Grievance Register in the Community Grievance Mechanism for any soil management related complaints from local communities. • Grievances and responses will be recorded in addition to remedial actions taken.	Weekly	N/A	Developer

APPENDIX 4
DEVELOPER TRAFFIC MANAGEMENT PLAN

Intended for
Bugesera Airport Company Limited

Date
February 2018

Project Number
1700000222-001

NEW BUGESERA INTERNATIONAL AIRPORT
DEVELOPER TRAFFIC MANAGEMENT PLAN

Bugesera Airport Company

NEW BUGESERA INTERNATIONAL AIRPORT
DEVELOPER TRAFFIC MANAGEMENT PLAN

Project No.	**1700000222-001**
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Approved by	**Denise Wright**

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Revision	Revision Date	Authors	Approved By	Revision Notes

1. INTRODUCTION

1.1 Purpose

The Bugesera Airport Company Limited (BAC, the "Developer") has overall responsibility for the delivery of the New Bugesera International Airport Project, (the "Project"). The Engineering, Procurement and Construction (EPC) Contractor, Mota-Engil Engenharia e Construção Africa - Rwanda (MEECARW) and its sub-contractors (collectively, the "Contractor") is responsible for the construction of the Project.

This document is the Developer Traffic Management Plan for the construction phase of the Project. This Management Plan is appended to the overarching Construction Environmental and Social Management Plan (Developer C-ESMP) and as such must be read in conjunction with it. The purpose of this Management Plan is to avoid or minimise the environmental and/or social risks and impacts of the Project related to traffic. To fulfil this purpose, this Management Plan will:

- define the scope of traffic management and set out applicable management interfaces;
- define the responsibilities for its implementation;
- outline the applicable Project Standards relevant to traffic management;
- define the management and monitoring controls related to traffic (primarily based on commitments made in the Project ESIA); and
- sign-post to supporting materials and information.

1.2 Application

The management and monitoring controls set out in this Management Plan apply to all Project construction activities, including those of the Contractor and its sub-contractors.

This Management Plan will be reviewed every year as a minimum to determine whether any changes or updates are required to the Plan unless a more frequent update is required to reflect changing Project design or procedures.

1.3 Authority and Management

The Developer's Health, Safety and Environment (HSE) Management is the custodian of this Developer Traffic Management Plan. Any requests for changes to this Management Plan must be addressed to this person and will be subjected to the appropriate review and approval processes as outlined in the Management of Change Procedure described in the C-ESMP.

2. SCOPE

2.1 Scope of this Developer Traffic Management Plan

This Management Plan covers the management and monitoring of traffic, transport, vehicle use and drivers at the Project site and within the Project area of influence (e.g. along access roads and haulage routes) during the construction phase.

2.2 Overlaps with Other Management Plans

This Management Plan is part of the suite of Developer C-ESMPs developed for the Project, as follows:

- Developer Labour, Working Conditions and Employment Management Plan;
- Developer Waste Management Plan;
- Developer Biodiversity Management Plan;
- Developer Community Health, Safety and Security Plan;
- Developer Stormwater Management Plan;
- Developer Pollution Prevention Plan;
- Developer Soil Management Plan;
- **Developer Traffic Management Plan**; and
- Developer Cultural Heritage Plan.

Figure 2.1 below illustrates the relationship between the Developer Environmental and Social Management System (Developer ESMS), the Developer C-ESMP and appended suite of C-ESMPs, the Developer Overarching Operation Phase ESMP (Developer O-ESMP) and other Operation Phase ESMPs (O-ESMPs), the Contractor Construction Implementation Plans (CIPs) and the Contractor Operation Implementation Plans (OIPs).

The Contractor CIPs and OIPs will align with the Developer C-ESMPs and O-ESMPs, respectively. The OIPs and O-ESMPs will be developed at a later stage of the Project.

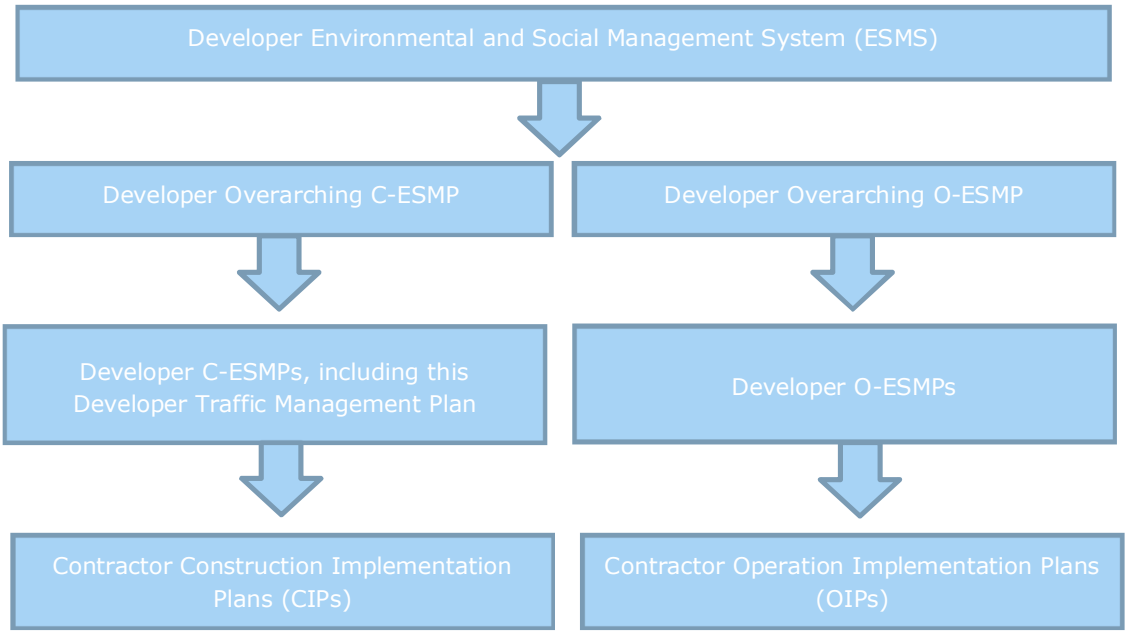


Figure 2-1: Environmental and Social Management Flowchart

3. RESPONSIBILITES

The Developer has overall responsibility for the delivery of the Project. The Contractor is responsible for the construction of the Project. Responsibility for implementation of the management and monitoring controls set out in this Management Plan are split between Developer and Contractor as detailed in the tables provided in Section 5 and Section 6.

The overarching roles and responsibilities for the implementation of the C-ESMPs is provided in the overarching Developer C-ESMP.

The Developer is responsible for:

- Ensuring adherence to this Management Plan; and
- Ensuring that the evaluation of the management and monitoring controls set out in this Management Plan takes place to ensure they are effective.

The Contractor is responsible for:

- Adhering to this Management Plan; and
- Ensuring alignment of the relevant CIPs to this Management Plan and providing more detail on how controls will be implemented and by whom.

4. PROJECT STANDARDS

A list of applicable standards for the construction phase, including International law, Lender standards and national legislation is presented in the overarching Developer C-ESMP. There are no specific Project Standards for traffic management that need to be repeated or highlighted here.

5. MANAGEMENT CONTROLS

5.1 Environmental and Social Aspects and Impacts

This section includes information on how to minimise transport and traffic related impacts during the Project construction activities. The following Project construction activities have the potential to generate transport and traffic impacts including severance, driver delay, transport use safety and amenity during construction:

- Additional heavy vehicle trips on the road network including the KK-15 (also referred to as the NR5) and the road to the Airport Area from Nyamata;
- Temporary and permanent closure of pedestrian footways;
- Travel to/from the Construction Camp by construction workers; and
- Noise, dust and vehicle emissions.

The following socio-economic impacts in relation to traffic also have the potential to arise during the construction phase:

- Severance resulting in loss of access or increase in time/difficulty to gain access to family/friends and social and physical infrastructure/facilities (such as health centres);
- Increased pollution (noise, air, water, soil) affecting human health and wellbeing;
- Increase in road traffic accidents (deaths and injuries) as a result of the increased number of vehicle movements and changes in vehicle composition;
- Increase in hazards at the airport construction site(s) site and other sites where roads may be widened and pipelines laid;
- Damage to infrastructure such as roads, irrigation structures, etc.; and
- Effects on community facilities (schools, churches, etc.) from traffic and other activities associated with construction of the airport and other linked/associated infrastructure.

5.2 Implementation of Management Controls

Management and mitigation measures (primarily derived from the Project ESIA) are elaborated on and will be implemented through the Key Management Controls as described in Table 5.1.

Each Management Control has been assigned a unique identification number (ID) to enable traceability and tracking from source of origin to implementation and vice versa. This is to demonstrate transparency in the environmental and social management process. The same Management Control IDs will be referenced by the Contractor in the relevant CIPs to demonstrate alignment with the Developer's C-ESMPs.

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
TR01	Access Severance Driver Delay Transport User Safety	a) Prepare a detailed Construction Traffic Management Plan (or equivalent) detailing the specific number and routeing of vehicles to and from the Construction Camp.	Contractor	• Relevant CIP
TR02	Access Severance Driver Delay Transport User Safety	a) The design of the Expressway will take account of safety aspects such as traffic lights, stop signs, speed humps, traffic calming zones, street lights, etc. The Expressway design will be developed and approved by engineers as per Rwandan requirements and Good International Industry Practice (GIIP). b) The quarry road will be shortened with the upgrade of an existing link to the road, which will result in shorter distances travelled and will alleviate transport through the centre of the Kabukuba Village and in the minimisation of potential accidents to the surrounding community and cattle.	Developer	• Design drawings
TR03	Access Severance Driver Delay Transport User Safety	a) Provide staff shuttles at specific locations surrounding the Project Area. b) Consolidate loads to reduce empty trailer movements where possible. c) Ensure all vehicles are maintained regularly and are road worthy. d) Signs and lights are to be provided to warn motorists of hazardous driving conditions created by construction interference with existing roads. e) Transport and vehicle traffic awareness to be provided to all contractors and staff to minimise potential accidents associated with construction activities.	Contractor	• Inspection Records • Staff and driver training records • Vehicle maintenance and inspection records • Installation of appropriate signage

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
TR04	Access Severance	a) Identify routes that will require closure. b) Undertake a survey of users (covering such factors as age, sex, starting location, intended destination and trip purpose for each user). c) Discuss options to 'replace' lost access with local governments; and, to extent feasible. d) Replace lost access. e) Ensure that access, to and from medical facilities, is not restricted by Project activities or that alternative access is in place and has been agreed, via prior consultation, with the staff of the medical facilities. All drivers will be instructed as to the importance of ensuring free access and egress of all vehicles to the identified medical facilities. f) Access to all existing properties will be maintained.	Developer (TR04a-d) Contractor (TR04e-f)	• Map and report on routes to be closed and replacement routes to be provided/defined • Minutes/records of meetings with local governments • Records of consultations with affected medical facilities • Driver training records • Inclusion of access maintenance requirement in relevant CIP
TR05	Socio-economic - Increased livestock casualties	a) Routes through the Airport Area to be closed (after due disclosure of the closure in nearby communities) to all non-Project road users. b) If some routes in the Airport Area are to stay open to non-Project traffic then flagmen to be deployed at crossings and other key locations. c) Vehicle speed limitations, particularly through settlements (to be determined on a case by case basis to minimise risk of collision although typically < 20-30 km). d) Adhere to the Developer driving rules: All drivers will undergo safety and environmental awareness training; driving performance will be assessed and monitored periodically with additional training provided if necessary. Night time driving will be by exception only, requiring Developer approval.	Contractor (TR05a-d)	• Inclusion of measures such as use of flagmen and installation of speed restriction signs in relevant CIP • Records of speed monitoring devices • Driver training records • Records of road safety meetings with local communities and schools

Table 5-1: Key Management Controls				
ID	**Topic/Aspect**	**Control Description**	**Responsible Party**	**Means of Verification**
		e) At sensitive locations on roads used by Project vehicular traffic, and particularly where schools and other sensitive facilities are close to the road, awareness of safety issues will be raised through village meetings and classroom lessons by Developer representatives responsible for community liaison/relations.	Developer (TR05e)	
TR06	Socio-economic - Increase in road traffic accidents/collisions with people	a) Routes through the Airport Area to be closed (after due disclosure of the closure in nearby communities) to all non-Project road users. b) If some routes in the Airport Area are to stay open to non-Project traffic then flagmen to be deployed at crossings and other key locations. c) Vehicle speed limitations, particularly through settlements (to be determined on a case by case basis to minimise risk of collision although typically < 20-30 km). d) Adhere to Developer driving rules: All drivers will be required to hold a valid Rwandan driving licence for the type and weight of vehicle they are to drive whilst under contract to the project and will be required to undergo safety and environmental awareness training; driving performance will be assessed and monitored periodically with additional training provided if necessary. Night time driving will be by exception only, requiring Developer approval. e) Construction traffic warning signs will be positioned at road crossings and other appropriate locations as determined by the Contractor. Road signs will be positioned along access routes before they are used by construction traffic. f) All Project drivers will be required to report all accidents and near misses involving people. g) Analysis of incident reporting records will be undertaken. h) At sensitive locations on roads used by Project vehicular traffic, and particularly where schools and other sensitive	Contractor (TR06a-g) Developer (TR06h)	• Inclusion of measures such as use of flagmen and installation of speed restriction signs in relevant CIP • Records of speed monitoring devices • Driver training records • Records of road safety meetings with local communities and schools • Installation of warning signs at road crossings • Records of driver drug and alcohol testing programme and audit reports • Vehicle maintenance records and audit reports

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
		facilities are close to the road, awareness of safety issues will be raised through village meetings and classroom lessons by Developer representatives responsible for community liaison/relations.		
TR07	Biodiversity - Mortality (Note: these controls, for the protection of animals from collision with site traffic, are also included in the Biodiversity Management Plan)	a) Only specified haul roads and designated construction tracks will be used by construction traffic. b) Provide driver awareness and training for all staff and contractors. c) Ensure that road safety signs include wildlife warning signs. d) All Project drivers will report all animal collision incidents involving herd animals, large mammals and large birds. e) Vehicle speed limitations, particularly close to sensitive receptors (to be determined on a case by case basis to reduce dust emission and risk of mortality of animals although typically < 20-30 km). f) All Project drivers are required to report all animal collision incidents and near misses involving herd animals, large mammals and large birds. g) Analysis of incident reporting records will be undertaken.	Contractor	• Records of driver and staff training to include animal and bird collision awareness training • Wildlife warnings on road safety signs • Animal collision reporting documentation
TR08	Vehicle use for construction resulting in surface water pollution	a) No vehicles will be permitted to access any surface waterbody. b) Ensure that vehicles to be used near waterbodies are in good working condition so as to eliminate the contamination of water bodies with hydrocarbons.	Contractor	• Driver and staff training records • Vehicle inspection/maintenance records

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
TR09	Air quality – fugitive dust and exhaust emissions. (Note: these controls are also included in the Developer Pollution Prevention Plan).	a) Vehicle speed limitations, particularly close to sensitive receptors (to be determined on a case by case basis to reduce dust emission although typically < 20-30 km). b) Restrict vehicle use in off-road areas. c) Manage emissions from mobile sources through the use of new vehicles (where possible) and/or adequate maintenance of vehicle and equipment. d) In line with Rwandan regulations, vehicle fuel with a low sulphur content will be used wherever possible; e) Use of low emission vehicles for all Project related transport purposes, including buses for workers travelling to/from the Construction Camp. f) Regular vehicle maintenance with monitoring and enforcement of emission standards.	Contractor	• Driver and staff training records • Installation of speed restriction signage • Vehicle maintenance and inspection records
TR10	Vehicle noise emissions and nuisance for dwellings along the quarry road, outside the Airport Area boundary and along the Expressway during construction (Note: these controls are also included in the Developer Pollution Prevention Plan)	a) All vehicles are to be kept in good working order and inspected regularly to ensure integrity and reliability and prevent excessive noise and vibration. b) Vehicles and equipment will be used in accordance with manufacturer guidelines. Vehicles/equipment will be replaced when necessary. c) Unnecessary noise (such as engines idling between operations, shouting, loud radios or excessive revving of engines) will be avoided by effective site management. d) All construction workers will be provided with adequate hearing protection to be used when necessary. e) Vehicle speed limitations, particularly close to sensitive receptors (to be determined on a case by case basis to reduce noise and vibration annoyance although typically < 20-30 km). f) Where possible, the deliveries of materials will be scheduled to arrive during daytime hours.	Contractor	• Driver and staff training records • Vehicle maintenance and inspection records • Community Grievance Mechanism Complaints Register • Installation of appropriate speed limit signage at key locations

Table 5-1: Key Management Controls				
ID	**Topic/Aspect**	**Control Description**	**Responsible Party**	**Means of Verification**
TR11	Increase fuel demand associated with construction vehicles, equipment and welfare facilities	a) Implement staff training. b) Use equipment and machinery that is in good condition and perform regular maintenance. c) Ensure that machinery is not kept running while not in use. d) Adopt transport measures, such as regular inspection/maintenance of vehicles, adoption of speed restrictions to optimise fuel efficiency of vehicles.	Contractor	• Vehicle and machinery maintenance and inspection records
TR12	Contractor Performance Evaluation	a) Establish an inspection and audit programme to assess the Contractor's performance with respect to this Management Plan, including review of: – Contractor's emergency response procedure (including actions to be undertaken by drivers) – Driver competency records – Vehicle equipment and maintenance records – Driver training records.	Developer	• Developer Audit Programme (as part of the Developer ESMS)

6. MONITORING CONTROLS

6.1 Definition of Monitoring

For the purposes of the Project and this Management Plan, monitoring is defined as a repeated action undertaken to determine the:

- quality of environmental media potentially impacted by the Project;
- compliance against threshold targets (as defined in Table 6-1); or
- performance of a management control (e.g. inspection observations during regular site walkovers, tracking adherence to speed limits).

Monitoring does not therefore include one off actions, for example, undertaking specific surveys/ assessments, adhering to ongoing standards/rules/prohibitions, installation of equipment for protection/preventative purposes, training, maintaining equipment and vehicles. These are considered to be management controls.

6.2 Implementation of Monitoring Controls

The monitoring controls to be implemented during construction to ensure compliance with the Project Standards, are described in Table 6-1 below. This includes Key Performance Indicators (KPIs) to help assess the efficacy of implementation. As indicated in Table 6-1, all monitoring controls will be recorded and/or reported.

In the event that monitoring results identify non-conformance with Project Standards, these will be reported, investigated and corrective actions identified and implemented.

Table 6-1: Key Monitoring Controls

ID	Topic	KPI	Methods	Periodicity	Location	Responsible Party
TRM01	Speed Limits (Note: this is a monitoring control required to determine the performance of management controls TR05 and TR06)	**KPI:** Number of drivers found to be exceeding speed limits or driving unsafely **Target:** Minimise with a target of zero	a) Speed limits will be monitored using GPS vehicle tracking systems which will be installed on all Project vehicles where necessary and practicable. Drivers found speeding will be subject to disciplinary action. b) Review of records of driver speeding and reported safety incidents.	Continuous	All locations in use by Project vehicles	Contractor
TRM02	Driver Competency	**KPI:** Robust record keeping of driver training and sobriety **Target:** Driver licensing and training records 100% accurate for all drivers working at the site; zero tolerance for alcohol/drug usage by drivers	a) Random drug and alcohol testing of all construction-related drivers will be conducted. b) Regular review of driver training processes and recorded training.	Weekly testing (as a minimum). Monthly review of training.	All locations in use by Project vehicles	Contractor
TRM03	Vehicle inspections for illegal and wildlife products	**KPI:** Robust records of vehicle inspections **Targets:** Zero tolerance of prohibited/illegal products and wildlife products in vehicles.	a) Vehicles entering the construction site areas will be inspected for prohibited/illegal products including wildlife products.	At contractor appointment and entry point to site.	All locations in use by Project vehicles	Contractor

Table 6-1: Key Monitoring Controls

ID	Topic	KPI	Methods	Periodicity	Location	Responsible Party
TRM04	Dust and emissions inspections (Note: this is a monitoring control required to determine the performance of management control TR09)	**KPI:** Reported non-compliances against the management controls identified in this Management Plan **Target:** Minimise and achieve continuous improvement in number of reported non-compliances	a) Visually inspect and report dust levels along the haulage routes and in particular at sensitive locations e.g. residential areas and during particularly vulnerable times e.g. during dry seasons.	Daily, following road construction and/or upgrading and in the event of a complaint	Principal haulage routes and construction areas	Contractor
TRM05	Community protection	**KPI:** Number of transport related complaints from local communities **Target:** Minimise with a target of zero Resolve any in a timely manner	a) Review Community Grievance Register for any traffic related complaints from local communities. b) Record remedial measures for grievances including time taken to respond and complete.	Weekly	Residential areas along or in close proximity to the Project haulage routes.	Developer

APPENDIX 5
DEVELOPER WASTE MANAGEMENT PLAN

Intended for
Bugesera Airport Company Limited

Date
February 2018

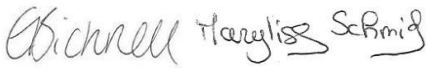
Project Number
1700000222-001

NEW BUGESERA INTERNATIONAL AIRPORT
DEVELOPER WASTE MANAGEMENT PLAN

Bugesera Airport Company

NEW BUGESERA INTERNATIONAL AIRPORT
DEVELOPER WASTE MANAGEMENT PLAN

Project No.	**1700000222-001**
Issue No.	**1**
Date	**February 2018**
Made by	**Ellie Bicknell/Marylise Schmid/Steve R King**
Checked by	**Ailish Catriona Enker**
Approved by	**Denise Wright**

Made by:  Steve R King

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1	01/02/2018	EB/MS/SK	ACE	DW	Issue 1

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File Name	Waste Management Plan
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Revision	Revision Date	Authors	Approved By	Revision Notes

1. INTRODUCTION

1.1 Purpose

The Bugesera Airport Company Limited (BAC, the "Developer") has overall responsibility for the delivery of the New Bugesera International Airport Project, (the "Project"). The Engineering, Procurement and Construction (EPC) Contractor, Mota-Engil Engenharia e Construção Africa - Rwanda (MEECARW) and its sub-contractors (collectively the "Contractor") is responsible for the construction of the Project.

