

# **Technical Appendix 3.2: NBIA Gap Analysis Report**

Intended for

**Bugesera Airport Company Limited**

Document type

**Gap Analysis Report**

Date

**October 2017**

# **NEW BUGESERA INTERNATIONAL AIRPORT GAP ANALYSIS REPORT AND ENVIRONMENTAL AND SOCIAL ACTION PLAN (ESAP)**

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Revision	<b>Version 3</b>
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Description	<b>Gap Analysis Report and Environmental and Social Action Plan</b>
Ref	<b>UK11-24483</b>

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Map Illustrating the Proposed Project Area

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## ABBREVIATIONS

AOI	Area of Influence
AFC	Africa Finance Corporation
BAC	Bugesera Airport Company Limited
CH <sub>4</sub>	Methane
CHSS	Community Health, Safety and Security
CO <sub>2</sub>	Carbon dioxide
dB	Decibel
E&S	Environmental and Social
EHS	Environment, Health and Safety
ESAP	Environmental and Social Action Plan
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
H <sub>2</sub> S	Hydrogen sulphide
IBA	Important Bird / Biodiversity Area
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
IFC	International Finance Corporation
IFC PS	International Finance Corporation Performance Standards
KGL	Kigali International Airport
LRP	Livelihood Restoration Plan
Mota-Engil	Mota-Engil Engenharia e Construção
NO <sub>x</sub>	Nitrogen oxides
OD	Operational Directive
PAPs	Project Affected Persons
PM <sub>10</sub>	Particulate matter
PPE	Protective Personal Equipment
RAP	Resettlement Action Plan
SEP	Stakeholder Engagement Plan
SO <sub>2</sub>	Sulphur dioxide
ToR	Terms of Reference
TSP	Total Suspended Particulates
US EDMS model	United States Emissions and Dispersion Modelling System
WHO	World Health Organisation

## EXECUTIVE SUMMARY

The Bugesera Airport Company Limited (BAC) intends to develop a new international airport within the Bugesera District in the Eastern Province of Rwanda. The development of the proposed New Bugesera International Airport ("Proposed Project") was influenced by the decision that the existing Kigali International Airport (KGL) is unable to support the air travel needs of Rwanda in the near future due to the rapid development within the country.

BAC is a joint venture between Mota-Engil Engenharia e Construção (Mota-Engil) and the Government of Rwanda. The Proposed Project will be financed by BAC as well as International Lenders. Currently, the Africa Finance Corporation (AFC) has been identified as the senior lender; however, this is to be confirmed and additional lenders are also being considered for the Proposed Project.

A draft Environmental and Social Impact Assessment (ESIA) report and a draft Resettlement Action Plan (RAP) were prepared in 2010 in relation to a previously proposed project for the development of the New Bugesera International Airport. The 2010 ESIA and RAP were submitted to the relevant Rwandan statutory authorities at the time but the project did not proceed as originally envisaged and the documents were not formally approved.

In May 2017, Ramboll Environ UK Limited (Ramboll Environ) was commissioned to complete three tasks in relation to the revised masterplan for the currently Proposed Project. These tasks are as follows:

- Task 1 – Gap Analysis, Environmental and Social Action Plan (ESAP) and Stakeholder Engagement Plan (SEP): A Gap Analysis of the 2010 ESIA and RAP against Rwandan national legislative and regulatory standards and international financial institution standards and in light of amendments to the previously proposed project resulting in the current Proposed Project is to be undertaken. Following on from the Gap Analysis, an ESAP is to be prepared setting out the actions and tasks that are required to meet national and international standards and a Stakeholder Engagement Plan (SEP) is to be developed.
- Task 2 – Baseline Surveys: Baseline environmental and social surveys or studies are to be undertaken to fill identified gaps and the ESIA (2010) and RAP (2010).
- Task 3 – Update 2010 ESIA and RAP: The previous ESIA (2010) and RAP (2010) are to be updated to cover the Proposed Project and ensure that these documents comply with national and international standards.

This report presents the findings of the Gap Analysis and an ESAP has been prepared in fulfilment of part of the Task 1 deliverables.