This document is the Developer Waste Management Plan for the construction phase of the Project. This Management Plan is appended to the overarching Construction Environmental and Social Management Plan (Developer C-ESMP) and as such must be read in conjunction with it. The purpose of this Management Plan is to avoid or minimise the environmental and/or social risks and impacts of the Project related to waste. To fulfil this purpose, this Management Plan will:

- define the scope of waste management and set out applicable management interfaces;
- define the responsibilities for its implementation;
- outline the applicable Project Standards relevant to waste management;
- define the management and monitoring controls related to waste (primarily based on commitments made in the Project ESIA); and
- sign-post to supporting materials and information.

1.2 Application

The management and monitoring controls set out in this Management Plan apply to all Project construction activities, including those of the Contractor.

This Management Plan will be reviewed every year as a minimum to determine whether any changes or updates are required to the Plan unless a more frequent update is required to reflect changing Project design or procedures.

1.3 Authority and Management

The Developer's Health, Safety and Environment (HSE) Management is the custodian of this Developer Waste Management Plan. Any requests for changes to this Management Plan must be addressed to this person and will be subjected to the appropriate review and approval processes as outlined in the Management of Change Procedure described in the C-ESMP.

2. SCOPE

2.1 Scope of this Developer Waste Management Plan

This Management Plan covers the handling, storage, transport and disposal of wastes from the Project during the construction phase. This Management Plan should be read in conjunction with the construction phase Developer Traffic Management Plan with respect to transportation routes (in this case for waste transport) and consideration for community impacts along those routes.

2.2 Overlaps with Other Management Plans

This Management Plan is part of the suite of Developer C-ESMPs developed for the Project, as follows:

- Developer Labour, Working Conditions and Employment Management Plan;
- **Developer Waste Management Plan**;
- Developer Biodiversity Management Plan;
- Developer Community Health, Safety and Security Plan;
- Developer Stormwater Management Plan;
- Developer Pollution Prevention Plan;
- Developer Soil Management Plan;
- Developer Traffic Management Plan; and
- Developer Cultural Heritage Plan.

Figure 2-1 below illustrates the relationship between the Developer Environmental and Social Management System (Developer ESMS), the Developer C-ESMP and the appended suite of C-ESMPs, the Developer Overarching Operation Phase ESMP (Developer O-ESMP) and other Operation Phase ESMPs (O-ESMPs), the Contractor Construction Implementation Plans (CIPs) and the Contractor Operation Implementation Plans (OIPs).

The Contractor CIPs and OIPs will align with the Developer C-ESMPs and O-ESMPs, respectively. The OIPs and O-ESMPs will be developed at a later stage of the Project.

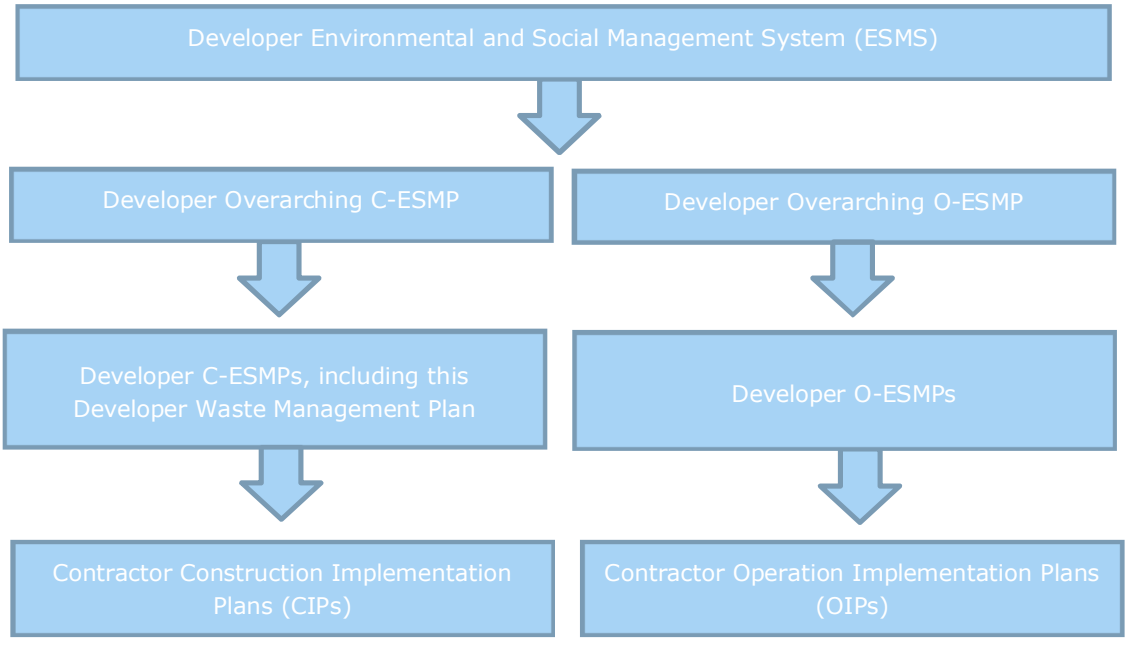

Figure 2-1: Environmental and Social Management Flowchart

3. RESPONSIBILITES

The Developer has overall responsibility for the delivery of the Project. The Contractor is responsible for the construction of the Project. Responsibility for implementation of the management and monitoring controls set out in this Management Plan are split between Developer and Contractor as detailed in tables provided in Section 5 and Section 6.

The overarching roles and responsibilities for the implementation of the C-ESMPs is provided in the overarching Developer C-ESMP.

The Developer is responsible for:

- Ensuring adherence to this Management Plan; and
- Ensuring that the evaluation of the management and monitoring controls set out in this Management Plan takes place to ensure they care effective.

The Contractor is responsible for:

- Adhering to this Management Plan; and
- Ensuring alignment of the relevant CIP to this Management Plan and providing more detail on how controls will be implemented and by whom.

4. PROJECT STANDARDS

A list of applicable standards for the construction phase, including International law, Lender standards and national legislation is presented in the overarching Developer C-ESMP. There are no specific Project Standards for waste management that need to be repeated or highlighted here.

5. MANAGEMENT CONTROLS

5.1 Environmental and Social Aspects and Impacts

The following construction activities have the potential to generate waste during the construction phase:

- Excavation and site clearance – high quantities of soil and organic material are anticipated to be generated during excavation and site clearance; however, these materials will be largely reused on site as fill and/or reprofiling/landscaping;
- Offices – administrative type wastes;
- Vehicle maintenance and depot – oily wastes;
- Camp - Approximately 1,800 workers (at peak) are anticipated to work from the Construction Camp associated with the Project; therefore, high levels of putrescible and packaging waste are anticipated to be produced due to the high number of workers;
- Kitchens – paper, card, putrescible wastes;
- Medical facility – hazardous (medical) wastes;
- Construction - High quantities of packaging waste predominantly comprising plastic packaging and films (not plastic bags), paper and cardboard are also anticipated during the construction phase;
- Batching plants - inert (slurries/sludges) wastes; and
- Laboratory – hazardous (chemical-based) wastes.

Hazardous waste generation is expected to be limited and will be handled by a certified waste contractor and disposed at a licensed facility (Nduba Landfill).

5.2 Implementation of Management Controls

Management and mitigation measures (primarily derived from the Project ESIA) are elaborated on and will be implemented through the Key Management Controls as described in Table 5.1.

Each Management Control has been assigned a unique identification number (ID) to enable traceability and tracking from source of origin to implementation and vice versa. This is to demonstrate transparency in the environmental and social management process. The same Management Control IDs will be referenced by the Contractor in the relevant CIPs to demonstrate alignment with the Developer's C-ESMPs.

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
WA01	Waste management - inventory and classification.	a) A waste inventory will be produced recording all waste types and quantities generated at the site and updated as appropriate to take account of any new waste types generated. b) All wastes will be classified according to the following criteria and based on internationally accepted regulations, guidelines, definitions and methodologies: – Inert/mineral, subsoil/rock excavation waste; – Non-hazardous waste (including domestic waste, recyclable materials defined by type, i.e. paper and carboard, timber, glass, plastics, etc.; and – Hazardous waste (including medical waste). c) Soil and organic material that is generated during excavation and site clearance is to be reused on site, to the extent possible.	Contractor	• Project waste inventory • Regularly updated waste generation and collection tickets and reports by waste types
WA02	Deterioration of soil and water quality resulting from the improper waste storage on site, disposal of waste in unlicensed facilities or using inappropriate disposal methods.	a) No wastes will be disposed of on site and burning of wastes will be prohibited. b) Waste materials will be stored on site in accordance with GIIP and local regulations (including use of sealed containers or bins in designated storage areas. No wastes awaiting collection will be stored directly on the unsurfaced ground). c) Hazardous wastes (such as oils, paints, solvents) will be stored separately from non-hazardous wastes in a clearly demarcated area for this purpose and in sealed containers with isolated surface water containment (e.g. bunded tank) ensuring isolation from unsurfaced ground and surface water runoff. Removal and disposal of this waste type will be by a waste contractor specifically licensed for the transport and disposal of hazardous wastes. d) Wood cutting activities will take place in centralised locations to maximise reuse and make collection easier (i.e. reduce double-handling).	Contractor	• Provision of appropriate waste storage containers on site in clearly demarcated area • Regular inspection of waste storage and handling areas, weekly checklist reporting. • Waste vehicle routing to be verified and controlled by through relevant CIP(s) • Staff training records regarding waste

Table 5-1: Key Management Controls				
ID	**Topic/Aspect**	**Control Description**	**Responsible Party**	**Means of Verification**
		e) Detailed plans for routing of traffic transporting waste, in order to minimise impacts on communities will be provided. f) Waste management training will be provided to all construction personnel to ensure that protection measures are understood and implemented appropriately.		handling and waste disposal
WA03	Impacts on local communities, including loss of land, nuisance, disturbance through increased vehicle movements, indirect impacts as a result of negative impacts on the surrounding environment.	a) Vehicle movements directly associated with waste are anticipated to be low. All vehicles attending the site for waste management purposes will be subject to the requirements of the relevant Contractor CIPs (aligned with the Developer Traffic Management Plan). b) All waste management handling and storage will take place in clearly demarcated areas within the current Project footprint. No additional land will be utilised for this purpose. c) All wastes to be stored on site in appropriate containers to prevent escape to the local environment, particularly with respect to putrescible kitchen wastes and potential windblown litter.	Contractor	• Community Grievance Register as per the Grievance Mechanism • Site inspection reports
WA04	Improper disposal of waste due to existing waste management facilities being unable to process high volumes of waste arising from the Project.	a) Appropriately licensed facilities will be identified for acceptance of Project wastes and all wastes will be collected by appropriately licensed contractor for delivery at these facilities. b) High volumes of waste from the Project are not anticipated; identified facilities for acceptance of site wastes will include sufficient capacity as part of the selection criteria. c) Salvageable materials will be diverted from disposal where possible to recycling facilities. Such material is to be stored separately in clearly demarcated areas on site to avoid 'cross-contamination' from other wastes.	Contractor	• Quantified waste inventory • Tracking of waste via disposal/recycling contractor collection and delivery reporting/certification

Table 5-1: Key Management Controls				
ID	**Topic/Aspect**	**Control Description**	**Responsible Party**	**Means of Verification**
WA05	Health-related impacts on employees of the Project as a result of improper handling, storage and disposal of waste.	a) GIIP will be followed on the site in terms of waste handling and storage; this will include storage of general waste, hazardous waste and recyclable materials separately and in clearly demarcated areas and containers fit for the purpose and isolating potentially polluting wastes, and those prone to wind dispersion, from the environment and surface waters by storage in self-contained skips, tanks or hard surfaced areas with drainage containment. b) Putrescible waste, such as food and other domestic type wastes, will not be stored on site for prolonged periods and will be promptly removed during the hot season to avoid odours and attraction of pests.	Contractor	• Site inspection records
WA06	Improper disposal of waste leading to the release of substances which may be harmful to the environment impacting upon local flora and fauna and migrating fauna.	a) No waste will be disposed of on site. All waste materials will be removed from site and disposed of at licensed end-disposal or recycling facilities. b) Burning of waste materials onsite will be prohibited. c) Waste haulier sub-contractors and end waste disposal facilities will be inspected (see monitoring control WAM03).	Contractor	• Site inspection records • Waste disposal licensed carrier records

6. MONITORING CONTROLS

6.1 Definition of Monitoring

For the purposes of this Project and this Management Plan, monitoring is defined as a repeated action undertaken to determine the:

- quality of environmental media potentially impacted by the Project (e.g. taking samples of air/water/soil or surveying flora/fauna);
- compliance against threshold targets (e.g. recording measurements for air emissions/water discharges/sediment runoff/noise emissions/vibration etc) generated by the Project; or
- performance of a management control (e.g. inspection observations during regular site walkovers, tracking waste vehicle routes).

Monitoring does not therefore include one off actions, for example, undertaking specific surveys/assessments, adhering to ongoing standards/rules/prohibitions, installation of equipment for protection/preventative purposes, training, maintaining equipment and vehicles. These are considered to be management controls.

6.2 Implementation of Monitoring Controls

The monitoring controls to be implemented during construction to ensure compliance with the Project Standards, are described in Table 6-1 below. This includes Key Performance Indicators (KPIs) to help assess the efficacy implementation. As indicated in the Table 6-1, all monitoring controls will be recorded and/or reported.

In the event that monitoring results identify non-conformance with Project Standards, these will be investigated, reported and corrective actions identified and implemented.

Table 6-1: Key Monitoring Measures

ID	Topic	KPI	Methods	Periodicity	Location	Responsible Party
WAM01	Workplace, and waste handling and storage area inspections (on site).	**KPI:** Number of Reported Waste Incidents. **Target:** Minimise and continued improvement in number of reported non-compliances with this Plan.	Routine inspections of general housekeeping and waste storage/handling areas (ensuring they do not encroach on land outside of the Project footprint).	Weekly	All main workplaces, waste storage and handling areas	Contractor
WAM02	Waste related grievances.	**KPI:** Number of Community Grievances. **Target:** Minimise and continued improvement in number of waste related community grievances.	Review of the Community Grievance Register in the Grievance Mechanism for any waste management related grievances from local communities.	Weekly	Community Liaison Officer (CLO) discussions in local communities and reporting on same	Developer
WAM03	Third party waste hauliers/facilities verification assessments. (Note: this is a monitoring control required to determine the performance of management control WA06c).	KPI: Instance of Off-Site Contamination Identified. **Target:** Zero contamination or pollution issues or events associated with waste sub-contractor's facilities, vehicles or end disposal facilities accepting project waste.	Inspection of third party waste haulier and facilities used for wastes sent off-site.	At the start of contract agreement and monthly thereafter if necessary (or upon change of haulier/facility)	Third party waste contractor hauliers and facilities	Contractor

APPENDIX 6
DEVELOPER COMMUNITY, HEALTH, SAFETY, SECURITY MANAGEMENT PLAN

Intended for
Bugesera Airport Company Limited

Date
February 2018

Project Number
1700000222-001

NEW BUGESERA INTERNATIONAL AIRPORT DEVELOPER COMMUNITY HEALTH, SAFETY AND SECURITY MANAGEMENT PLAN

Bugesera Airport Company

NEW BUGESERA INTERNATIONAL AIRPORT DEVELOPER COMMUNITY HEALTH, SAFETY AND SECURITY MANAGEMENT PLAN

Project No.	**1700000222-001**
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Made by	**Ron Bisset/Katya Sladkova**
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Approved by	**Denise Wright**

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CONTENTS

DOCUMENT CONTROL

File Name	Community, Health, Safety and Security Management Plan
Description	
Original Author	
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Approved By	
Approval Date	
Change Record Number	

Revision	Revision Date	Authors	Approved By	Revision Notes

1. INTRODUCTION

1.1 Purpose

The Bugesera Airport Company Limited (BAC or the "Developer") has overall responsibility for the delivery of the New Bugesera International Airport Project, (the "Project"). The Engineering, Procurement and Construction (EPC) Contractor, Mota-Engil Engenharia e Construção Africa - Rwanda (MEECARW) and its sub-contractors (collectively, the "Contractor") is responsible for the construction of the Project.

This document is the Developer Community Health, Safety and Security Management Plan (CHSSMP). This Management Plan is appended to the overarching Construction Environmental and Social Management Plan (Developer C-ESMP) and, as such, must be read in conjunction with it. The purpose of this Management Plan is to avoid or minimise the risks and impacts to community health, safety, and security that may arise from Project related-activities, with attention to vulnerable groups. To fulfil this purpose, this Management Plan will:

- define its scope of community health, safety and security management;
- define the responsibilities for its implementation;
- outline the applicable Project Standards relevant to community health, safety and security management;
- define the management and monitoring controls related to community health, safety and security (primarily based on the mitigation, management and monitoring measures made in the Project ESIA);
- sign-post to supporting materials and information.

1.2 Application

The management and monitoring controls set out in this Management Plan apply to all Project construction activities including those of the Contractor.

This Management Plan will be reviewed every year as a minimum to determine whether any changes or updates are required unless a more frequent update is required to reflect changing Project design or procedures.

1.3 Authority and Management

The Developer's Health, Safety and Environment (HSE) Management is the custodian of this Developer CHSSMP. Any requests for changes to this Developer CHSSMP must be addressed to this person and will be subjected to the appropriate review and approval processes as outlined in the Management of Change Procedure described in the C-ESMP.

2. SCOPE

2.1 Scope of this Developer Community Health, Safety and Security Management Plan

This Management Plan is applicable to the Project's construction phase, including administration/corporate offices located off-site. It includes all on- and off-site activities, such as ground preparation, excavations, materials handling, operation of machinery/equipment, closing of access routes, employment of non-local workers and transportation, which may significantly impact on affected communities (defined and identified below), particularly vulnerable individuals/groups. Where Project construction requires ancillary facilities and associated activities (for example, power generation on site during construction), these activities are also under the scope of this Management Plan.

Occupational health and safety and labour and working conditions are not covered by this Management Plan, but rather by two separate plans: a Health and Safety Management Plan (to be developed by the Contractor that will incorporate occupational health and safety) and the Developer Labour, Working Conditions and Employment Management Plan respectively.

The risks and impacts on local community health, safety and security assessed and evaluated in the ESIA Report, and included in this Management Plan, are as follows:

- Increased pollution (noise, air, water, soil) affecting human health and wellbeing;
- Increase in risks/exposure to communicable diseases (via influx and presence of non-local workforce);
- Increase in road traffic accidents (deaths and injuries) because of increased number of vehicle movements and changes in vehicle composition;
- Increase in hazards at the airport construction sites and other sites where roads may be widened, and pipelines laid;
- Lost or reduced access to health care provision by temporary severance of access routes; and
- Risk of conflict between community members and security personnel leading to injury;
- Damage to infrastructure, such as roads, irrigation structures, etc.;
- Damage to structures (especially housing) from vibration; and

Effects on community facilities (schools, churches, etc.) from traffic and other activities associated with construction of the airport and other linked/associated infrastructure. Affected Communities are defined as those legally recognised villages located within the vicinity of:

- The Airport Area;
- The Expressway;
- The upgraded quarry road; and
- The construction phase water supply systems (abstraction and transfer facilities).