The Gap Analysis was undertaken by a range of ESIA, legislative and policy and technical environmental and social specialists. The following is a summary of the overall findings and conclusions:

- The ESIA (2010) and RAP (2010) do not fulfil at a procedural or technical level the conditions associated with Rwandan environmental legislation and regulatory requirements in relation to the previously proposed scheme. In addition, due to the recent changes made to the airport masterplan, these documents can only serve as input to a new ESIA and RAP as part of a new application to the Rwandan environmental authorities and in fulfilment of International Lender requirements.
- The International Finance Corporation Performance Standards (IFC PS), version 2006 in force at the time of the ESIA (2010), were not considered as part of the ESIA process, and are now out of date (the IFC PS were amended in 2012); therefore the ESIA (2010) report would not be accepted by International Lenders.
- Due to the time lapse from the compilation of the draft ESIA (2010) report (2009/2010), the social and environmental baseline conditions of the Proposed Project site have changed and additional studies are required to describe existing conditions across the Proposed Project Area and the Proposed Project Area of Influence.

- Since the Request for Proposal for this assignment was issued by Mota-Engil dated 23 February 2017, further elements have been added to the scope of the Proposed Project over and above those that were assessed as part of the previously proposed project as part of the ESIA (2010) and RAP (2010). These include a 14 km Expressway to link the airport to the national KK-15 Road joining at the existing Nyabarongo Bridge and an approximately 5 km water supply pipeline from Lake Kidogo to provide water for the construction phase. These will need to be considered as part of the updated ESIA. There are also Associated Facilities to the Proposed Project, which include the quarry to the northeast of the Proposed Project for the supply of aggregates, upgrades to the road to the quarry and the temporary construction phase water supply pipeline, and consideration of the permanent power and water supply and other services for the operational phase that will need to be identified and subsequently addressed as part of the updates to the ESIA and RAP.
- The draft ESIA (2010) document did not follow due process as is required by Rwandan Regulators, as no formal application was submitted and no evidence of a Terms of Reference (ToR) document was compiled. A number of Policy and Legal Frameworks were also not considered in the previous document. Therefore the draft ESIA (2010) is deemed to be noncompliant with Rwandan requirements.

In view of the points highlighted above, it is Ramboll Environ's recommendation that a new ESIA and RAP be prepared based on any relevant information that can be relied upon from the ESIA (2010) and RAP (2010).



# 1. INTRODUCTION AND PROJECT APPROACH

## 1.1 Project Background

The Bugesera Airport Company Limited (BAC) intends to develop a new international airport within the Bugesera District, in the Eastern Province of Rwanda. The development of the proposed New Bugesera International Airport ("Proposed Project") was influenced by the decision that the existing Kigali International Airport (KGL) is unable to support the air travel needs of Rwanda in the near future due to the rapid development within the country.

BAC is a joint venture between Mota-Engil Engenharia e Construção (Mota-Engil) and the Government of Rwanda. The Proposed Project will be financed by BAC as well as International Lenders. Currently, the Africa Finance Corporation (AFC) has been identified as the senior lender; however, this is to be confirmed and additional lenders are also being considered for the Proposed Project.

In May 2017, Ramboll Environ UK Limited (hereafter Ramboll Environ) was commissioned by BAC to undertake a Gap Analysis of the available environmental and social documentation<sup>1</sup> compiled for the previously proposed project in 2010 by GIBB Africa against Rwandan national legislation and regulatory requirements and International Financial Institution (IFI) standards. Ramboll Environ has also been commissioned to undertake selected updated baseline surveys and prepare an update to the 2010 ESIA and RAP to comply with national and international standards.

The assignment has been divided into three tasks as follows:

- Task 1 – Gap Analysis, Environmental and Social Action Plan (ESAP) and Stakeholder Engagement Plan (SEP): Undertake a Gap Analysis of the 2010 ESIA and RAP against Rwandan national legislative and regulatory standards and international financial institution standards and in light of amendments to the previously proposed project resulting in the current Proposed Project. Following on from the Gap Analysis, an ESAP is to be prepared setting out the actions or tasks that are required to meet national and international standards.
- Task 2 – Baseline Surveys: Undertake additional baseline environmental and social surveys or studies to fill identified gaps and the 2010 ESIA and RAP.
- Task 3 – Update 2010 ESIA and RAP: The previous 2010 ESIA and RAP are to be updated to cover the Proposed Project and ensure that these documents comply with national and international standards.