For the purposes of this Management Plan, the Affected Communities are all the communities located in the following cells/sectors:

- Murinja (Gahanga Sector);
- Kanzenze (Ntarama Sector);
- Rurenge (Mwogo Sector);
- Kabukuba, and Rwinume (Juru Sector);
- Nyabagendwa, Kabeza, and Kimaranzara, Ntarama (Rilima Sector);
- Murama (Nyamata Sector); and
- Kibirizi (Mayange Sector).

2.2 Overlaps with Other Management Plans

This Management Plan is part of the suite of Developer C-ESMPs developed for the Project, as follows:

- Developer Labour, Working Conditions and Employment Management Plan;
- Developer Waste Management Plan;
- Developer Biodiversity Management Plan;
- **Developer Community Health, Safety and Security Plan;**
- Developer Stormwater Management Plan;
- Developer Pollution Prevention Plan;
- Developer Soil Management Plan;
- Developer Traffic Management Plan; and
- Developer Cultural Heritage Management Plan.

The Developer Pollution Prevention Plan presents management and monitoring controls related to the threats posed by emissions of pollutants to local communities.

Management and monitoring controls to address community and road traffic accidents are detailed in the Developer Traffic Management Plan.

Figure 2-1 below illustrates the relationship between the Developer Environmental and Social Management System (Developer ESMS), the Developer C-ESMP and appended suite of C-ESMPs, the Developer Overarching Operation Phase ESMP (Developer O-ESMP) and other Operation Phase ESMPs (O-ESMPs), the Contractor Construction Implementation Plans (CIPs) and the Contractor Operation Implementation Plans (OIPs).

The Contractor CIPs and OIPs will align with the Developer C-ESMPs and O-ESMPs, respectively. The OIPs and O-ESMPs will be developed at a later stage of the Project.

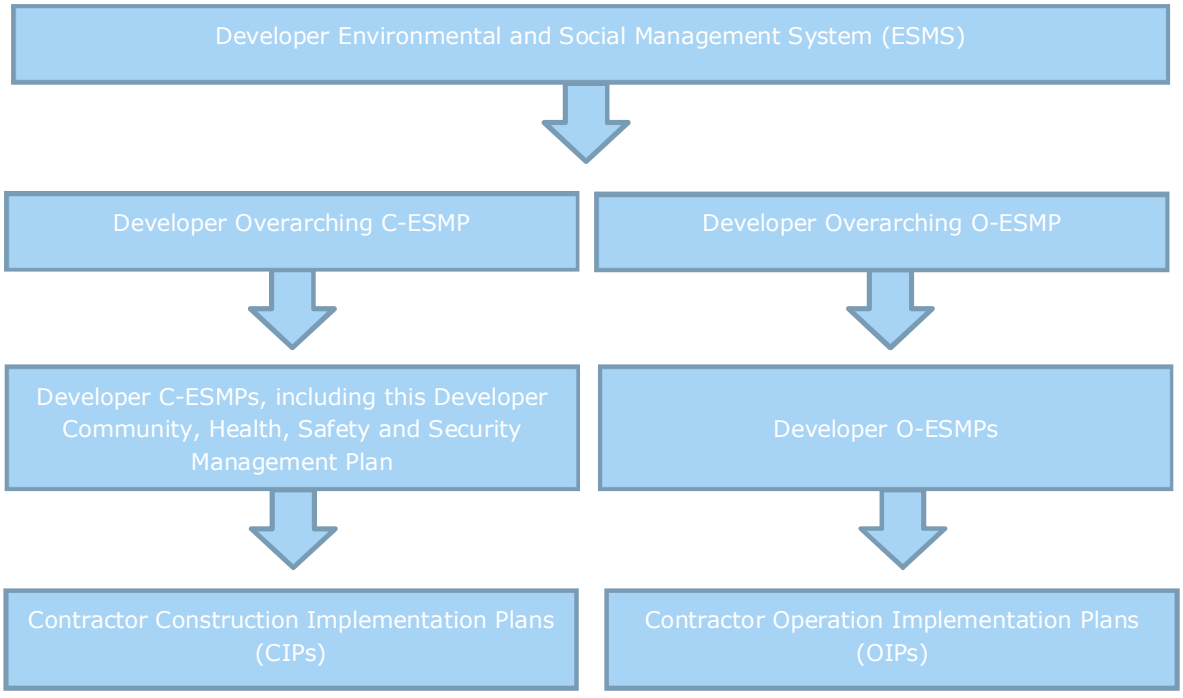

Figure 2-1: Environmental and Social Management Flowchart

3. RESPONSIBILITIES

The Developer has overall responsibility for the delivery of the Project. The Contractor is responsible for the construction of the Project. Responsibility for implementation of the management and monitoring controls set out in this Management Plan are split between Developer and Contractor as detailed in tables provided in Section 5 and Section 6.

The overarching roles and responsibilities for implementation of the C-ESMPs is provided in the overarching Developer C-ESMP.

The Developer is responsible for:

- Ensuring adherence to this Management Plan; and
- Ensuring that the evaluation of the management and monitoring controls set out in this Management Plan takes place to ensure they are effective.

The Contractor is responsible for:

- Adhering to this Management Plan; and
- Ensuring alignment of the relevant CIP to this Management Plan and providing more detail on how controls will be implemented and by whom.

4. PROJECT STANDARDS

A list of applicable standards for the construction phase, including international law, Lender standards and national legislation is presented in the overarching Developer C-ESMP. There are no specific Project Standards for community health, safety and security management that need to be repeated or highlighted here.

5. MANAGEMENT CONTROLS

5.1 Environmental and Social Aspects and Impacts

There are two main types of construction-related activities that give rise to direct threats to community health, safety and security:

- Emissions of pollutants to air, water and soil; and
- Activities, with no direct emission of pollutants, such as introduction of non-local labour and deployment of security personnel to protect Project assets and employees.

The potential adverse impacts arising from the construction phase to the affected communities are:

- Pollution and decline in health status;
- Increase in sexually transmitted infections;
- Increase in other communicable infections and non-communicable diseases;
- Increase in road traffic accidents;
- Increase in construction related accidents affecting the local community; and
- Conflict between local people and security providers resulting in physical harm to local people.

5.2 Implementation of Management Controls

Management and mitigation measures (primarily derived from the Project ESIA) are elaborated on and will be implemented through the Key Management Controls as described in Table 5.1.

Each Management Control has been assigned a unique identification number (ID) to enable traceability and tracking from source of origin to implementation and vice versa. This is to demonstrate transparency in the environmental and social management process. The same Management Control IDs will be referenced by the Contractor in the relevant CIPs to demonstrate alignment with the Developer's C-ESMPs.

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
CHSS01	Community Health: Manage potential increase in STIs and other communicable and non-communicable diseases	Establish an on-site clinic to manage minor ailments of construction phase workers and operate a personnel health programme.	Contractor	• Clinic in operation. • Statistics on worker visits.
CHSS02		Provide medical screening for employees prior to hiring and then on a regular basis: • Pre-recruitment screening; • Annual screening 'check-ups'; • Immunisations to be provided as necessary and at the discretion of the Contractor (e.g. in the event of a disease outbreak); and • Exit screening.	Contractor	Medical records on: • Workers immunised; • Workers passed initial screening; • Workers passed repeater and exit screening.
CHSS03		Ensure awareness regarding the risks and prevention measures associated with STIs, including HIV/AIDS: • Information on these issues will form part of the induction • Information on HIV/AIDS will be freely distributed • Information posters will be displayed in all prominent areas • Toolbox talks on these topics will be conducted at regular intervals	Contractor	Attendance records and programme materials (brochures, leaflets, etc.)
CHSS04a		Prepare and approve a Policy to include STIs, including HIV/AIDS	Developer	Policy text addressing STIs to be displayed on site
CHSS04b		Adopt and implement the policy addressing STIs, including HIV/AIDS	Contractor	Policy text addressing STIs adopted under the Contractor's logo and signature
CHSS05		Adhere to national regulations, international standards and GIIP for the control of hygiene of facilities	Contractor	Site inspection/audit results; number of observations/non-compliances recorded

Table 5-1: Key Management Controls				
ID	**Topic/Aspect**	**Control Description**	**Responsible Party**	**Means of Verification**
CHSS06		Provide medical checks for all catering workers	Contractor	Records of medical checks, medical fitness certificates available
CHSS07		Train all catering workers in relation to food hygiene	Contractor	Attendance records and training materials (brochures, leaflets, etc.)
CHSS08		Develop and implement a food sanitation management programme (such as one based on the World Health Organization's "Five keys to safer food" programme or an equivalent programme)	Contractor	Food sanitation management programme available for review
CHSS09		Establish rodent and vector management/controls (including, inter alia, rodent control measures at catering facilities)	Contractor	Records on rodent and vector identification
CHSS10		Feeding wildlife is prohibited.	Contractor	Site inspection records including breaches of the wildlife feeding ban

Table 5-1: Key Management Controls				
ID	**Topic/Aspect**	**Control Description**	**Responsible Party**	**Means of Verification**
CHSS11		Undertake Environmental Health Risk Assessments (EHRAs) when considering wastewater discharge and solid waste options and locations. These risk assessments will evaluate potential for community health impacts including relevant exposure pathways (such as watering of crops and drinking water) and present mitigation measures (if required by EHRA results).	Contractor	EHRA Reports (and mitigation measures) for wastewater discharge and solid waste options and locations
CHSS12	Community Safety and Security: Managing security-related impacts	Implement the "Voluntary Principles on Security and Human Rights". The requirement to apply the 'Voluntary Principles' in provision of security services includes adding this to all contracts for security providers.	Contractor	Contracts with requirements issued and signed
CHSS13		Undertake background checks before selecting security providers.	Contractor	Reports on security personnel background checks
CHSS14		Rules of security engagement will be devised and implemented.	Contractor	Provision of rules of engagement Random interviews with security personnel Examination of security personnel training records
CHSS15		Use of force by security personnel will not be sanctioned except when used for preventive and defensive purposes in proportion to the nature and extent of the threat.	Contractor	Incident reports Grievance Register

Table 5-1: Key Management Controls				
ID	**Topic/Aspect**	**Control Description**	**Responsible Party**	**Means of Verification**
CHSS16		Training of all security personnel.	Contractor	Evidence of training - Attendance records and training materials (brochures, leaflets, etc.)
CHSS17		Provide safety signage aimed at community members (e.g. warning of electric fencing and of construction traffic) in both Kinyarwanda and English.	Contractor	Inspection reports
CHSS18		Ensure fencing of active and inactive construction sites until rehabilitated or the threat posed by the sites is removed by some other means, unless the provision of fencing is not justifiable in terms of cost as opposed to benefit. In such cases, all entry points to a site that may be accessed by community members must have adequate signage with appropriate warnings. Fenced sites must be limited to authorised employees only. All activities must remain confined to these sites. Ensure adequate signage in place indicating these sites as restricted areas and only accessible by authorised employees. Place security guards at check points and critical areas to prevent unauthorised entries.	Contractor	Inspection reports
CHSS19		Undertake sensitisation of school children under 12 years of age in nearby schools (dangers from construction sites and traffic).	Developer	Plan of sensitisation activities Reports on the sensitisation activities Registration of attendees at each session

Table 5-1: Key Management Controls				
ID	**Topic/Aspect**	**Control Description**	**Responsible Party**	**Means of Verification**
CHSS20a	Community Safety and Security: Manage potential damage to public infrastructure and utilities	Prepare Working Method Statements, relating to infrastructure/utilities that include measures to protect the integrity of the third-party services and which are acceptable to the service operator/s. Any damage to third-party services should be repaired promptly in consultation with the service operator.	Contractor	Working Method Statements Reports on reparations
CHSS20b		Any planned diversion of services (for example, electricity or water) will be communicated to local government authorities and villages in advance.	Developer	Engagement logs - Emails/minutes of meetings

6. MONITORING CONTROLS

6.1 Definition of Monitoring

For the purposes of this Project and this Management Plan, monitoring is defined as a repeated action undertaken to determine the:

- compliance against threshold targets generated by the Project; or
- performance of a management control (e.g. inspection observations during regular site walkovers/inspections, reviews and audits).

Monitoring does not therefore include one-off actions, for example, undertaking specific surveys/assessments, adhering to ongoing standards/rules/prohibitions, installation of equipment for protection/preventative purposes, provision of training. These are considered to be management controls.

6.2 Implementation of Monitoring Controls

The monitoring controls to be implemented during construction to ensure compliance with the Project Standards are described in Table 6-1 below. This includes Key Performance Indicators (KPIs) to help assess the efficacy of implementation. As indicated in the Table 6-1, all monitoring controls will be recorded and/or reported.

In the event that any monitoring results identify non-compliance with Project Standards, these will be reported, investigated and corrective actions identified and implemented.

Table 6-1: Key Monitoring Controls

ID	Topic	KPI	Methods	Periodicity	Location	Responsible Party
CHSSM01	Community Health: Monitor potential increase in STIs and other communicable and non-communicable diseases	• Site clinic and personnel health programme in operation • 25% year-on-year decline in incidence of STIs and other communicable and non-communicable diseases	• Visual inspections, review of audit results and other reported consolidated data. • Also, a review of a sample of raw data	Annually	All sites	Contractor
CHSSM02 (Note: this is a monitoring control required to ensure compliance with management control CHSS05)	Community Health: Monitor potential increase in STIs and other communicable and non-communicable diseases	No non -conformances identified related to hygiene checks	• Visual inspections, review of audit results and other reported consolidated data.	Annually	All sites	Contractor
CHSSM03 (Note: this is a monitoring control required to ensure compliance with management control CHSS06)	Community Health: Monitor potential increase in STIs and other communicable and non-communicable diseases	100% of catering workers received medical checked	• Review of medical fitness certificates	Annually	All sites	Contractor
CHSSM04 (Note: this is a monitoring control required to ensure	Community Health: Manage potential increase in STIs and other communicable and	Number of non-compliances with the food sanitation management programme identified	• Interviews with personnel • Review of H&S reports of	Quarterly	All facilities where food is prepared and /or served to employees	Contractor

Table 6-1: Key Monitoring Controls						
ID	**Topic**	**KPI**	**Methods**	**Periodicity**	**Location**	**Responsible Party**
compliance with management control CHSS08)	non-communicable diseases		breaches of food sanitation requirements as set out in the food sanitation management programme			
CHSSM05 (Note: this is a monitoring control required to ensure compliance with management control CHSS09)	Community Health: Monitor potential increase in STIs and other communicable and non-communicable diseases	Bi-annual 10% decline in rodent/vector presence	• Bi-annual inspection of catering facilities to assess the presence of rodent. • Review of records of rodent sightings/capture (in H&S reports)	Bi-annually	All facilities where food is prepared and /or served to employees	Contractor
CHSSM06 (Note: this is a monitoring control required to ensure compliance with management control CHSS10)	Community Health: Monitor potential increase in STIs and other communicable and non-communicable diseases	No instances of feeding of wildlife at the catering facility	Review of H&S reports of breaches of wildlife feeding prohibition	Quarterly	All facilities where food is prepared and /or served to employees	Contractor

Table 6-1: Key Monitoring Controls						
ID	**Topic**	**KPI**	**Methods**	**Periodicity**	**Location**	**Responsible Party**
CHSSM07 (Note: this is a monitoring control required to ensure compliance with management control CHSS14)	Community Safety and Security: Monitor security-related impacts	Rules of engagement known by 100% of security personnel	Random interviews with security personnel Examination of training records	Bi-annually Annually	All sites	Contractor
CHSSM08 (Note: this is a monitoring control required to ensure compliance with management control CHSS15)	Community Safety and Security: Monitor security-related impacts	No instances of use of force except when used for preventive and defensive purposes in proportion to the nature and extent of the threat	Examination of security incident reports and community grievance mechanism data	Bi-annually	All sites	Contractor
CHSSM09 (Note: this is a monitoring control required to ensure compliance with management control CHSS17)	Community Safety and Security: Monitor security-related impacts	Safety signs in place for community members at all active and temporarily inactive construction sites	Visual inspections of sites	Quarterly	All active and inactive sites where rehabilitation has not been completed	Contractor
CHSSM10	Community Safety and Security: Monitor security-related impacts	Fencing and/or adequate demarcation/signage, in place at boundaries of all active and temporarily inactive construction sites	Visual inspections of sites	Quarterly	All active and inactive sites where rehabilitation has not been completed	Contractor

Table 6-1: Key Monitoring Controls						
ID	**Topic**	**KPI**	**Methods**	**Periodicity**	**Location**	**Responsible Party**
(Note: this is a monitoring control required to ensure compliance with management control CHSS18)						

APPENDIX 7
DEVELOPER POLLUTION PREVENTION MANAGEMENT PLAN

Intended for
Bugesera Airport Company Limited

Date
February 2018

Project Number
170000022-001

NEW BUGESERA INTERNATIONAL AIRPORT
DEVELOPER POLLUTION PREVENTION PLAN

Bugesera Airport Company

NEW BUGESERA INTERNATIONAL AIRPORT
DEVELOPER POLLUTION PREVENTION PLAN

Project No.	**1700000222-001**
Issue No.	**2**
Date	**February 2018**
Made by	**Sheenagh Mann, Marylise Schmid, Carl Bailey, Steve King**
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Version Control Log

Revision	Date	Made by	Checked by	Approved by	Description
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DOCUMENT CONTROL

File Name	Pollution Prevention Plan
Document Number	
Description	
Original Author	
Creation Date	
Approved By	
Approval Date	
Change Record Number	

Revision	Revision Date	Authors	Approved By	Revision Notes

1. INTRODUCTION

1.1 Purpose

The Bugesera Airport Company Limited (BAC, the "Developer") has overall responsibility for the delivery of the New Bugesera International Airport Project, (the "Project"). The Engineering, Procurement and Construction (EPC) Contractor, Mota-Engil Engenharia e Construção Africa - Rwanda (MEECARW) and its sub-contractors (collectively, the "Contractor") and is responsible for the construction of the Project.

This document is the Developer Pollution Prevention Plan for the construction phase of the Project. This Management Plan is appended to the overarching Construction Environmental and Social Management Plan (Developer C-ESMP) and as such must be read in conjunction with it. The purpose of this Management Plan is to avoid or minimise the environmental and/or social risks and impacts of the Project in relation to pollution. To fulfil this purpose, this Management Plan will:

- define the scope of the pollution prevention activities;
- define the responsibilities for its implementation;
- outline the applicable Project Standards relevant to pollution prevention;
- define the management and monitoring controls related to traffic (primarily based on commitments made in the Project ESIA); and
- sign-post supporting materials and information.

1.2 Application

The management and monitoring controls set out in this Management Plan apply to all Project construction activities including those of the Contractor.

This Management Plan will be reviewed every year as a minimum to determine whether any changes or updates are required to the plan unless a more frequent update is required to reflect changing Project design or procedures.

1.3 Authority and Management

The Developer's Health, Safety and Environment (HSE) Management is the custodian of this Developer Pollution Prevention Plan. Any requests for changes to this Management Plan must be addressed to this person and will be subjected to the appropriate review and approval processes as outlined in the Management of Change Procedure described in the C-ESMP.

2. SCOPE

2.1 Scope of this Pollution Prevention Plan

This Management Plan covers the management of pollution prevention for Air Quality, Noise and Vibration, Geology and Soils and Water Resources considerations arising from construction activities, including materials handling infrastructure and on-site and off-site transport, which may significantly impact on people, communities and the surrounding environment.

Occupational exposure is not covered by this Management Plan and will be addressed by the Contractor CIPs. Where Project construction is also responsible for ancillary activities (i.e. on-site power generation during construction) or off-site transport (i.e. truck movements to the quarry), these activities are also under the scope of this Management Plan.

2.2 Overlaps with Other Management Plans

This Management Plan is part of the suite of Developer C-ESMPs developed for the Project as follows:

- Developer Labour, Working Conditions and Employment Management Plan;
- Developer Waste Management Plan;
- Developer Biodiversity Management Plan;
- Developer Community Health, Safety and Security Plan;
- Developer Stormwater Management Plan;
- **Developer Pollution Prevention Plan**;
- Developer Soil Management Plan;
- Developer Traffic Management Plan; and
- Developer Cultural Heritage Plan.