This report represents the Gap Analysis and ESAP as part of the Task 1 deliverables.

## 1.2 Project Standards

The information reviewed was assessed against applicable local and international standards and requirements ("Applicable Standards"), including:

- Rwandan legislative and regulatory requirements, including the Organic Law no. 04/2005 of 8 April 2005 establishing the Modalities of Protection, Conservation, Promotion of the Environment, especially Articles 67, 68, 69, 70 and Ministerial Order No. 003/2008 of 15 August 2008 relating to the requirements and procedures for Environmental Impact Assessment.
- IFC Sustainability Framework (2012) and IFC Performance Standards (2012) (IFC PS 2012), including:
  - PS1 Assessment and Management of Environmental and Social Risks and Impacts;
  - PS2 Labour and Working Conditions;
  - PS3 Resource Efficiency and Pollution Prevention;
  - PS4 Community Health, Safety and Security;
  - PS5 Land Acquisition and Involuntary Resettlement;

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<sup>1</sup> Draft Environmental and Social Impact Assessment, 2010 and the Draft Resettlement Action Plan (Volumes 1 and 2) , 2010

- PS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources;
- PS7 Indigenous Peoples; and
- PS8 Cultural Heritage.
- The Equator Principles III<sup>2</sup>;
- IFC General Environmental, Health and Safety Guidelines (2007); and
- IFC Environment, Health and Safety (EHS) Guideline for Airports (2007).

Ramboll Environ has appointed NEWPLAN Limited (NEWPLAN) as the local consultant to assist with in-country regulatory requirements.

### 1.3 Scope of Work

Specifically this Gap Analysis provides the following:

- Review of the existing draft 2010 ESIA report and draft RAP (Volumes 1 and 2) prepared for the previously proposed project in 2010 by GIBB Africa to assess compliance with the Applicable Standards;
- Review of land acquisition and potential economic displacement impacts that may occur, or have occurred, as a result of the Proposed Project;
- Review of the details of the public consultation and stakeholder engagement initiatives undertaken to date;
- Critical assessment of the social and environmental baseline data collected, approach to analysis of alternatives and the recommended mitigation measures; and
- Review of the assessment of the cumulative impacts identified as part of the previously proposed project.

Where the gaps are identified, recommendations have been made to fill these gaps along with timeframes linked to the Proposed Project milestones. The mechanism by which the Proposed Project addresses any recommendations should be agreed between BAC, local regulators and the International Lenders.

### 1.4 Report Layout

This Gap Analysis Report is set out as follows:

- Section 2: Project Overview
- Section 3: Review of the 2010 Draft ESIA and RAP
- Section 4: Summary of Findings and Environmental and Social Action Plan (ESAP)
- Section 5: Conclusions and Recommendations
- Appendix 1: List of Statutory Consultees and Regulators Met
- Appendix 2: Illustration of Project Boundary and Associated Facilities
- Appendix 3: Airport Design Images

The Gap Analysis highlights omissions, deficiencies or other areas requiring improvement. Issues that are adequately addressed and meet the above requirements are not recorded. Typographical and grammatical errors are not highlighted in the review, except in cases where these errors lead to ambiguity or difficulty in interpretation.

### 1.5 Project Team and Proponent Involvement

The core Project Team involved with the Gap Analysis is listed in Table 1-1. Please note that specific specialists were also utilised in order to identify gaps and obtain comments and recommendations. Members from Mota-Engil and BAC assisted with the arrangements of in-country meetings with relevant Rwandan statutory consultees and regulators.

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<sup>2</sup> The Equator Principles are under-pinned by the IFC Performance Standards and largely aligned. The IFC performance Standards are therefore used as the primary reference standards for this Gap Analysis Report

<b>Table 1-1: Core Project Team and Proponent</b>		
<b>Name</b>	<b>Company</b>	<b>Role</b>
Denise Wright	Ramboll Environ	Project Manager
Brent Holme	Ramboll Environ	Project Coordinator
Sheenagh Mann	Ramboll Environ	ESIA Consultant
Juliet Kintu	NEWPLAN	Environmental Specialist
Jane Frances Agio	NEWPLAN	Social Specialist
Simon Muliisa	NEWPLAN	In-country Consultant
Mark Freeman	Mota-Engil Africa	Mota-Engil Environmental Manager
Maciej Michalek	BAC	Managing Director

## 1.6 Stakeholder Meetings and Site Visit

Ramboll Environ and NEWPLAN conducted a site visit of the Proposed Project area, surrounding area and associated facilities<sup>3</sup> during 15 to 19 May 2017 to obtain background information, observe the Proposed Project area and have meetings with relevant statutory consultees and regulators. Table 1-2 provides a summary of the stakeholder meetings of regulators who were consulted. Appendix 1 provides the names consulted to date during the various statutory consultation and regulatory meetings. Going forward, a full list of consultees will be tracked via the Stakeholder Engagement Plan (SEP).

<b>Table 1-2: Stakeholder Meetings, May 2017</b>		
<b>Date</b>	<b>Location</b>	<b>Reason</b>
12 May 2017	Johannesburg	Kick-Off Meeting with Mota-Engil
15 May 2017	Mota-Engil Offices, Kigali	Meeting: Background
15 May 2017	Proposed Project Construction Camp, Bugesera	Site visit of Proposed Project site and surrounds
16 May 2017	Ministry of Infrastructure offices, Kigali	Meeting with Ministry of Infrastructure
17 May 2017	Mota-Engil offices in Kigali	Meeting with Rwandan Civil Aviation Authority
17 May 2017	Proposed Project site, Bugesera	Meeting with Bugesera District Deputy Mayor and Sector Leaders from Rilima and Juru
17 May 2017	Proposed Project site, Bugesera	Site visit to water supply pipeline servitude and quarry
18 May 2017	Nyarugenge Pension Plaza Building, Kigali	Meeting with the Rwanda Land Use and Management Authority
19 May 2017	Proposed Project Construction Camp, Bugesera and New Expressway Corridor	Site visit of Expressway Corridor
19 May 2017	Rwanda Development Board offices, Kigali	Meeting with the Rwanda Development Board/Rwanda Environmental Management Authority

<sup>3</sup> Associated activities include a new Expressway (14 km long new road to access the Proposed Project, existing Quarry (where aggregates are obtained for the project), associated unsurfaced access roads (in which construction vehicles and employees access the Proposed Project area) and proposed water pipeline route (to obtain water during construction).

**Table 1-2: Stakeholder Meetings, May 2017**

<b>Date</b>	<b>Location</b>	<b>Reason</b>
19 May 2017	Sector-level REMA office, Bugesera	Discuss ESIA issues from sector perspective

Appendix 2 illustrates the Proposed Project boundary, detailing associated access roads, the proposed Expressway, quarry location and proposed water pipeline. The illustration also provides the location of the Construction Camp for the Proposed Project site.

### **1.7 Assumptions and Limitations**

This report has been prepared by Ramboll Environ with all reasonable skill, care and diligence, and taking account of the Services and the Terms agreed between Ramboll Environ and the Client. This report is confidential to the Client, and Ramboll Environ accepts no responsibility whatsoever to third parties to whom this report, or any part thereof, is made known, unless formally agreed by Ramboll Environ beforehand. Any such party relies upon the report at their own risk.

Ramboll Environ disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the Services.

## 2. PROJECT OVERVIEW

### 2.1 Background

The Proposed Project is to be situated within the Bugesera District in the Eastern Province of Rwanda. The purpose of the Proposed Project is to replace the existing Kigali International Airport, which will remain operational for military purposes. The airport is proposed to be constructed in five phases, the first of which is due to be finalised by 2019/ 2020 to allow the airport to become operational. The final phase is due to be completed in 2045.

### 2.2 Land Ownership

The land on which the Proposed Project will be developed has been expropriated by the Ministry of Infrastructure and is understood to be free from ownership claim, with a limited number of property ownership files to be finalised. It is understood that BAC will lease the land within the Proposed Project boundary.

### 2.3 Project Description

The project is separated into various areas, as defined below.