Figure 2-1 below illustrates the relationship between the Developer Environmental and Social Management System (Developer ESMS), the Developer C-ESMP and the appended suite of C-ESMPs, the Developer Overarching Operation Phase ESMP (Developer O-ESMP) and other Operation Phase ESMPs (O-ESMPs), the Contractor Construction Implementation Plans (CIPs) and the Contractor Operation Implementation Plans (OIPs).

The Contractor CIPs and OIPs will align with the Developer C-ESMPs and O-ESMPs, respectively. The OIPs and O-ESMPs will be developed at a later stage of the Project.

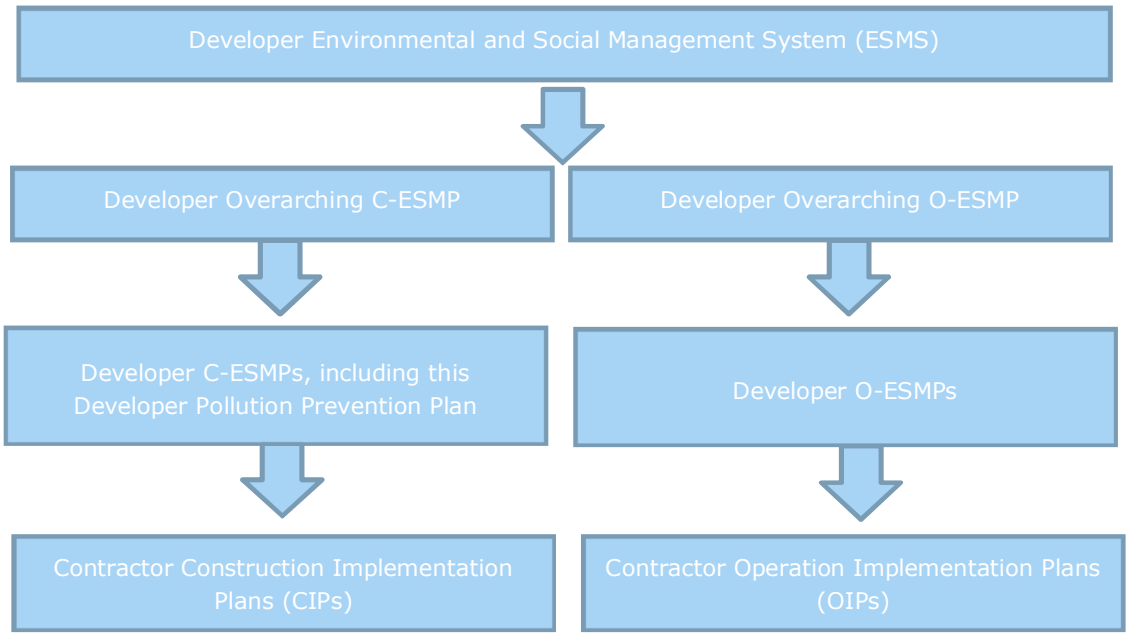

Figure 2-1: Environmental and Social Management Flowchart

3. ROLES AND RESPONSIBILITIES

3.1 Key Roles and Responsibilities for Management Plan Implementation

The Developer has overall responsibility for the delivery of the Project. The Contractor is responsible for the construction of the Project. Responsibility for implementation of the management and monitoring controls set out in this Management Plan are split between Developer and Contractor as detailed in tables provided in Sections 5 and 6.

The overarching roles and responsibilities for implementation of the C-ESMPs is provided in the overarching Developer C-ESMP.

The Developer is responsible for:

- Ensuring adherence to this Management Plan; and
- Ensuring that the evaluation of the management and monitoring controls set out in this Management Plan takes place to ensure they are effective.

The Contractor is responsible for:

- Adhering to this Management Plan; and
- Ensuring alignment of the relevant CIP to this Management Plan and providing more details on how controls will be implemented and by whom.

4. PROJECT STANDARDS

A list of applicable standards for the construction phase, including International law, Lender standards and national legislation is presented in the overarching Developer C-ESMP. A summary of specific Project Standards to be adopted for pollution prevention in the construction phase are summarised in Table 4-1. There are no specific standards applicable to water resources and soils/contaminated land from the standards or guidance documents listed in the overarching Developer C-ESMP.

The Project will comply with national standards and applicable lender standards, with the more stringent standards representing the Project Standards.

Table 4-1: Project Standards

Air Quality				
IFC Air Quality Standards (WHO Quality Guidelines)				
Pollutant	**Period**	**Guideline Value (µg/m³)**		
Particulate Matter PM_{10}	Daily (24 Hours)	50[1]		
	Year	20		
[1]The PM_{10} guidelines for daily average may be exceeded up to 3 times per year (i.e. 99.2th per-centile)				
Noise and Vibration				
GIIP Noise Guidelines (dB)				
Pollutant	**Receptor**	**Daytime 07:00 – 18:00 hrs (LAeq 11hr)**	**Daytime 18:00 – 22:00 hrs (LAeq 1hr)**	**Night Time 22:00 – 07:00 hrs (LAeq 1hr)**
Noise (outside buildings)	Residential; institutional; educational	70	70	45

For the air quality pollutants, only PM_{10} has been listed as the other emissions (nitrogen oxides (NO_x), sulphur dioxide (SO_2), carbon monoxide (CO) and benzene from diesel and petrol-powered equipment, vehicles and machinery) would be limited during the construction phase compared to the dust emissions. Further detail on the justification for this approach is provided in Chapter 9: Air Quality.

5. MANAGEMENT CONTROLS

5.1 Environmental and Social Aspects and Impacts

The purpose of this Management Plan is to minimise pollution related impacts during the Project construction activities. This includes impacts on biota, people and surrounding environment. GIIP is accomplished through identifying, evaluating and prioritising the sources according to the significance of potential impacts and then taking effective measures to design and implement appropriate controls.

5.1.1 Air Quality

This section includes information on how air pollutant emissions and the potential impacts from construction activities are identified and minimised. During construction, there are a number of activities that have the potential to result in air emissions of fugitive particles. The following activities, that are typical sources of fugitive particles in construction, were considered in the assessment:

- Vegetation clearing and topsoil removal;
- Earth moving and cut and fill operations;
- Equipment movements;
- Mobile debris crushing equipment;
- Vehicular transport (loading, unloading and hauling of material, track out of dirt on paved roads and subsequent dust resuspension);
- Specific building activities such as concrete, mortar and plaster mixing, drilling, milling, cutting, grinding, sanding welding and sandblasting activities;
- Various finishing activities;
- Windblown dust from temporary unpaved roads and bare construction sites;
- Fugitive dust emissions from the asphalt/concrete batching plant; and
- Particle resuspension over the unpaved quarry road.

5.1.2 Noise and Vibration

This section includes information on how to minimise noise and vibration impacts on the surrounding environment and communities. This includes impacts on fauna, people and surrounding land uses. The main activities with respect to noise and vibration during the construction of the airport and the Expressway include:

- Vegetation clearing and removal of topsoil using bulldozers, tipper trucks, dump trucks, excavators, front loaders and motor scrapers;
- Construction of Expressway, airport runway and other paved areas (taxiways, terminal areas, parking lots, etc.) using graders, road rollers, paving machinery, vibrators and tipper trucks;
- Airport building construction using tipper trucks, excavators and cranes;
- Asphalt/concrete batching plants operation; and
- Transport on the quarry road using tipper trucks (and to and from the asphalt/concrete batching plants).

5.1.3 Geology and Soils

This section includes information on how to protect the underlying geology and soil resources from contamination. The following construction activities have the potential to release contaminants:

- Construction and running of the Construction Camp;
- Earthworks including a large scale cut and fill operations and the use of borrow pits;
- General construction activities – highway construction, water and wastewater treatment plants, temporary buried pipeline connecting Lake Kidogo to the water treatment plant, temporary asphalt and concrete plants, and construction of airport infrastructure; and
- Aggregate supply from the Bugesera Quarry 10 km to the northeast of the Construction Camp and quarry road upgrades.

5.1.4 Water Resources

This section includes information on how to ensure efficient, safe and sustainable management and protection of water resources, ecosystems and local communities around the Project.

Typical potential pollutants from construction sites include suspended solids, oils and hydrocarbons, cement and concrete products, asphalt, heavy metals and metalloids, bentonite, dust and solvents/paints. Sources of these pollutants can include excavations, stockpiles, fuel storage tanks, general bitumen and batching-plant use, maintenance of machinery, equipment and vehicles, and accidents and spillages. The risk of impact from enhanced sedimentation loading of watercourses, as well as flood risk enhancement resulting from disturbances to watercourses, will be a particular factor during the construction phase. Such effects will be particularly enhanced during the rainy seasons.

There is also a risk to ecosystems and livelihoods if the abstraction of water from Lake Kidogo during the construction phase exceeds a certain threshold level as detailed in Table 6-1 below (WRM03). This may be particularly enhanced during the dry seasons. Monitoring and management of this issue is specified in the tables below to ensure appropriate management and minimisation of risks associated with this operation.

5.1.5 Landscape and Visual

This section includes information on how to minimise landscape and visual impacts on the surrounding community. The following construction activities have the potential to create an impact:

- Site clearance and disposal of arisings;
- Establishment of Construction Camp and associated offices and welfare facilities at the Proposed Project Area;
- Creation of open excavated areas and trenches;
- Road widening, upgrading and maintenance and construction of temporary ditches, borrow pits, spoil heaps and other changes to ground surface conditions;
- Stockpiling and material storage;
- Increased vehicle movements, including construction vehicles, heavy goods vehicles and small light utility vehicles;
- Artificial light sources associated with security lighting, lighting of work areas and compounds, as well as site vehicles and plant;
- Construction of airport structures and infrastructure;
- Establishment of associated structures and infrastructure, including upgrades to the existing quarry road to facilitate use of the quarry as a source of aggregate, construction for the Proposed Project, and construction of the Expressway and installation of the Water Pipeline; and
- Landscape works associated with public realm and external spaces in and around the Airport Footprint.

5.2 Implementation of Management Controls

Management and mitigation measures (primarily derived from the Project ESIA) are elaborated on and will be implemented through the Key Management Controls as described in Table 5-1.

Each Management Control has been assigned a unique identification number (ID) to enable traceability and tracking from source of origin to implementation and vice versa. This is to demonstrate transparency in the environmental and social management process. The same Management Control IDs will be referenced by the Contractor in the relevant CIPs to demonstrate alignment with the Developer's C-ESMPs.

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
Air Quality				
AQ01	Deterioration of ambient air quality (mainly due to fugitive dust emissions and notably PM_{10}) resulting from earthworks and construction equipment	a) Vehicle speed limitations, particularly close to sensitive receptors (to be determined on a case by case basis to reduce dust emission although typically < 20-30 km). b) Restriction on vehicular usage in off-road areas). c) Limiting earthwork activities during high winds. d) Minimising dust from material handling sources, such as conveyors and bins, by using covers and/or control equipment (water suppression, bag house filters or cyclones). e) Minimising dust from open area sources, including storage piles, by using control measures such as installing enclosures and covers, and increasing the moisture content, especially during windy periods. f) Dust suppression techniques, such as road sweeping, applying water or non-toxic chemicals to minimise dust from vehicle movements. g) Management of emissions from mobile sources, including use of new vehicles and/or adequate maintenance of vehicle and equipment. h) Measures within the Western Regional Air Partnership's (WRAP) Fugitive Dust Handbook[1] will be applied wherever practicable. i) In line with Rwandan regulations, vehicle fuel with a low sulphur content will be used. j) Prolonged storage of debris on-site will be avoided. k) Sheeting potentially dusty vehicle loads will be undertaken to prevent any escape of materials. l) Any oil containing equipment or containers must be managed in a manner to avoid oil exposure to atmosphere to limit evaporation of volatiles to the atmosphere.	Contractor	• Incident Records • Site Walkover Inspection records • Grievance Register in Grievance Mechanism • Vehicle and Equipment Inspection Records

[1] Western Regional Air Partnership (WRAP), 2006, Fugitive Dust Handbook, Western Governors' Association.

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
		m) No burning of waste, such as plastic bags, cement bags and litter will be permitted on site. n) Shade cloth fencing is to be used to reduce dust aggravation. o) The number of vehicles authorised in the construction camp, work zones and internal roads will be limited to construction vehicles only, while other vehicles will be required to park in designated areas. p) Odours from chemical toilets (when in use) are to be minimised by regular cleaning and use of odour suppressant chemicals where possible. q) Use of low emission vehicles for all BAC-related transport purposes, including buses for workers travelling to/from the Construction Camp. r) Regular vehicle maintenance with monitoring and enforcement of emission standards.		
Noise and Vibration				
NV01	Noise and vibration annoyance to dwellings along the quarry road, outside the Airport Area boundary and along the Expressway during construction	a) All equipment, machinery and vehicles are to be kept in good working order and inspected regularly to ensure integrity and reliability and prevent excessive noise and vibration. b) Quarry equipment and machinery such as crushers are to be enclosed (see item k below) to minimise noise within the area. c) Vehicles and equipment will be used in accordance with manufacturer guidelines. Vehicles/equipment will be replaced when necessary. d) Silencers or reduced sound compressors fitted with enclosures and other noise reduction features will be used wherever possible. e) Silencers or mufflers will be fitted to pneumatic tools. f) Operatives and workers on site will be trained to undertake construction activities using methods to reduce noise. g) Low impact techniques will be used wherever practicable. h) Materials will be handled with care, such as lowering rather than dropping items.	Contractor	• Vehicle and Equipment Inspection Records • Grievance Register in Grievance Mechanism

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
		i) Unnecessary noise (such as engines idling between operations, shouting, loud radios or excessive revving of engines) will be avoided by effective site management. j) The distance between noise producing equipment/works and sensitive receptors will be maximised by siting stationary plant and loading/unloading areas away from sensitive receptors. k) Temporary barriers will be built around fixed equipment causing high noise emissions, to the extent practicable. l) All construction workers will be provided with adequate hearing protection to be used when necessary. m) Fixed speed limits will be implemented in all areas, determined on a case by case basis, typically <20-<30 km/h in areas in the vicinity of sensitive receptor locations. n) When possible, the deliveries of materials will be scheduled to arrive during daytime hours. o) When possible, construction work near sensitive receptors will be limited to daytime hours, 07:00 – 22:00 aiming at meeting to noise guideline of LAeq = 45 dB at sensitive receptors. p) Where possible operations which result in undue noise will be kept to a minimum by ensuring that these activities only take place during normal working hours. q) All engineering controls (as detailed above) will be set in place to reduce any high noise machinery or activities. r) Neighbours are to be given at least three (3) days warning prior to any 'noisy' activities.		

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
Geology and Soils				
GS01	Unplanned release event (e.g. release of hazardous substance due to spillage or catastrophic tank failure) resulting in contamination of soil resources	a) Installation of boreholes to assess the potential for shallow perched groundwater to be present, allowing for improved conceptual understanding of potential pathways for soil contamination. b) Storage of potentially hazardous liquids and solids (including diesel, oils, lubricants etc.) in appropriate containers with a minimum of secondary containment. In accordance with GIIP, appropriate secondary containment structures will be capable of containing 110% of the largest tank or 25% of the combined tank volumes in areas with above-ground tanks with a total storage volume equal or greater than 1,000 litres and will be made of impervious, chemically resistant material. c) Fuel tanks must meet GIIP - IFC General EHS Guidelines on Hazardous Materials Management and be elevated so that leaks are easily detected. d) Regular inspections of containment areas. e) Plant storage and refuelling in designated areas that have impermeable surface covering to prevent potential migration of spillages to ground. f) Appropriate storage and transfer of hazardous waste materials in accordance with local waste management regulations. g) Signage clearly stating hazardous substance type. h) Implementation of procedures and defined schedules for maintenance of assets and ageing asset replacement criteria, in particular for: fuel storage and distribution assets, interceptors, drainage and hazardous material containment measures. i) Key personnel to be trained in the appropriate handling, storing and disposal of hazardous liquids and solids and be aware of the potential impacts. j) Provision of spill containment kits where potentially hazardous liquids and solids are in use together with training of key personnel in relation to implementation of spill response measures.	Contractor	• Inspection Records • Incident Records in the event of an unplanned release

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
		k) The maintenance of vehicles and equipment used for any purpose during the construction phase will take place only in the maintenance yard area within the construction camp. l) Where emergency repairs take place on vehicles or machinery outside the maintenance yard, ensure that all wastes (e.g. spare parts and oils) are removed from site as soon as possible and managed appropriately. Whenever practical a tarpaulin must be laid down, prior to emergency repairs taking place, to protect any spillage from contaminating the environment. m) Ensure that all allocated areas for the construction camp, access roads and internal roads do not encroach areas outside of the Project footprint. n) In case of vehicle-related spills a rapid response team will be formed, trained and be on standby to be mobilised in the event of spillage of hazardous materials. o) Spill response equipment (absorbents etc.) will be available in all vehicles carrying hazardous cargo. p) Environmental risk assessments to be undertaken when considering waste water discharge and solid waste options and locations. These risk assessments will assess potential human health effects including an evaluation of all relevant exposure pathways (such as watering of crops and drinking water).		
GS02	Identification of previously unidentified soil contamination	a) Targeted assessment of identified potential localised sources of contamination (if present) ahead of construction to allow assessment and management/remediation. b) Inclusion and implementation of a Chance Finds Procedure to include previously unidentified contaminated land. c) Completion of awareness training sessions for all key personnel that may need to react to a chance find of contamination. d) Use of appropriate personal protective equipment (PPE) during groundworks. e) Deployment of immediate control measures to limit the potential mobilisation of contamination including:	Contractor	• Inspection Records • Chance Finds Procedure • Incident Records in the event of a chance find

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
		– Isolation of the area affected from worker access and traffic movement. – Isolation of potential pathways to sensitive environmental receptors (e.g. preventing rainwater runoff towards streams and other waterbodies). – Coverage of the area to prevent contaminant migration through wind erosion or rainwater infiltration. – Installation of appropriate signage to alert people of the identified hazard. – Characterisation of the material to facilitate assessment of the most appropriate remedial approach. f) Implementation of defined remedial strategy (if required).		
Water Resources				
WR01	Construction near waterbodies resulting in increased surface water runoff and/or disruption to surface water flows (Note: these controls are also included in the Developer Stormwater Management Plan)	a) Temporary surface water management measures will be installed during construction to manage surface water runoff and for pollution control prior to the permanent measures being in place, notably during the earthworks phase. b) The temporary drainage infrastructure will include standard pollution mitigation measures, such as silt traps, cut-off trenches and bunding (oil/water interceptors will be added as part of the operational phase drainage infrastructure as soon as practicable into the construction phase). c) There will be no discharges to water bodies. In the event that any are required, consents will be obtained from the relevant authorities. There will be no discharge, of any kind, to Lake Kidogo. d) Any temporary attenuation provided during construction will be designed so as to minimise the risk of mosquitoes and waterborne/mosquito-borne disease. e) The natural flow of rivers or streams will not be permanently diverted or blocked. f) Maintain adequate through flows to downstream aquatic ecosystems to protect aquatic life, and prevent the interruption of existing downstream uses.	Contractor	• Inspection records • Construction plans and engineering design statements • Temporary drainage and pollution control infrastructure plans • Staff training records

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
		g) The bridge piers for the river crossings will be designed and constructed such that there are no significant impacts with regard to scour and erosion. h) Where any culverts are used for road passage, these locations will be individually assessed, designed and installed to ensure adequate flow of flood waters and to avoid significant erosion upstream and downstream of the culvert. i) The use of scaffolding and temporary structures in the rivers will be avoided. j) Restore disturbed areas as soon as practicable to establish vegetation to protect from soil erosion. Use temporary soil protection if required. k) Site induction, toolbox talks and training of all personnel to raise awareness of water issues and pollution control.		
WR02	Construction in or near waterbodies resulting in surface water pollution (Note: these controls are also included in the Developer Stormwater Management Plan and Developer Waste Management Plan and Developer Biodiversity Management Plan)	a) Temporary surface water management measures will be installed during construction to manage surface water runoff and for pollution control prior to the permanent measures being in place notably during the earthworks phase, as detailed in the relevant CIP. b) The temporary drainage infrastructure will include standard pollution mitigation measures, such as silt traps, cut-off trenches and bunding (oil/water interceptors will be added as part of the operational phase drainage infrastructure as soon as practicable into the construction phase). c) Sludge/silt from stormwater/drainage catchments will be removed periodically to maintain the functionality of catch pits, swales and ponds and may contain pollutants. It will therefore be disposed in compliance with regulatory requirements. d) There will be no discharges to water bodies. In the event that any discharges are required, consents will be obtained from the relevant authorities. There will be no discharge, of any kind, to Lake Kidogo. e) No vehicles will be permitted to access any surface waterbody, unless access is required for construction purposes with approval from local authorities obtained where necessary (see WR04);	Contractor	• Inspection records • Construction plans and engineering design statements • Temporary drainage and pollution control infrastructure plans • Waste management control records including waste