#### 2.3.1 Airport

The design of the airport has been amended since the compilation of the draft ESIA (2010) report. The design of the airport and associated upgrades until 2045 are included in Appendix 3. In summary, the Proposed Project will include, but is not limited to, the following key elements:

- A Runway (3,750 m in length by 45 m in width) and one parallel taxi-way in order to improve runway capacity and the airside operations;
- Passenger Terminal (29,900 m<sup>2</sup>) designed to International Air Transport Association (IATA) requirements which includes check-in counters, security checkpoints, gates, boarding bridges as well as immigration and emigration counters;
- Approximately 4,700 m<sup>2</sup> of the terminal will be reserved for commercial activities (retail, lounges, offices, etc.); and
- Additional facilities, including:
  - Presidential terminal;
  - Cargo area;
  - Ground Service Equipment Maintenance Building;
  - Catering area;
  - Administrative area;
  - Access security;
  - Power distribution;
  - Waste management yard;
  - Fuel farm;
  - Aircraft Rescue and Firefighting building;
  - Air Traffic Control tower; and
  - Car parking.

#### 2.3.2 Construction Phase Water Treatment Plant and Water Supply Pipeline

It is anticipated that approximately 600 m<sup>3</sup> of water per day will be required during the construction phase of the Proposed Project. BAC proposes to construct a water treatment plant to the north-western portion of the Construction Camp in order to treat water that will be obtained from Lake Kidogo via a pipeline of approximately 5 km. Information about the volume of water to be abstracted as well as the quality of the water is not currently known.

### 2.3.3 Expressway

BAC proposes to construct a new access road (referred to as the Expressway) of approximately 14 km, which will connect the airport to the national KK-15 Road joining at the existing Nyabarongo Bridge which crosses the Akagera River. The road will be paved (bitumen) and the road reserve is anticipated to be 60 m wide. The Expressway will initially comprise two lanes (one in each direction) and in the future extended to include four lanes (two in each direction). The Expressway will be constructed in an area that is currently sparsely populated. The land uses of the proposed route comprise agriculture and wetland with some limited areas that are inhabited.

Future plans for the Expressway are to upgrade the existing surfaced KK-15 Road to Kigali, for a length of approximately 14 km. The existing road may be widened to accommodate increased traffic in the area.

### 2.3.4 Associated Facilities

#### Quarry and Access Road

An existing quarry is located approximately 10 km to the northeast of the Proposed Project site for which previous environmental approval from relevant Government of Rwanda authorities has been obtained. The quarry is permitted to be mined at a rate of 30,000 tons per month. An existing unsurfaced road of approximately 18 km is currently being used to transport aggregate from the quarry to the Proposed Project site. This road passes the village of Kabukuba, located to the north of the site. It is proposed that a shorter route be used, which will reduce travel time and will pass the southern edge of the village. This road exists; however, it will need to be graded in order to accommodate heavy duty vehicles. Some relocation of families in the Kabukuba village may be needed for safety reasons as a result of the proposed access road.

#### Permanent Electricity and Water Supply

BAC has indicated that separate power and water supplies will be required during the operations phase of the project. It is understood that the Government of Rwanda is responsible for this aspect of the project and, at present, no additional information is available.

### 3. REVIEW OF THE DRAFT 2010 ESIA/RAP

The initial scope of works agreed between Ramboll Environ and BAC was to review the 2010 ESIA and RAP in relation to relevant national legislation and regulatory requirements and international financial institution standards for the Proposed Project, which was identified as the Proposed Project boundary and associated Area of Influence. No environmental and social impact assessment information is currently available in relation to the Expressway, construction water supply corridor, additional potential impacts with regard to the quarry and access road to the quarry, and the operation phase water and electrical supply corridors.

As such, this Gap Analysis has been largely focussed on the Proposed Project boundary and associated Area of Influence, with commentary, where possible, on the Expressway, Construction Phase Water Supply Line and the Associated Facilities.

Associated Facilities are defined in IFC PS1 *"...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."*

#### 3.1 Project Standards

The Proposed Project will be subject to what are referred to as Project Standards. As set out in IFC PS1, "...when host country regulations differ from the levels and measures presented in the EHS Guidelines, projects are expected to achieve whichever is more stringent. If less stringent levels or measures are appropriate in view of specific project circumstances, a full and detailed justification for any proposed alternatives is needed as part of the site-specific environmental assessment. This justification should demonstrate that the choice for any alternative performance level is protective of human health and the environment."

In the following sections, a summary of the host country regulations and IFC standards are discussed. In Task 2 of this assignment, Ramboll Environ proposes to work with BAC to identify the relevant Project Standards and agree these, if possible, at the outset of the next task with the host country regulatory authorities and Lenders.