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
		f) Working in Mwesa and Kibilizi rivers, as ephemeral streams, will be avoided during periods when flash floods may occur (especially March and April), to reduce the risks of erosion. g) Working near waterbodies will be timed to avoid periods critical to valued flora and fauna. h) Construction Camp and storage areas will be situated well away from surface water receptors, and facilitated with temporary drainage measures designed to prevent pollution of nearby watercourses. These might include trench drains, oil interceptors, catch pits and attenuation ponds. i) Storage of materials and wastes will be in accordance with GIIP, such as bunded trays or leak proof containers for hazardous materials and waste. This includes storage of fuel at water abstraction station at Lake Kidogo. j) No materials are to be stored in unstable or high-risk areas such as floodplains or on steep slopes. k) The concrete batching plant(s) will be situated on hardstanding and will benefit from a dedicated surface water drainage system to prevent uncontrolled runoff of concrete sludge and sediments. Concrete washout shall be undertaken at a dedicated location, and all waste arisings from concrete washout shall be retained and collected for waste disposal in line with regulatory requirements. There will be no uncontrolled effluent from concrete washout or waste concrete and no effluent will be allowed to reach surface waters. l) Refuelling will be undertaken on hardstanding at the construction camp well away from surface water receptors and will be undertaken using appropriate refuelling catchments e.g. drip trays. Emergency procedures will be in place to prevent or reduce pollution in the event of an incident. m) Oil spill kits will be kept on site and staff trained in their use. n) Effluent from all construction site sanitation, kitchens and other facilities will be collected and taken from site as waste in compliance with local regulatory requirements. No grey water or sewage effluent will be discharged from the site		removal and disposal records and incident reports • Training records

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
		to surface water or soil during construction. All fixtures and fittings will be checked on a regular basis for leaks. o) When making use of a septic tank system, the location of the sub-surface tank will be clearly demarcated in order to prevent damage by equipment and vehicles moving over it. p) When making use of portable chemical toilets, these must be secured to the ground in order to prevent them from being blown over by the wind or thrown over by animals. q) Septic tanks and portable chemical toilets must be serviced at least once a week by an approved/accredited service provider. r) Ensure that all proof of safe disposal of waste generated from the sanitation area is kept for audit purposes. s) Bathing or washing of clothes, equipment or machinery within any waterbody will be prohibited. t) Ensure that equipment/vehicles to be used near waterbodies are in good working condition so as to eliminate the possibility of contamination of water bodies with hydrocarbons. u) Site induction, toolbox talks and training of all personnel to raise awareness of water issues and pollution control.		
WR03	Water extraction from Lake Kidogo to meet construction water supply demand	a) Implement water conservation measures that ensure water usage is minimised including: – Rainwater harvesting for use onsite. – Increased personnel awareness through training. b) Water consumption from Lake Kidogo will be monitored, recorded and reported on a monthly basis (see monitoring controls). c) Water levels within Lake Kidogo will be monitored on a weekly basis (see monitoring controls).	Contractor	• Water consumption monitoring records • Lake level monitoring records • Training records

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
		d) Should lake levels reduce significantly (i.e. to the bottom edge of the papyrus swamps), water extraction will cease or reduce until levels are restored and water sourced from elsewhere, if necessary.		
WR04	Government Authorisations for waterbodies	a) Relevant authorisations and permits will be obtained for the following activities prior to these activities occurring on site: – Works in/on waterbodies (should this become necessary as this is currently prohibited). – Lake Kidogo water abstraction.	Developer	• Authorisation and/or Permit Documentation
Landscape and Visual				
LV01	Impact on form and cover of landscape	a) Phased development. b) Positioning of the proposed Water Pipeline below ground. c) Use of dust suppressant. d) Sympathetic, low rise terminal building designs. e) Appropriate lighting management. f) Control of working areas/widths. g) Restriction on the size and duration of spoil heaps and stockpiles. h) Concurrent construction and re-instatement process.	Contractor	• Inspection records
LV02	Impact upon baseline character/ characteristics of landscape	a) Phased development. b) Use of dust suppressant. c) Use of existing tracks and roads. d) Restriction on the size and duration of spoil heaps and stockpiles. e) Control of construction lighting. f) Concurrent construction and re-instatement.	Contractor	• Inspection records

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
LV03	Impact upon visual amenity of settlements	a) Phased development. b) Use of dust suppressant. c) Use of existing tracks and roads. d) Control of working areas/widths. e) Restriction on the size and duration of spoil heaps and stockpiles. f) Control of construction lighting. g) Concurrent construction and re-instatement.	Contractor	• Inspection records
LV04	Impact upon visual amenity of road users	a) Phased development. b) Use of dust suppressant. c) Use of existing tracks and roads. d) Control of working areas/widths. e) Restriction on the size and duration of spoil heaps and stockpiles. f) Control of construction lighting. g) Concurrent construction and re-instatement.	Contractor	• Inspection records

6. MONITORING CONTROLS

6.1 Definition of Monitoring

For the purposes of this Project and this Management Plan, monitoring is defined as a repeated action undertaken to determine the:

- quality of environmental media potentially impacted by the Project (e.g. taking samples of air/water/soil or surveying flora/fauna);
- compliance against threshold targets (e.g. recording measurements for air emissions/water discharges/sediment runoff/noise emissions/vibration, etc.) generated by the Project; or
- performance of a management control (e.g. inspection observations during regular site walkovers).

Monitoring does not therefore include one off actions, for example, undertaking specific surveys/assessments, adhering to ongoing standards/rules/prohibitions, installation of equipment for protection/preventative purposes, training, maintaining equipment and vehicles. These are considered to be management controls.

6.2 Implementation of Monitoring Controls

The monitoring controls to be implemented during construction to ensure compliance with the Project Standards, are described in Table 6-1 below. This includes Key Performance Indicators (KPIs) to help assess the efficacy of implementation. As indicated in Table 6-1, all monitoring controls will be recorded and/or reported.

In the event that monitoring results identify non-conformance with Project Standards, these will be reported, investigated and corrective actions identified and implemented.

Table 6-1: Key Monitoring Controls						
ID	**Topic**	**KPI**	**Methods**	**Periodicity**	**Location**	**Responsible Party**
Air Quality						
AQM01	Non-Compliance with Air Quality Standards	Number of reported air quality related incidents per year HSE Inspections Checklist Target: 0 per year Threshold: 5 per year	Routine inspections will be carried out by the Contractor using an Environmental Inspection Checklist; Incidents will be reported.	Weekly	Areas of key construction activity	Contractor
AQM02	Grievances	Number of recorded air quality related community grievances per year (as recorded through the Grievance Mechanism in the Grievance Register). Target: Minimise air quality related community grievances Threshold: Objective is zero. If non-compliances are recorded, investigate any grievances in relation to air quality and take appropriate action within timeframe specified in the Grievance Mechanism	Review of the Grievance Register in the Grievance Mechanism for any air quality related grievances from local communities. All grievances logged, responded to and closed out.	Weekly	Project Area	Developer

Table 6-1: Key Monitoring Controls						
ID	**Topic**	**KPI**	**Methods**	**Periodicity**	**Location**	**Responsible Party**
Noise and Vibration						
NVM01	Non-Compliance with Noise and Vibration Standards	Number of reported noise and vibration incidents per year. Target: 0 per year Target maximum: 5 per year	Routine inspections will be carried out by the Contractor using an Environmental Inspection Checklist; Incidents will be reported.	Weekly	Areas of key construction activity	Contractor
NVM02	Grievances	Number of recorded noise and vibration related community grievances per year (as recorded through the Grievance Mechanism in the Grievance Register). Target: Minimise noise and vibration related community grievances Threshold: Objective is zero. If non-compliances are recorded, investigate any grievances in relation to noise and vibration and take appropriate action within timeframe specified in the Grievance Mechanism.	Review of the Grievance Register in the Grievance Mechanism for any noise and vibration related grievances from local communities. All grievances logged, responded to and closed out.	Weekly	Project Area	Developer

Table 6-1: Key Monitoring Controls						
ID	**Topic**	**KPI**	**Methods**	**Periodicity**	**Location**	**Responsible Party**
Geology and Soils						
GSM01	HSE Inspections	Number of reported non-compliances with the mitigation controls identified in this Plan Target: Zero	Routine inspections will be carried out by the Contractor using an Environmental Inspection Checklist; Incidents will be reported. Minimise and continued improvement in number of reported non-compliances	Weekly	Areas of key construction activity	Contractor
GSM02	Hazardous materials release	Number of reported incidents of hazardous material releases leading to actual or potential harm to humans or the environment. Target: Zero	Minimise and continued improvement in number of reported incidents	Weekly	Project area and all storage/handling areas for hazardous materials	Contractor
Water Resources						
WRM01	Grievances	Number of recorded water-related complaints from local communities per year. Target: Minimise water related community grievances Threshold: Objective is zero. If non-compliances are recorded, investigate any grievances in relation to water and take	Review of the Grievance Register in the Grievance Mechanism for any water related grievances from local communities. All grievances logged, responded to and closed out.	Weekly	Project Area	Developer

Table 6-1: Key Monitoring Controls

ID	Topic	KPI	Methods	Periodicity	Location	Responsible Party
		appropriate action within timeframe specified in the Grievance Mechanism.				
WRM02	HSE Inspections	Number of reported non-compliances with the mitigation controls identified in this Plan. Target: Zero	All surface water management systems, pollution control measures and appropriate storage and handling of materials will be checked. Any issues will be addressed immediately and recorded as non-compliances. Routine visual inspections will be carried out using an Environmental Inspection Checklist to check: h) Surface water runoff; i) Soil erosion; j) Earth, mud and debris depositions; and k) Potential spillage in construction areas. Incidents will be reported.	Weekly	All main workplaces, particularly near waterbodies	Contractor
WRM03	Lake Kidogo (see related management control WR03c)	Water levels Target: No significant decrease in water levels in Lake Kidogo below observed minimum levels Threshold: Bottom edge of the papyrus swamps	Lake level measurements averaged from three locations around the lake compared to pre-abstraction levels. Lake level recordings compared to pre-abstraction level. Water pipeline flow meter readings.	Weekly	At three nominated locations around the lake: 1) near the outlet where water is being pumped, 2) at a location near papyrus swamp habitat and 3) at a location at some distance away	Contractor

Table 6-1: Key Monitoring Controls						
ID	**Topic**	**KPI**	**Methods**	**Periodicity**	**Location**	**Responsible Party**
WRM04	Lake Kidogo water abstraction (see related management control WR03b)	Water consumption records Target: No significant decrease in water levels in Lake Kidogo below observed minimum levels Threshold: Bottom edge of the papyrus swamps	Check and record water consumption volumes for reporting.	Monthly	Via extraction flow meters	Contractor
WRm04	Lake Kidogo	Water quality Number of reported and confirmed instances of impacts to surface watercourses Target: zero Threshold: 1 – with agreed mitigation	Visual inspection for sediment plumes, oil sheens and other visible signs of pollution Number of reported and confirmed instances of impacts to surface watercourses	Weekly	At water extraction location and one other location remote from this across the lake (for comparison purposes)	Contractor
WRM05	Expressway Corridor	Water quality	Visual inspection for dust on vegetation and sediment plumes, oil sheens and other visible signs of pollution during construction activities.	Weekly	Precise locations to be determined when Expressway alignment has been more fully defined; however, each stream and the Nyabarongo River crossing will be part of inspection as a minimum	Contractor

APPENDIX 8
DEVELOPER STORMWATER MANAGEMENT PLAN

Intended for
Bugesera Airport Company Limited

Date
February 2018

Project Number
1700000222-001

NEW BUGESERA INTERNATIONAL AIRPORT DEVELOPER STORMWATER MANAGEMENT PLAN

Bugesera Airport Company

NEW BUGESERA INTERNATIONAL AIRPORT
DEVELOPER STORMWATER MANAGEMENT PLAN

Project No. **1700000222-001**
Issue No. **2**
Date **February 2018**
Made by **Steve R King**
Checked by **Ailish Enker**
Approved by **Denise Wright**

Made by: Steve R King

Checked/Approved by: 

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1	02/11/2017	SRK	DW	DW	Issue 1
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DOCUMENT CONTROL

File Name	Stormwater Management Plan
Document Number	
Description	
Original Author	
Creation Date	
Approved By	
Approval Date	
Change Record Number	

Revision	Revision Date	Authors	Approved By	Revision Notes

1. INTRODUCTION

1.1 Purpose

The Bugesera Airport Company Limited (BAC, the "Developer") has overall responsibility for the delivery of the New Bugesera International Airport Project, (the "Project"). The Engineering, Procurement and Construction (EPC) Contractor, Mota-Engil Engenharia e Construção Africa - Rwanda (MEECARW) and its sub-contractors (collectively, the "Contractor") is responsible for the construction of the Project.

This document is the Developer Stormwater Management Plan for the construction phase of the Project. This Management Plan is appended to the overarching Construction Environmental and Social Management Plan (Developer C-ESMP) and as such must be read in conjunction with it. The purpose of this Management Plan is to avoid or minimise the environmental and/or social risks and impacts of the Project related to stormwater. To fulfil this purpose, this Management Plan will:

- define the scope of stormwater management;
- define the responsibilities for its implementation;
- outline the applicable Project Standards relevant to stormwater management;
- define the management and monitoring controls related to stormwater (primarily based on commitments made in the Project ESIA); and
- sign-post supporting materials and information.

1.2 Application

The management and monitoring controls set out in this Management Plan apply to all Project construction activities, including those of the Contractor.

This Management Plan will be reviewed every year as a minimum to determine whether any changes or updates are required to the plan unless a more frequent update is required to reflect changing Project design or procedures.

1.3 Authority and Management

The Developer's Health, Safety and Environment (HSE) Management is the custodian of this Developer Stormwater Management Plan. Any requests for changes to this Management Plan must be addressed to this person and will be subjected to the appropriate review and approval processes as outlined in the Management of Change Procedure described in the C-ESMP.

2. SCOPE

2.1 Scope of this Stormwater Management Plan

This Management Plan is applicable to the Project construction phase. It specifies the techniques, procedures and responsibilities for managing stormwater runoff from the Project site during construction activities. This plan is concerned solely with the physical management of stormwater runoff. It should be read in conjunction with the water resources section of the construction phase Developer Pollution Prevention Plan with respect to contaminant monitoring, which is outside the scope of this Plan. This Management Plan includes design phase criteria, measures and discharges (see section 5 Management Controls).

Occupational health and safety exposure is also not covered by this Management Plan. OHS will be covered by the relevant Contractor CIP. Where the Project is also responsible for ancillary activities (i.e. power generation) or off-site transport (i.e. truck movements to the quarry), these activities are also included under the scope of this Management Plan.

2.2 Overlaps with Other Management Plans

This Management Plan is part of the overall suite of Developer Construction -ESMPs developed for the Project as follows:

- Developer Labour, Working Conditions and Employment Management Plan;
- Developer Waste Management Plan;
- Developer Biodiversity Management Plan;
- Developer Community Health, Safety and Security Plan;
- **Developer Stormwater Management Plan**;
- Developer Pollution Prevention Plan;
- Developer Soil Management Plan;
- Developer Traffic Management Plan; and
- Developer Cultural Heritage Plan.

Figure 2.1 below illustrates the relationship between the Developer Environmental and Social Management System (Developer ESMS), the Developer C-ESMP and appended suite of C-ESMPs, the Developer Overarching Operation Phase ESMP (Developer O-ESMP) and other Operation Phase ESMPs (O-ESMPs), the Contractor Construction Implementation Plans (CIPs) and the Contractor Operation Implementation Plans (OIPs).

The Contractor CIPs and OIPs will align with the Developer C-ESMPs and O-ESMPs, respectively. The OIPs and O-ESMPs will be developed at a later stage of the Project.

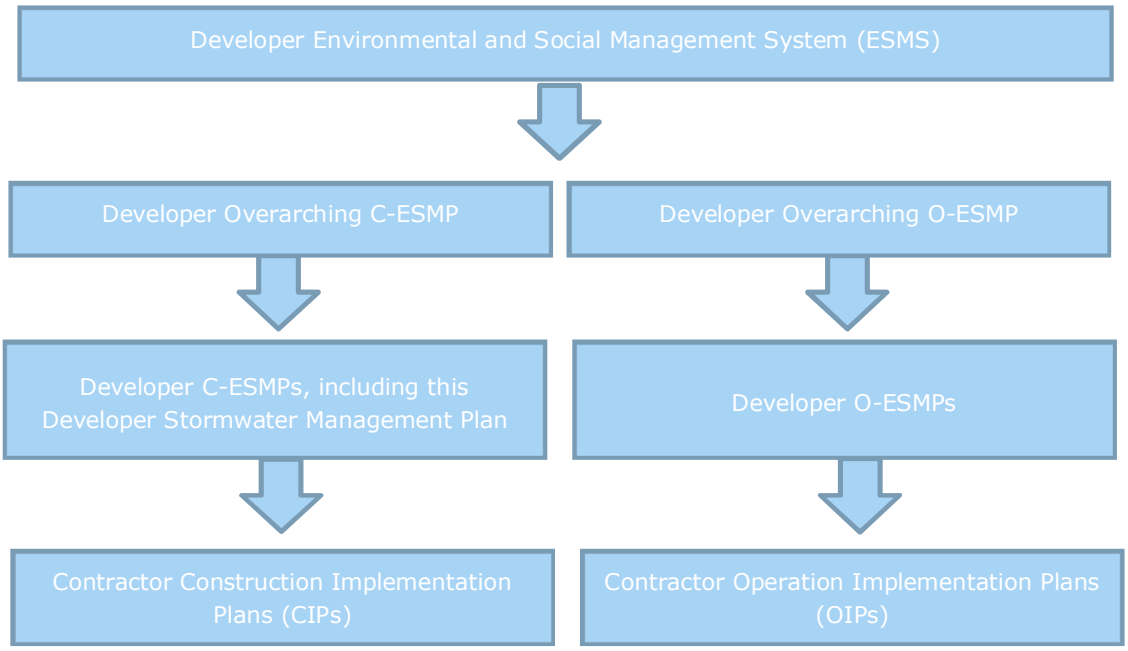


Figure 2-1: Environmental and Social Management Flowchart

3. RESPONSIBILITIES

The Developer has overall responsibility for the delivery of the Project. The Contractor is responsible for the construction of the Project. Responsibility for implementation of the management and monitoring controls set out in this Management Plan are split between Developer and Contractor as detailed in tables provided in Section 5 and Section 6.

The overarching roles and responsibilities for implementation of the C-ESMPs is provided in the overarching Developer C-ESMP.

The Developer is responsible for:

- Ensuring adherence to this Management Plan; and
- Ensuring that the evaluation of the management and monitoring controls set out in this Management Plan takes place to ensure they are effective.

The Contractor is responsible for:

- Adhering to this Management Plan; and
- Ensuring alignment of the relevant CIP to this Management Plan and providing more detail on how controls will be implemented and by whom.

4. PROJECT STANDARDS

A list of applicable standards for the construction phase, including International law, Lender standards and national legislation is presented in the overarching Developer C-ESMP. There are no specific Project Standards for stormwater management that need to be repeated or highlighted here.

5. MANAGEMENT CONTROLS

5.1 General Approach

The purpose this Management Plan is to minimise physical environment impacts to the surrounding environment and communities from stormwater runoff from the Project Area during construction. This includes impacts on biota, people, watercourses, soils and surrounding land use. GIIP is accomplished through identifying, evaluating and prioritising the sources according to the significance of potential impacts and then taking effective measures to design and implement appropriate controls.

Typical potential stormwater related contaminants from the construction phase of the Project include suspended solids, oils and hydrocarbons, cement and concrete products, heavy metals and metalloids, bentonite, dust and solvents/paints. Sources of these contaminants include excavations, stockpiles, fuel storage tanks, general bitumen and batching-plant use, maintenance of machinery, equipment and vehicles, and accidents and spillages. The management and monitoring controls of such contaminants are provided in the Developer Pollution Prevention Plan and are not dealt with further in this Plan.