##### 3.1.1 Host Country Regulatory Requirements

National Rwandan policy and legal framework relevant to the Proposed Project and Associated Infrastructure to which it should comply are presented herein. For the purpose of the Gap Analysis, only national policy and legal framework that were absent in the draft ESIA (2010) are presented below. Ramboll Environ will take cognisance of all Rwandan policy and legal framework for the Proposed Project to ensure compliance with Rwandan legislation and Lender requirements.

This chapter presents the national Rwanda policy and legal framework relevant to the proposed Bugesera International Airport and Associated Infrastructure and to which it should comply.

For the purpose of Gap Analysis, the missing national policy and legal framework in the Draft ESIA Report of 2010 include the following:

##### Policy Framework

- Rwanda Environmental Policy, 2003
- The Constitution of the Republic of Rwanda of 2003 revised in 2015
- Rwanda Environmental Policy, 2013
- The Occupational Safety and Health National Policy
- The National Gender Policy, 2010
- Updated Version of the National Human Settlement Policy in Rwanda, 2009
- Rwanda HIV and AIDS National Strategic Plan 2013-2018
- National Policy for Water Resources Management
- Revised and Updated National Biodiversity Strategic Action Plan, 2014

- Rwanda Environmental Policy, 2015

#### Legal Framework

- Law N° 70/2013 of 02/09/2013 Governing Biodiversity in Rwanda
- Ministerial Regulations N° 02/Mos/Trans/015 of 08/04/2015 Implementing the Law N° 75/2013 of 11/09/2013 Establishing Regulation Governing Civil Aviation
- Regulations N° .../R/GP-EWS/RURA/2016 Governing the Construction, Installation, Upgrade and Operation of Service Stations
- Guidelines for Environmental Audit in Rwanda, 2009
- Ministerial Order N° 003/2008 of 15/08/2008 Relating to the Requirements and Procedure for Environmental Impact Assessment
- N° 18/2016 of 18/05/2016. Law governing the preservation of air quality and prevention of air pollution in Rwanda
- N° 13/2009 of 27/05/2009 Law regulating labour in Rwanda

#### ESIA Process in Rwanda

The ESIA process that is followed in Rwanda includes the compilation and submission of a formal application to the Rwandan Environmental Management Authority (REMA) and Rwanda Development Board (RDB) to initiate the process. A Terms of Reference (ToR) can either be provided to an applicant or the applicant can be pro-active and develop a draft ToR which REMA and RDB will accept.

A ToR document is then developed which provides an understanding of baseline conditions (biophysical and socio-economic) and a high-level scoping assessment of the Proposed Project to ensure all aspects have been considered as well as potential impacts that may arise as a result from the development. Stakeholder engagement will also form this phase of the ESIA Process. This document will then be submitted to REMA and RDB for consideration.

The ESIA document will be developed in accordance with Rwandan and Lender requirements. The ESIA will include quantification of potential impacts and risks resulting from the Proposed Project. Additional stakeholder engagement is also conducted to ensure all communities affected by the Proposed Project are consulted and their comments incorporated into the ESIA. An Environmental and Social Management Plan/ Programme (ESMP) will be compiled through developing mitigation and management measures for negative impacts and risks identified for the Proposed Project. The ESIA (and accompanying ESMP) will be submitted to REMA and RDB for consideration.

The draft ESIA (2010) document did not follow due process as no formal application was submitted and no evidence of a ToR document was compiled. A number of Policy and Legal Frameworks were also not considered in the previous document. Therefore is deemed to be noncompliant with Rwandan requirements.

### 3.1.2 International Finance Corporation Performance Standards

#### IFC Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts

##### Policy

In general, the draft ESIA (2010) did not consider requirements of 2006 IFC PSs, which were in effect at the time. As stated above, the IFC PSs were subsequently updated in 2012 and, as such, the ESIA (2010) would require updating to comply with these standards.

PS1 requires that the Client establishes an overarching project-specific environmental and social policy consistent with the principles of the PSs.

There is no reference to an overarching Project Sponsor's policy compliant with PS1 in terms of establishing the environmental and socio-economic baseline, evaluation of environmental and social impacts and identification of mitigation measures for potential impacts. No specific policies related to the environmental and social aspects are mentioned in the draft ESIA (2010) report.