The risk of impact from enhanced soil erosion and resultant sedimentation loading of watercourses, as well as flood risk enhancement resulting from disturbances to watercourses, will be a particular factor during the construction phase and is the focus of this Management Plan. Such potential impacts and risks will be particularly enhanced during the rainy seasons, and especially during the heavier, earlier rains in April/May.

5.2 Implementation of Management Controls

The stormwater drainage provision for the construction phase of the Airport and Expressway development is designed to cope with the rainfall intensity which was calculated for the permanent drainage infrastructure to be installed at the airport.

The main principle of managing the stormwater runoff from the Airport Area and the Expressway during the construction phase is to provide for the reduction in velocity of the stormwater surface water flow, contain it and then to release it in a controlled manner to the surrounding environment. Management and mitigation measures (primarily derived from the Project ESIA) are elaborated on and will be implemented through the Key Management Controls as described in Table 5-1 below.

Each Management Control has been assigned a unique identification number (ID) to enable traceability and tracking from source of origin to implementation and vice versa. This is to demonstrate transparency in the environmental and social management process. The same Management Control IDs will be referenced by the Contractor in the relevant CIPs to demonstrate alignment with the Developer’s C-ESMPs.

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
STW01	Temporary drainage infrastructure (Note: these controls are also included in the Developer Pollution Prevention Plan)	a) Installation of temporary drainage infrastructure to manage overland flows and siltation. These will be designed to ensure that stormwater runoff volumes and silt will be managed throughout the construction period. Around all spoil areas, borrow pits, construction areas, camp and storage areas, temporary catchment ditches will be constructed which are designed to follow the natural contours of the slopes and include several discharge points along them to contain storm flow and allow controlled discharge in as close a way to the natural surface and slope-flow regime as possible. The permanent drainage infrastructure to be constructed for the operational phase will also include standard pollution mitigation measures for the operational phase as they are constructed and brought on line, such as oil interceptors and silt traps (refer to Developer Pollution Prevention Plan). b) The temporary drainage infrastructure and control measures will consist of a series of V-design cut-off ditches and piped drains. (See Appendix 1 and 2 for generalised locations of these structures, and Appendix 3 for design criteria) These will be designed to intercept surface flows during peak stormwater discharge, contain and gradually release the intercepted volumes over an appropriate time period to avoid flash flood runoff into local watercourses and waterbodies and prevent scour or erosion of the land surface and soils around the Project Area. c) The perimeter drainage V-ditches will be extended as required as construction progresses and if these, or trapezoidal drains (see Appendix 3), are to be in place for any extended period of time, these will be sown with appropriate and locally derived grass seed mix to assist in the control of surface water flow and discharge along and through the drains.	Contractor	• Design plans and specifications • Contractor CIPs (where applicable)

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
		d) Silt curtains consisting of geotextile membranes will be installed at appropriate drainage outfall/ release locations where released flow is anticipated to be greatest to control the release of silt from the constructed drains. These will be installed as construction progresses and based on flow and discharge characteristics in accordance with the landform and runoff control requirements at each discharge location. e) Areas presenting a higher risk in terms of stormwater runoff (and potentially contaminants entrained within them – see Developer Pollution Prevention Plan) e.g. Construction Camp area, hardstanding for re-fuelling and waste storage, etc. will be sited away from any surface water receptors identified in the ESIA and constructed and maintained in accordance with Good International Industry Practice (GIIP). This will include, but not be limited to, isolated and contained drainage, bunding and/or separate sealed tanks with bunds to prevent stormwater runoff from these areas onto unsealed ground.		
STW02	Construction in or near waterbodies including: The Expressway and proposed crossings over the Nyabarongo and Mwesa Rivers. (Note: these controls are also included in the Developer Pollution Prevention Plan and the Developer Biodiversity Management Plan)	a) Appropriate Construction Method Statement to be produced prior to construction of the Expressway river crossings for final sign off by the Developer. Method Statement to include design provisions for control and management of stormwater runoff during construction which will prevent additional storm flow 'spillage' from the construction area into the adjacent watercourses. b) Where any culverts are used for road passage, these locations will be individually assessed, designed and installed to ensure adequate flow of flood waters and to avoid significant erosion upstream and downstream of the culvert. c) Working in ephemeral watercourses will be avoided during periods when flash floods may occur, to reduce the risks of erosion (and contamination).	Contractor	• Road and Water Pipeline Design Documents • Construction Method Statement • Training records

Table 5-1: Key Management Controls

ID	Topic/Aspect	Control Description	Responsible Party	Means of Verification
		d) Working near waterbodies will be timed to avoid periods of high rainfall to reduce the risks of silt runoff as well as periods critical to valued flora and fauna. e) Disturbed banks will be restored to minimise risk of erosion f) Construction activities will be scheduled to minimise the duration of exposure to bare soils on-site, especially on steep slopes. g) Construction camp and storage areas will be situated well away from surface water receptors and all storage of materials and wastes will be in accordance with GIIP, such as bunded trays or leak proof containers for hazardous materials and waste. h) Any refuelling undertaken in construction areas will be in accordance with GIIP, within sealed/bunded areas well away from surface water receptors. i) Oil spill kits will be kept on site and personnel trained in their use. j) All construction vehicles and equipment will be parked a minimum of 32 m from any river or stream bank.		
STW03	Surface Water Investigations	a) Prior to and during construction potential surface water pathways for stormwater drainage from the Project Area will be investigated and reported on in terms of 'viability' as stormwater flow conduits. In particular, (though not exclusively). – The ephemeral (likely seasonal) stream in the south east corner of the Airport Area (possibly originating close to runway construction activities with no potential pathway to Lake Kidogo, 2km away – to be verified). – The ephemeral Mwesa River and tributary of it in the north and north west part of the Airport Area. – Any ephemeral tributaries in the west and south west part of the site which may feed the Kibilizi River.	Contractor	• Pre-construction and construction phase site inspection reports to include reporting on investigation of surface water channels across the construction area.

Table 5-1: Key Management Controls				
ID	**Topic/Aspect**	**Control Description**	**Responsible Party**	**Means of Verification**
STW04	Stormwater Runoff Planning	a) Ensure the stormwater system is functioning correctly and failures or overflowing of the system are controlled/captured if necessary by the construction of emergency bunding or excavation of additional cut off ditch or catch pits close to the failure point to prevent uncontrolled storm surge runoff from the construction area.	Contractor	• Site inspection reports and incident reports (incident reporting for any occurrences of system failure or overflow)
STW05	Discharge Consent Regulations	a) Ensure that any discharge to land from construction area stormwater catchment infrastructure is either exempt from any discharge regulations with the Regulatory Authority/ies or reporting/ notifications are made appropriately.	Contractor	• Consent documentation or record of contact to Regulatory Authority/ies
STW06	Stormwater Diversion	a) Engineered diversion works will be constructed to divert stormwater around any temporary power generation site and away from sources of contamination within the construction area (such as re-fuelling, waste and hazardous waste storage areas) and to direct it to natural watercourses. These diversion drains will comply with the design specifications.	Contractor	• Site inspection reports
STW07	Emergency Response	a) Ensure the inclusion of the following in the provisions for emergency preparedness and response: – drought; – flood; – failures in large water retention structures; or – unplanned effluent discharges resulting from flood events.	Contractor	• Construction stormwater emergency response section in relevant CIP

6. MONITORING CONTROLS

6.1 Definition of Monitoring

For the purposes of the Project and this Management Plan, monitoring is defined as a repeated action undertaken to determine the:

- quality of environmental media potentially impacted by the Project (e.g. taking samples of air/water/soil or surveying flora/fauna);
- compliance against threshold targets (e.g. recording measurements for air emissions/water discharges/sediment runoff/noise emissions/vibration etc) generated by the Project; or
- performance of a management control (e.g. inspection observations during regular site walkovers).

Monitoring does not therefore include one off actions, for example, undertaking specific surveys/assessments, adhering to ongoing standards/rules/prohibitions, installation of equipment for protection/preventative purposes, training, maintaining equipment. These are considered to be management controls.

6.2 Implementation of Monitoring Controls

The monitoring controls that are to be implemented during construction to ensure compliance with the Project Standards, are described in Table 6-1 below. This includes Key Performance Indicators (KPIs) to help assess the efficacy of implementation. As indicated in Table 6-1, all monitoring controls will be recorded and/or reported.

In the event that monitoring results identify non-compliance with Project Standards, these will be reported, investigated and corrective actions identified and implemented.

Table 6-1: Key Monitoring Controls

ID	Topic	KPI	Methods	Periodicity	Location	Responsible Party
STWM01	Routine runoff, erosion, scour and siltation monitoring.	**KPI:** Number of recorded stormwater runoff-related non-compliances with this Plan logged in site reports and construction documents per year. **Target:** Minimise stormwater non-compliances. **Threshold:** Objective is zero. If instances are recorded, target is to eliminate from next recording period.	a) Routine visual inspections will be carried out using an Environmental Inspection Checklist to check: – Surface water runoff; – Soil erosion; – Earth, mud and debris depositions; and – Potential spillage in construction areas. b) Incidents will be reported.	Prior to commencement of construction activities. Bi-annually after each main rainy season**.**	**Airport Area:** All stormwater cut off ditches, collection ponds/pits, siltation traps around the general construction area, with particular attention to 'high risk areas' (re-fuelling area/s, hardstanding, waste storage areas, etc.). Also: condition of, and siltation input into any of the seasonal streams on or adjacent to the site, particularly: i) the seasonal stream located in the south east of the Airport Area and ii) seasonal streams crossed by the Airport Area in the north and western part of the site (see STW03 in Table 5-1) *Reason: To assess any changes to stormwater input or siltation into existing stream channels, additional scour or soil erosion from areas adjacent to construction sites and identification of any remedial works required.* **Expressway:** i) all catchment ditches and swales along the current road construction area and the immediately adjacent land surface to ensure containment systems and	Contractor

Table 6-1: Key Monitoring Controls

ID	Topic	KPI	Methods	Periodicity	Location	Responsible Party
					erosion control are functioning appropriately; ii) any river/stream crossing infrastructure in place to ensure peak flood flow is being adequately accommodated and bank scour or erosion is not being caused or enhanced. *Reason: For assessments of changes to the sedimentation and or erosion adjacent to new road construction areas and along river banks, and identification of remedial engineering measures which may be required.*	
STWM02	Storm event runoff, erosion, scour and siltation monitoring. (Note: Monitoring control to determine effectiveness of management control STW04).	**KPI:** Number of recorded stormwater runoff-related non-compliances with this Plan logged in site reports and construction documents per year. **Target:** Minimise stormwater non-compliances.	Monitor installed cut off ditches, catch pits, interceptors, culverts, swales and discharge locations or zones, to ensure the system is functioning correctly.	During storm events or during notably heavy rainfall events during and immediately after the event and thereafter every 24 hours for a period of 72 hours.	Airport Area and Expressway	Contractor

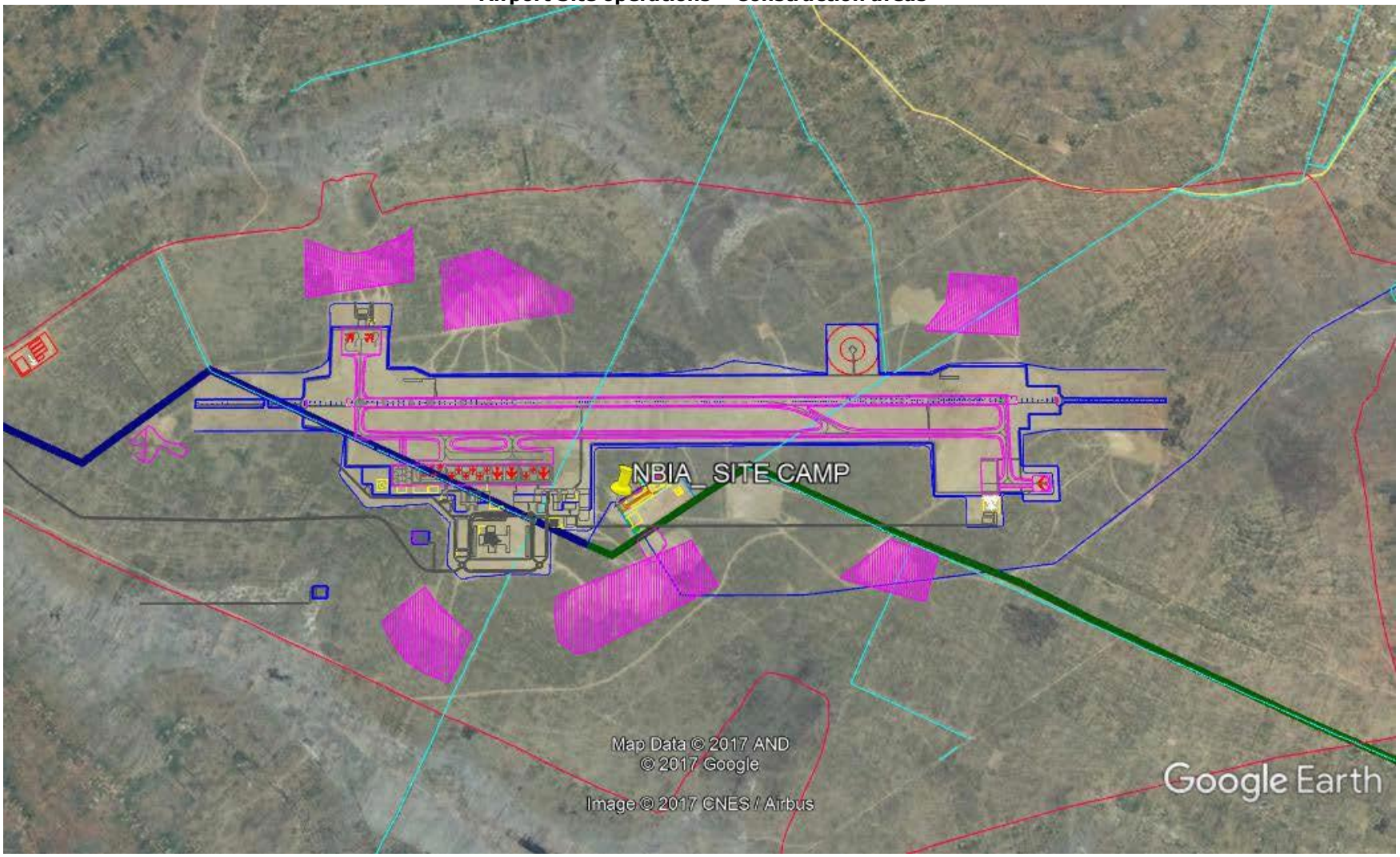
Table 6-1: Key Monitoring Controls

ID	Topic	KPI	Methods	Periodicity	Location	Responsible Party
		Threshold: Objective is zero. If instances are recorded, target is to eliminate from next recording period.				
STWM03	Community Grievances related to stormwater.	**KPI:** Number of stormwater-related grievances from local communities (as recorded through the Grievance Register in the Grievance Mechanism. **Target:** Minimise number of stormwater related community complaints. **Threshold**: Objective is zero. If instances are recorded, target is to eliminate from next recording period.	a) Review the Community Grievance Register for any stormwater related grievances from local communities. b) All community grievances logged, responded to and closed out.	Weekly	Project Area	Developer

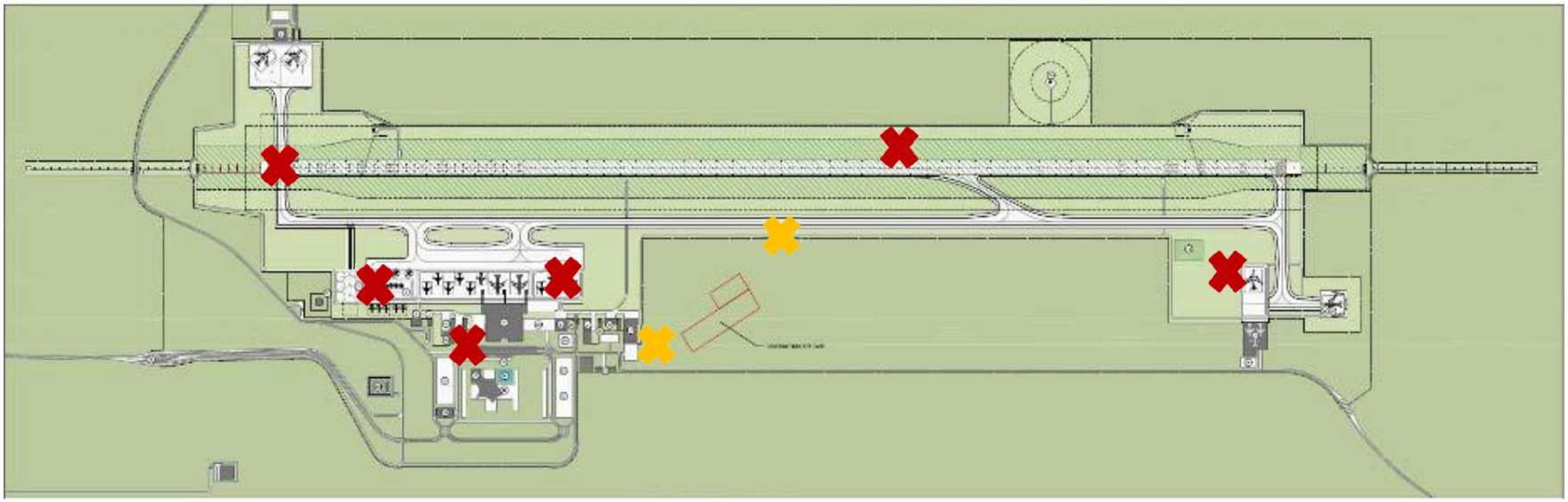
APPENDIX 1
GENERALISED CONSTRUCTION PHASE AREAS AND STORMWATER CONTROL FEATURES FOR THE AIRPORT AREA

Airport Site Construction Activities and Areas

Airport Site operations – Construction areas



1. ACTIVITY LOCATIONS & DESCRIPTIONS

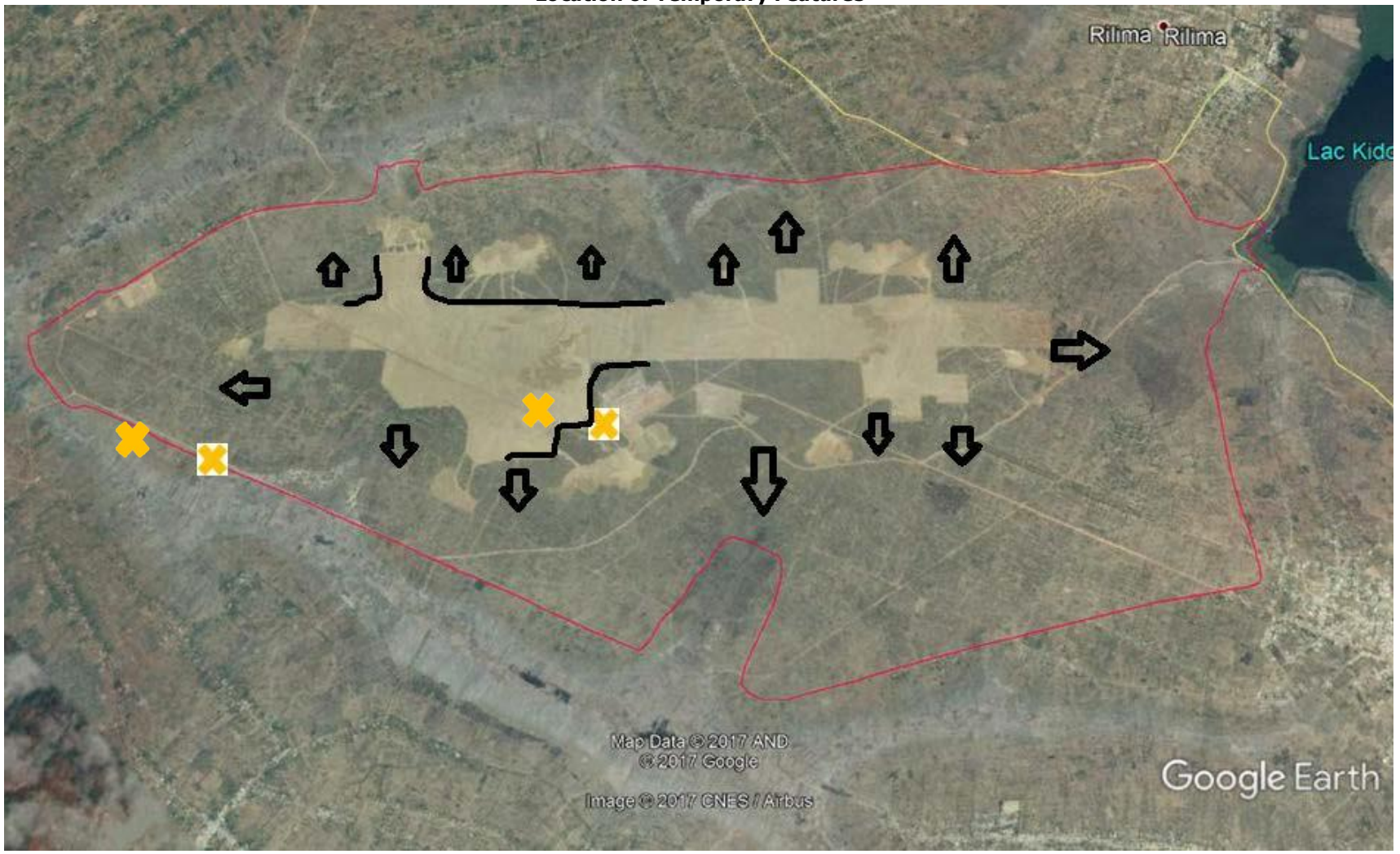


Legend:

- Bulk Earthworks
- Pavements
- Superficial Drainage
- Air Ground Lighting
- Civil Construction (Concrete Structure)
- Civil Construction (Masonry)
- Civil Construction (Utilities)

APPENDIX 2
LOCATION OF TEMPORARY FEATURES

Location of Temporary Features

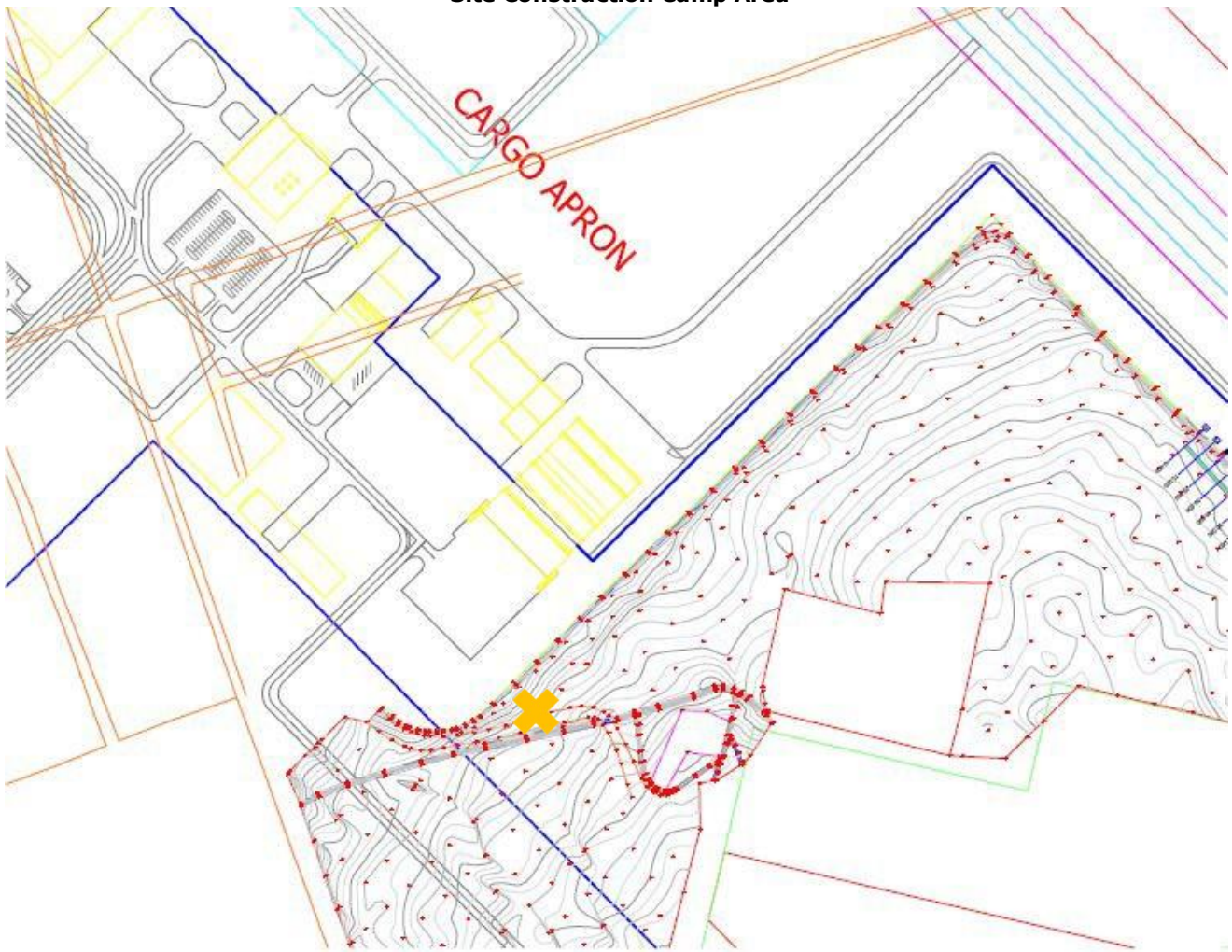


Culvert in Concrete Pipe DN900

Natural Direction of Flow

Perimeter Drain

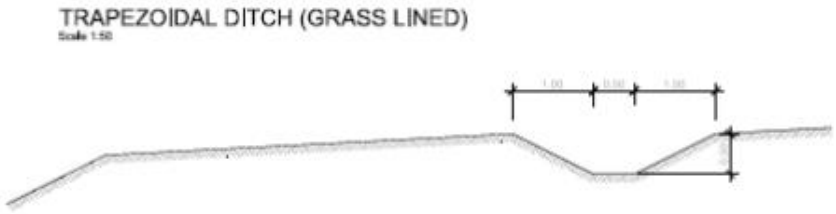
Site Construction Camp Area

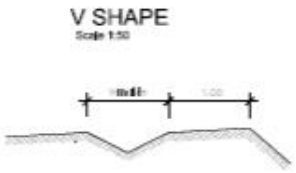


APPENDIX 3
TEMPORARY PERIMETER TRENCH DRAIN DESIGN

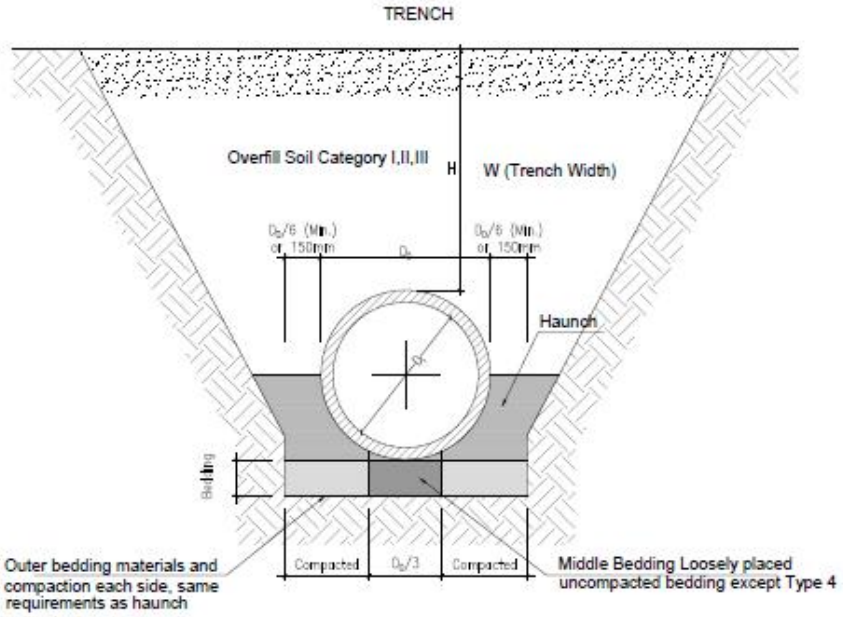
Perimeter Trench

Temporary Drains





Pipes Used in Concrete DN900



APPENDIX 9
DEVELOPER BIODIVERSITY MANAGEMENT PLAN

Intended for
Bugesera Airport Company Limited

Date
February 2018

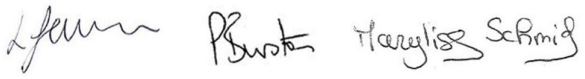
Project Number
1700000222-001

NEW BUGESERA INTERNATIONAL AIRPORT DEVELOPER BIODIVERSITY MANAGEMENT PLAN

Bugesera Airport Company

NEW BUGESERA INTERNATIONAL AIRPORT
DEVELOPER BIODIVERSITY MANAGEMENT PLAN

Project No.	**1700000222-001**
Issue No.	**3**
Date	**February 2018**
Made by	**Laura Sanderson/Peter Burston/Marylise Schmid**
Checked by	**Ailish Catriona Enker**
Approved by	**Denise Wright**

Made by: 

Checked/Approved by: 

Version Control Log

Revision	Date	Made by	Checked by	Approved by	Description
1	10/11/2017	LS/PB	DW	DW	Issue 1
2	04/12/2017	LS/PB	DW	DW	Issue 2
3	01/02/2018	PB/MS	ACE	DW	Issue 3

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DOCUMENT CONTROL

File Name	Biodiversity Management Plan
Document Number	
Description	
Original Author	
Creation Date	
Approved By	
Approval Date	
Change Record Number	

Revision	Revision Date	Authors	Approved By	Revision Notes

1. INTRODUCTION

1.1 Purpose

The Bugesera Airport Company Limited (BAC the "Developer") has overall responsibility for the delivery of the New Bugesera International Airport Project, (the "Project"). The Engineering, Procurement and Construction (EPC) Contractor, Mota-Engil Engenharia e Construção Africa - Rwanda (MEECARW) and its sub-contractors (collectively, the "Contractor") is responsible for the construction of the Project.

This document is the Developer Biodiversity Management Plan for the construction of the Project. This Management Plan is appended to the overarching Construction Environmental and Social Management Plan (Developer C-ESMP) and, as such, must be read in conjunction with it. The purpose of this Management Plan is to avoid or minimise the environmental and/or social risks and impacts of the Project in relation to biodiversity. To fulfil this purpose, this Management Plan will:

- define the scope of the biodiversity management;
- define the responsibilities for its implementation;
- outline the applicable Project Standards relevant to biodiversity management;
- define the management and monitoring controls related to biodiversity (primarily based on commitments made in the Project ESIA); and
- sign-post to supporting materials and information.

1.2 Application

The management and monitoring controls set out in this Management Plan apply to all Project construction activities, including those of the Contractor.

This Management Plan will be reviewed every year as a minimum to determine whether any changes or updates are required to the Plan unless a more frequent update is required to reflect changing Project design or procedures.

1.3 Authority and Management

The Developer's Health, Safety and Environment (HSE) Management is the custodian of this Developer Biodiversity Management Plan. Any requests for changes to this Management Plan must be addressed to this person and will be subjected to the appropriate review and approval processes as outlined in the Management of Change Procedure described in the Developer C-ESMP.

2. SCOPE

2.1 Scope of this Developer Biodiversity Management Plan

This Management Plan covers all Project biodiversity management initiatives, commitments and obligations for the construction phase and includes Contractor (which includes sub-contractor) activities. The construction phase biodiversity management planning includes relevant construction related biodiversity management and monitoring controls for on-going works that involve the expansion of infrastructure and the disturbance footprint for the Project.

This Management Plan is developed to guide implementation of the Project Standard's with respect to biodiversity, particularly in accordance with the African Development Bank Group Integrated Safeguards System and the International Finance Corporation's (IFC) 2012 version of Performance Standard 6 (PS6). In addition, implementation of this Plan will ensure the Project's compliance with biodiversity obligations to Rwandan legislation and policy as detailed in the overarching Developer C-ESMP.

This Management Plan applies to all Project construction activities including within the following areas:

- Airport Area;
- Expressway Route;
- Water Pipeline Route;
- Upgraded Quarry Road; and
- Surrounding Wetland and Lake Areas.

This management plan addresses both direct and indirect impacts arising from construction activities.

2.2 Overlaps with Other Plans

This Management Plan is part of the overall suite of Developer C-ESMPs developed for the Project, as follows:

- Developer Labour, Working Conditions and Employment Management Plan;
- Developer Waste Management Plan;
- **Developer Biodiversity Management Plan;**
- Developer Community Health, Safety and Security Plan;
- Developer Stormwater Management Plan;
- Developer Pollution Prevention Plan;
- Developer Soil Management Plan;
- Developer Traffic Management Plan; and
- Developer Cultural Heritage Plan.

There are overlaps with some of the other C-ESMPs, for example, the Developer Pollution Prevention Plan covers management and monitoring controls for impacts to biodiversity from pollution.

In addition, to overlaps with the other Developer C-ESMPs listed above, this Developer Biodiversity Management Plan (BMP) links to and interfaces with the Developer Biodiversity Action Plan (BAP). The BAP is not part of the Developer C-ESMP but is a key component of the Developer ESMS for this Project. As part of the Developer C-ESMP, the Developer Biodiversity Management Plan focuses on management and monitoring controls to avoid and reduce impacts to important biodiversity features. The BAP focuses on restoration and compensation measures required to deliver no net loss or net gains in relevant biodiversity features.

The distinction between a BMP and BAP is detailed in Annex A of the IFC Guidance Note 6. BMPs are prepared to develop mitigation, management and monitoring measures from the ESIA with the aim of avoiding, minimising and restoring impacts to biodiversity arising from Project activities. The development of a BAP is a Lender requirement when operating in critical habitats. BAPs are usually required for more complex programmes of work that may be required to manage interaction with stakeholders, implement actions involving land in third party ownership and when biodiversity offsets are required. See Appendix A for an additional note on the BAP.

Figure 2-1 below illustrates the relationship between the Developer Environmental and Social Management System (Developer ESMS), the Developer C-ESMP and appended suite of C-ESMPs, the Developer Overarching Operation Phase ESMP (Developer O-ESMP) and other Operation Phase ESMPs (O-ESMPs), the Contractor Construction Implementation Plans (CIPs) and the Contractor Operation Implementation Plans (OIPs).

The Contractor CIPs will align with the Developer C-ESMPs and O-ESMPs, respectively. The OIPs and O-ESMPs will be developed at a later stage of the Project.

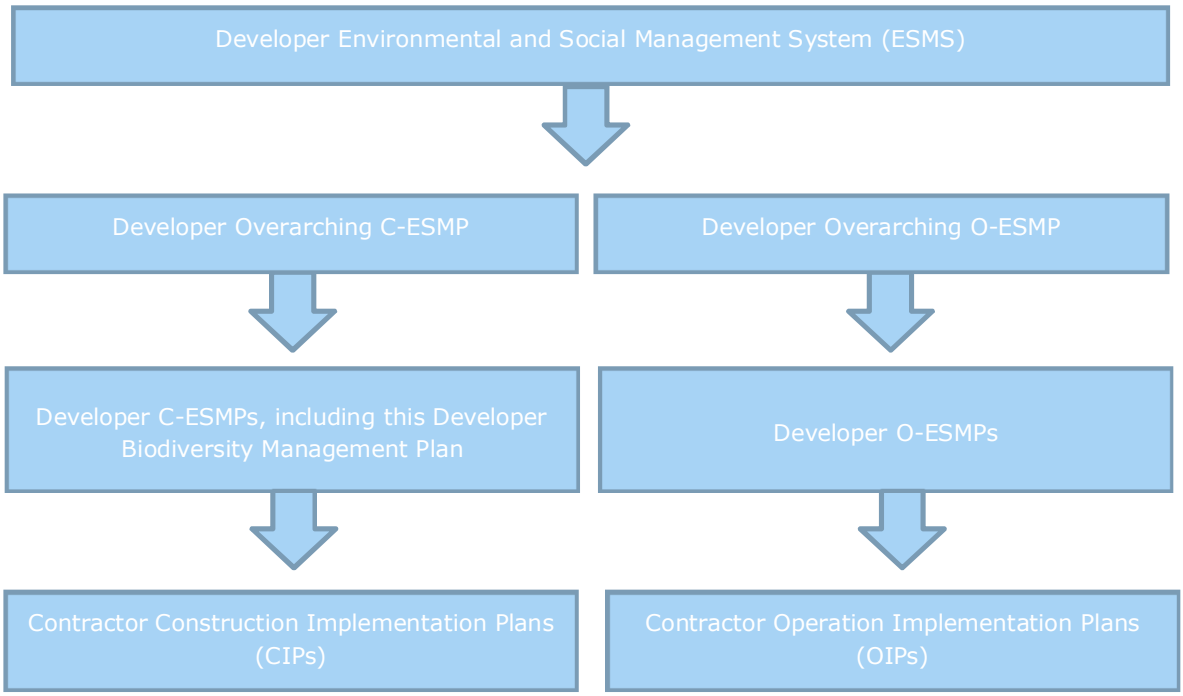

Figure 2-1: Environmental and Social Management Flowchart

3. RESPONSIBILITES

The Developer has overall responsibility for the delivery of the Project. The Contractor is responsible for the construction of the Project. Responsibility for implementation of the management and monitoring controls set out in this Management Plan is split between Developer and Contractor as detailed in tables provided in Sections 5 and 6.

The overarching roles and responsibilities for implementation of the C-ESMPs are provided in the overarching Developer C-ESMP.

The Developer is responsible for:

- Ensuring adherence to this Management Plan; and
- Ensuring that the evaluation of the management and monitoring controls set out in this Management Plan takes place to ensure they are effective.

The Contractor is responsible for:

- Adhering to this Management Plan; and
- Ensuring alignment of the relevant CIP to this Management Plan and providing more detail on how controls will be implemented and by whom.

4. PROJECT STANDARDS

A list of applicable standards for the construction phase, including International law, Lender standards and national legislation is presented in the overarching Developer C-ESMP. There are no specific Project Standards for biodiversity management that need to be repeated or highlighted here.

5. MANAGEMENT CONTROLS

5.1 Environmental and Social Aspects and Impacts

The full details of biodiversity features within the Project AOI are described in the Project ESIA. The detailed determination of features that confer critical habitat status is provided in Technical Appendix 11.1 of the ESIA. Table 5-1 provides a summary of the critical habitat relevant to this BMP.

Table 5-1: Critical Habitat Determination Summary

Feature	IFC PS6 Criteria	Rationale	Critical Habitat Tier
Nyabarongo Wetlands IBA	Criterion 6	Internationally and/or nationally recognised area	N/A
Madagascar Pond Heron	Criteria 1 and 3	Potential to support 1% of global population of IUCN Endangered species	Tier 2
Ningu *Labeo victorianus*	Criterion 1	Regular occurrence of IUCN Critically Endangered species	Tier 2

Nyabarongo Wetlands IBA is an internationally recognised area that has been designated due the following assemblage of biome-restricted bird species:

- Papyrus Gonolek
- Carruthers's Cisticola
- Papyrus Yellow Warbler
- White-winged Swamp-warbler Black-lored Babbler
- Northern Brown-throated Weaver Papyrus Canary
- Red-chested Sunbird

These in turn are supported by the natural habitat of swamp and aquatic vegetation that is distributed in the valleys surrounding the Project (Figure 5-1). The lakes associated with the lakes support an IUCN Endangered fish species called Ningu. Together the lakes and swamps support IUCN Vulnerable Hippopotamus.

This BMP will also address potential impacts to the following Priority Ecosystem Services:

- Crops
- Fish
- Wild foods including hunting
- Beekeeping and Pollinators
- Fuelwood timber and other wood fibre
- Soil erosion control, water purification and waste treatment

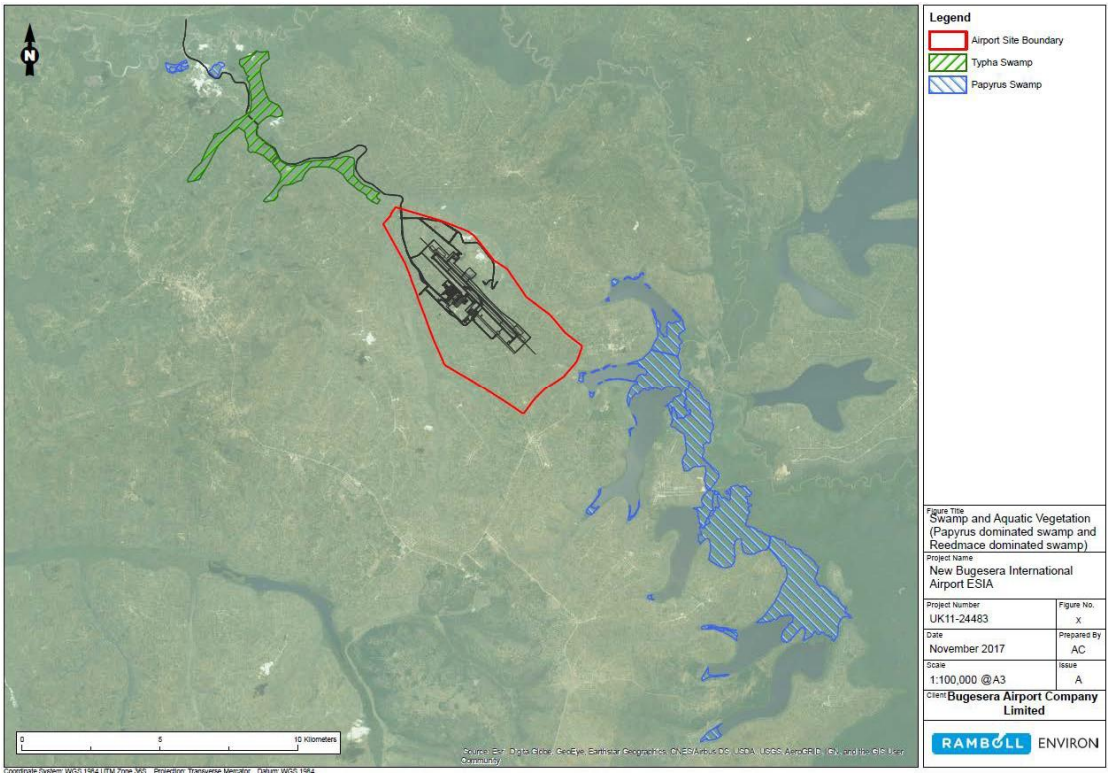

Figure 5-1: Wetland habitats in the vicinity of the Project

The key biodiversity management controls described in Table 5-1 below are developed to mitigate the potential impacts, as assessed in the Project ESIA, to natural and critical habitat features and the Nyabarongo Wetlands Important Bird Area (IBA).

Most of the key biodiversity features occur outside of the footprint of the Project. Therefore, the majority of management controls seek to minimise indirect impacts, in which the pathway of impact includes impacts to air quality, water quality, soil erosion, pollution and run off etc. Therefore, specific cross references to other relevant Developer C-ESMPs, focusing on these indirect impacts, are provided in Table 5-1.

5.2 Implementation of Management Controls

Management and mitigation measures (primarily derived from the Project ESIA) are elaborated on and will be implemented through the Key Management Controls as described in Table 5-1.

Each Management Control has been assigned a unique identification number (ID) to enable traceability and tracking from source of origin to implementation and vice versa. This is to demonstrate transparency in the environmental and social management process. The same Management Control IDs will be referenced by the Contractor in the relevant CIPs to demonstrate alignment with the Developer's C-ESMPs.

Table 5-2: Key Management Controls

ID	Topic/Aspect	Applicability/Activity	Control Description	Responsible Parties	Means of Verification
BD01	General – Including reduction of impacts on Nyabarongo Wetlands IBA. Direct habitat loss, disturbance, invasive species and air quality. Impacts to Ecosystem Services.	Vegetation clearance	a) The construction footprint will be carefully surveyed prior to the start of construction and measures will be in place to ensure construction activities do not extend beyond the Airport Area construction boundary.	Contractor	No vegetation to have been cleared beyond construction boundary Site inspection records
BD02	Impacts to Nyabarongo Wetlands IBA. Direct habitat loss and restoration	Restoration post-construction	a) If wetland habitats are damaged either side of the Expressway during construction of the wetland crossing, these will be restored to pre-construction baseline condition.	Contractor	Site inspection records confirming vegetation restored to pre-construction baseline conditions
BD03	Protected Plant Species	Vegetation clearance	a) A walkover survey will be completed prior to vegetation clearance for the Expressway to identify the location of any protected plants and provisions will be put in place to arrange translocation to a safe receptor site. b) Authorisation from Rwanda Water and Forestry Management Authority (Competent Authority) will be obtained before the listed plants are uprooted or cut.	Contractor	No protected plant species cut or uprooted without Competent Authority authorisation Copies of relevant authorisation Inspection records verifying translocated plants

Table 5-2: Key Management Controls

ID	Topic/Aspect	Applicability/Activity	Control Description	Responsible Parties	Means of Verification
BD04 (Note: These controls are also included in the Developer Traffic Management Plan)	General – Including reduction of impacts on Nyabarongo Wetlands IBA. Direct habitat loss, disturbance, increased mortality (collision) and air quality.	Increased traffic.	a) Only specified haul roads and designated construction tracks will be used by construction transport. b) Provide driver awareness and training for all construction personnel. c) Ensure that road safety signs include wildlife warning signs.	Contractor	Incident reports Training material and training logs Inspection records
BD05	General – Including reduction of impacts on Nyabarongo Wetlands IBA. Direct habitat loss, disturbance, invasive species and air quality.	Light disturbance.	a) Use only the minimum artificial lighting necessary to ensure safety will be employed. Careful positioning of lighting during construction to ensure light spill does not occur on surrounding vegetation, especially wetlands. Downward-directed lighting will be employed to minimise light pollution.	Contractor	Site inspection records
BD06 (Note: This control is also included in the Developer Soil Management Plan)	Direct habitat loss, disturbance, invasive species and air quality. Impacts to Ecosystem Services.	Soil storage.	a) Remove organic top soil and store separately for use in restoration.	Contractor	Site inspection records.
BD07 (Note: This control is also included in the Developer Pollution Prevention Plan and in the Developer Waste Management Plan)	General – Including reduction of impacts on Nyabarongo Wetlands IBA. Direct habitat loss, disturbance, invasive species and air quality. Impacts to Ecosystem Services.	Construction pollution.	a) Burning of all waste, including vegetation will be strictly prohibited.	Contractor	Site inspection records.

Table 5-2: Key Management Controls

ID	Topic/Aspect	Applicability/Activity	Control Description	Responsible Parties	Means of Verification
BD08	Control of Invasive Species. Impacts to Ecosystem Services.	Loss of pollen and nectar sources used by local beekeepers. Establishing native vegetation.	a) The Soft Landscape Design will be developed with expert advice from relevant local stakeholders, through a process managed by the Project BAP. b) The landscaping within the Airport Area will only use native species of plants. The soft landscape design will also favour plants known to produce high density of nectar and pollen to mitigate impacts to pollinating insects including honey bees. This will require some additional research and engagement with local experts to specify the optimal plant composition, as well as long term management. This is necessary to maximise benefit to pollinators, without attractive large numbers of birds that could increase the risk of bird strike with aircraft. c) Implement Soft Landscape Design	Developer with support from biodiversity and agricultural specialist(s). (BD09a) Contractor (BD09b-c)	Soft Landscape Plan developed as set out in Project BAP Soft Landscape Design Implemented according to KPIs detailed in Project BAP
BD09 (Note: This control is also included in the Developer Pollution Prevention Plan)	General – Including reduction of impacts on Nyabarongo Wetlands IBA. Changes in hydrology, water abstraction, disturbance, water quality. Impacts to Ecosystem Services.	Construction pollution.	a) Ensure water is not abstracted from any water bodies except for the designated source at Lake Kidogo, using the installed Water Pipeline.	Contractor	Authorisation and/or permit documentation for water abstraction at Lake Kidogo Site inspection records

Table 5-2: Key Management Controls

ID	Topic/Aspect	Applicability/Activity	Control Description	Responsible Parties	Means of Verification
BD10 (Note: These controls are also included in the Developer Pollution Prevention Plan)	General – Including reduction of impacts on Nyabarongo Wetlands IBA. Changes in hydrology, water abstraction, disturbance, water quality. Impacts to Ecosystem Services.	Construction Water Use.	a) Water abstraction will be stopped if water levels in Lake Kidogo threaten to dry out Papyrus swamp wetland habitats i.e. if water levels reach the bottom edge of the papyrus swamps (as detailed in Table 6-1).). The cause for the water level drop will be investigated and appropriate mitigation measures will be formulated and implemented.	Contractor	Lake level monitoring records
BD11 (Note: These controls are also included in the Developer Pollution Prevention Plan and in the Developer Soil Management Plan)	General – Including reduction of impacts on Nyabarongo Wetlands IBA. Changes in hydrology, water abstraction, disturbance, water quality. Control of invasive species. Impacts to Ecosystem Services.	Erosion.	a) Restore disturbed areas as soon as practicable to establish vegetation to protect from soil erosion. Use temporary soil protection if required (e.g. geotextile).	Contractor	Site inspection records
BD12 (Note: This control is also included in the Developer Pollution Prevention Plan)	General – Including reduction of impacts on Nyabarongo Wetlands IBA. Changes in hydrology, water abstraction, disturbance, water quality.	Construction pollution.	a) Prohibit direct discharges into water bodies.	Contractor	Site inspection records

Table 5-2: Key Management Controls					
ID	**Topic/Aspect**	**Applicability/Activity**	**Control Description**	**Responsible Parties**	**Means of Verification**
	Impacts to Ecosystem Services.				
BD13 (Note: This control is also included in the Developer Waste Management Plan)	General – Including reduction of impacts on Nyabarongo Wetlands IBA. Changes in hydrology, water abstraction, disturbance, water quality. Impacts to Ecosystem Services.	Construction pollution.	a) Prohibit storage of waste materials outside of designated storage areas.	Contractor	Site inspection records.
BD14 (Note: These controls are also included in the Developer Pollution Prevention Plan)	Changes in hydrology, water abstraction, disturbance, water quality. Impacts to Ecosystem Services.	Construction pollution.	a) Prevent accidental fuel spills from re-fuelling vehicles and generators. Spill kits and trays to be provided for all vehicles and pumps. b) Storage and management of materials and wastes will be in accordance with GIIP, such as bunded trays or leak proof containers for hazardous materials and waste. This includes storage of fuel at water abstraction station at Lake Kidogo.	Contractor	Site inspection records

Table 5-2: Key Management Controls

ID	Topic/Aspect	Applicability/Activity	Control Description	Responsible Parties	Means of Verification
BD15	General – Including reduction of impacts on Nyabarongo Wetlands IBA. Impacts from induced access and population influx. Impacts to Ecosystem Services.	Increased pressure on wild populations.	a) Hunting and fishing by construction workers is strictly prohibited, as well as the purchasing of fish and bushmeat whilst at work. b) Wildlife awareness and restrictions will be communicated to all construction personnel through induction and training.	Contractor	Training material and training logs
BD16	General – Including reduction of impacts on Nyabarongo Wetlands IBA. Impacts from induced access and population influx. Impacts to ecosystem Services.	Firewood collection.	a) Firewood collection is prohibited on site. b) Alternative fuel sources will be supplied to construction workers for use on-site that avoid wood or charcoal that has not been sustainably harvested. c) Fuel options and restrictions on firewood are to be communicated to all construction personnel through induction and training.	Contractor	Training material and training logs. Records of alternative fuel provision to all construction personnel
BD17	Large raptors and Grey-crowned crane.	Bird collision.	a) Where feasible, power lines will be installed below ground to minimise risk of collisions with raptors and large soaring birds. In sensitive locations where power lines cannot be buried, design will include requirement to install bird flight diverters and / or insulate power lines.	Contractor	As built designs

Table 5-2: Key Management Controls					
ID	**Topic/Aspect**	**Applicability/Activity**	**Control Description**	**Responsible Parties**	**Means of Verification**
BD18	All Fauna.	People-wildlife conflict.	a) The Project site will be maintained in a clean state and any food or waste stored in secure areas to prevent it attracting scavenging birds and mammal species.	Contractor	Site inspection records
BD19 (Note: This control is also included in the Developer Traffic Management Plan)	General – Including reduction of impacts on Nyabarongo Wetlands IBA. All Fauna. Air quality. Impacts to Ecosystem Services.	Dust control and collision prevention.	a) Vehicle speed limitations, particularly close to sensitive receptors (to be determined on a case by case basis to reduce dust emission and risk of mortality of animals although typically < 20-30 km).	Contractor	Inclusion of measures such as use of flagmen and installation of speed restriction signs. Records of speed monitoring

Table 5-2: Key Management Controls

ID	Topic/Aspect	Applicability/Activity	Control Description	Responsible Parties	Means of Verification
BD20 (Note: these controls are also included in the Developer Pollution Prevention Plan)	General – Including reduction of impacts on Nyabarongo Wetlands IBA. All Fauna. Impacts to Ecosystem Services.	Noise disturbance.	a) During construction of the Expressway, noisy construction-related activity will be avoided 1 hour either side of dawn and dusk and during the night. b) During construction of Expressway, Project vehicles and equipment will be maintained in good condition. c) Use of noise barriers, baffles, or enclosures to provide abatement for noisy equipment such as generators, compressor, pumps, gearboxes will be considered along with careful siting of equipment to be at least 250 metres away from wetlands. d) Vehicle operators will be trained on the need to avoid the unnecessary revving of engines and to switching off equipment when it is not required. This is especially important within 250 m of wetlands.	Contractor	Site inspection records Training material and training logs
BD21	Ningu and other fish species. Impacts to Ecosystem Services.	Entrainment of fish.	a) The water abstraction pipe in Lake Kidogo will have a fish excluder installed at its end to prevent entrainment of fish and other aquatic life.	Contractor	As built installation

6. MONITORING CONTROLS

6.1 Definition of Monitoring

For the purposes of this Project and this Management Plan, monitoring is defined as a repeated action undertaken to determine the:

- quality of environmental media potentially impacted by the Project (e.g. taking samples of air/water/soil or surveying flora/fauna);
- compliance against threshold targets (e.g. recording measurements for air emissions/water discharges/sediment runoff/noise emissions/vibration etc) generated by the Project; OR
- performance of a management control (e.g. inspection observations during regular site walkovers).

Monitoring does not therefore include one off actions, for example, undertaking specific surveys/assessments, adhering to ongoing standards/rules/prohibitions, installation of equipment for protection/preventative purposes, training, maintaining equipment and vehicles. These are considered to be management controls.

6.2 Implementation of Monitoring Controls

The monitoring controls to be implemented during construction to ensure compliance with the Project Standards are described in Table 6-1 below. This includes Key Performance Indicators (KPIs) to help assess the efficacy of implementation. As indicated in the Table 6-1, all monitoring controls will be recorded and/or reported.

In the event that any monitoring results identify non-compliance with any Project Standards, these will be investigated, corrective actions reported, identified and implemented.

Table 6-1: Key Monitoring Controls

ID	Topic	KPI	Methods	Periodicity	Location	Responsible Party
BDM01 (Note: this is a monitoring control required to ensure compliance with management control BD11)	Water Levels in Lake Kidogo	KPI: Water level measurements Target: No significant decrease in water levels in Lake Kidogo Threshold: Bottom edge of the papyrus swamps	Visual Inspection and regular measurement of water levels (records to be kept)	Weekly	Location close to papyrus swamp near to water abstraction point	Contractor
BDM02	Sediment runoff during Expressway Construction	KPI: Sediment runoff. Target: Minimal sediment runoff.	Visual Inspection and Reporting	Weekly	Along length of Expressway	Contractor
BDM03	Evidence of any sediment impacts to wetland vegetation along Expressway	KPI: Wetland vegetation sediment build-up Target: Minimal amount of wetland vegetation affected by sediment build-up	Visual inspection for signs of sediment damage. If damage detected, a botanical survey of affected areas and surrounding vegetation to inform restoration requirements (to be recorded). Standardised botanical quadrat recording methods to be employed.	Weekly	Along length of Expressway	Contractor
BDM04 (Note: this is a monitoring control required to determine the performance of management controls BD15)	Signs of hydrocarbons on surface water bodies close to Expressway	KPI: Number of incidents resulting in signs of hydrocarbons on surface water bodies close to the Expressway. Target: Zero.	Visual Inspection and Reporting.	Weekly	Along length of Expressway	Contractor

Table 6-1: Key Monitoring Controls						
ID	**Topic**	**KPI**	**Methods**	**Periodicity**	**Location**	**Responsible Party**
BDM05 (Note: this is a monitoring control required to inform restoration requirements, see control BD02)	Direct damage to wetlands at the crossing point along the Expressway	KPI: Pre-construction baseline to inform restoration requirements. Post-construction monitoring of restoration. Target: All affected areas restored to pre-construction condition.	Botanical survey (to be recorded). Botanical survey of affected areas and surrounding vegetation (e.g. 50 metres either side of construction zone) to inform restoration requirements. Standardised botanical quadrat recording methods to be employed.	Pre-construction baseline survey and annual surveys following post-construction restoration until pre-construction condition attained.	Crossing of wetland along Expressway	Contractor
BDM06	Hydrology in wetland either side of wetland crossing point along Expressway	KPI: Pre-construction baseline of water levels and vegetation composition. Post-construction monitoring of water levels and vegetation to ensure efficacy under-road water passage features. Target: No impacts to hydrology or wetland vegetation.	Botanical survey (to be recorded). Botanical survey adjacent to Expressway (e.g. 50 metres either side of construction zone) to monitor potential impacts from changes in hydrology. Standardised botanical quadrat recording methods to be employed. Hydrology survey either side of Expressway to record water levels in wetland.	Pre-construction baseline survey and annual surveys following post-construction for 5 years.	Either side of Expressway at wetland crossing	Contractor
BDM07 (Note: this is a monitoring control required to ensure compliance with management control BD16)	Signs of any hunting or fishing by construction workers	KPI: Number of recorded incidents. Target: No illegal hunting or purchasing of wildlife by construction personnel to be identified.	Observations during routine inspections (record of observations must be kept)	Constant / ad hoc	Whole construction site	Contractor

Table 6-1: Key Monitoring Controls						
ID	**Topic**	**KPI**	**Methods**	**Periodicity**	**Location**	**Responsible Party**
BDM08 (Note: this is a monitoring control required to ensure compliance with management control BD17)	Firewood collection attributable to Project	KPI: Number of recorded incidents. Target: No unauthorised firewood collection	Observations during routine inspections (record of observation must be kept)	Constant / ad hoc	Whole construction site	Contractor
BDm09 (Note: this is a monitoring control required to ensure compliance with management control BD04)	Unauthorised driving off designated roads	KPI: Number of incidents of unauthorised employee of sub-contractor driving off designated roads Target: Zero.	Inspection of designated roads for signs of off road driving (records of unauthorised driving must be kept)	Weekly	Along designated roads	Contractor
BDM10	Invasive species	KPI: Number of species introduced or allowed to spread within the Area of Influence Target: Minimise introduction and spread of invasive species. Objective is zero introduction and no spread	Inspection of the construction site (records of species found to be kept)	Weekly	Whole construction site	Contractor

Table 6-1: Key Monitoring Controls						
ID	**Topic**	**KPI**	**Methods**	**Periodicity**	**Location**	**Responsible Party**
BDM11	Wildlife deaths attributable to Project	KPI: Number of reported wildlife deaths Target: zero incidents attributable to Project	Visual inspection and reporting	Weekly	Whole construction site	Contractor
BDM12	Vegetation clearance Construction pollution Light disturbance Soil storage Noise disturbance Entrainment of fish Invasive species	KPI: Number of reported non-compliances with this Plan Target: Minimise with a target of Zero non-conformances	Routine inspections will be carried out using an Environmental Inspection Checklist (covering the management measures detailed in Table 6-1). Any incidents will be reported.	Weekly	Areas of key construction activity	Contractor

APPENDIX 1
ADDITIONAL NOTE ON BAP AND LONG-TERM MONITORING

In addition to the monitoring plan detailed above, the Project will develop and implement a long-term Biodiversity Monitoring and Evaluation Strategy as part of the Biodiversity Action Plan (BAP) to verify compliance with applicable Project Standards and to inform the adaptive management of the additional conservation programmes. This will focus on the following critical habitat features:

- Nyabarongo Wetlands IBA and the bird species that form component parts of the Internationally Recognised Area, as well as Madagascar Pond Heron; and
- Ningu *Labeo victorianus* (presence yet to be confirmed).

The long-term biodiversity monitoring and evaluation strategy will be designed to provide a detailed monitoring baseline to inform the biodiversity offset strategy that will form part of the BAP. The long-term monitoring will continue throughout the operational phase of the Project. This will include monitoring measures including indicators of pressure, state, and response for each of the high biodiversity value features. Specific monitoring requirements will be developed as part of the production of the Project BAP.