Mota-Engil has an EHS policy, which may be possible to amend to suit BAC and the Proposed Project.

#### *Identification of Risks and Impacts*

Information contained within the ESIA (2010) report is outdated. The document did not consider all associated facilities related to the Proposed Project (i.e. quarry, access roads, power supply, landfill, water supply) in detail. Cumulative impacts as well as impacts to the climate are not adequately detailed.

No Area of Influence (AOI) has been defined in the draft ESIA (2010) report, although primary impact area of 25 km<sup>2</sup> has been discussed (which includes the differentiation of a 3 km ring (mixed land uses) and an outermost ring of 13 km (which straddles three districts)). The area of impact identified two Sectors (Rilima and Juru), three Cells (Ntarama, Karera and Kimaranzara) as well as 25 villages. In relation to the current Proposed Project, the Airport Area is an estimated 2,500 ha, the area to be cleared for construction is 80 ha and the airport footprint will represent 360 ha (see Appendix 2).

In relation to the overall methodology of the draft ESIA (2010), the following gaps were identified:

- Potential adverse impacts and risks for each stage of the Proposed Project life-cycle such as planning and design, construction, commissioning, operations, decommissioning or closure, and including post-closure have not been discussed in detail. Construction and operation phases are considered and limited impacts were considered for decommissioning phase.
- Limited information was provided regarding the methodologies of baseline environmental data obtained for the previously proposed project area. Similarly, details of the secondary data collected and used are vague. The version of the ESIA (2010) report provided to Ramboll Environ does not include the report appendices, which may hold additional baseline information.
- As noted previously, the baseline data, obtained during 2008/2009, is outdated and will need to be reassessed. Furthermore, due to the Ministry of Infrastructure conducting expropriation activities (land acquisition and involuntary resettlement), the social and environmental conditions onsite have since changed. PS1 requires that up-to-date information, including detailed description of the Proposed Project in its geographic, ecological, social, health and temporal context (the environmental and social baseline) is provided.
- Limited information pertaining to ethnicity within the previously proposed project area and surrounds was recorded (see Section 3.8).
- No discussion between the surrounding ecosystems and social/human beneficiaries is included in the report.
- Social impacts identified during the construction and operation phases are included as 'environmental impacts' and therefore, a distinction needs to be made.
- Information of the social and environmental risks and impacts associated with the previously proposed project's core supply chain is unclear and requires further consideration. The supply chain should consider suppliers that implement best environmental, social and governance standards (i.e. how the product that is to be used was manufactured, sourced, etc.).
- There is no representation with regard to the risk assessment in the document of how each impact was scored according to the parameters as well as how a positive or negative impact was determined.
- There is no indication of whether the proposed mitigation measure for the impact has managed to reduce the significance of the impact (classification of impact pre and post mitigation measures). As such, the effectiveness of the recommended mitigation measures are unknown.
- For both construction and operation phases, significance criteria mentioned in the document are not used. Parameters of magnitude, significance, probability and duration are not discussed. No impact assessment scoring is provided.

- Moreover, potential residual impacts are not discussed. Note that the mitigation actions mentioned in the report do not refer to the measures recommended by IFC and the International Civil Aviation Organisation (ICAO).
- Mitigation measures are not considered as measurable and do not include such performance indicators, targets or acceptance criteria that can be tracked over defined time periods.
- Overall numbers of the social survey sample is provided; however, no figures regarding the population of each village were provided.
- Description of impacts is often too concise, mixed with suggested mitigation measures and is not based on sufficiently detailed project technical and infrastructural solutions; some mitigation measures are, in turn, too detailed, e.g. "provision of promotional materials on HIV/AIDS such as t-shirts (S size, M, L and XL sizes), baseball caps (one size fits all), bumper stickers (200 mm x 80 mm)", etc.).
- Alternatives considered in the document are technically and financially limited.
- The previously proposed project has the potential to release hazardous, flammable or explosive materials during construction, operation and decommissioning, which have not been adequately considered (i.e. hazardous installation study for fuel storage and depots).
- Transboundary impacts have not been considered, such as impact of pollution during international travel from the previously proposed project.

#### *Management Programmes*

There is no reference to an overarching Environmental and Social Management System (ESMS) in the ESIA (2010) report. However, an Environmental and Social Management Plan (ESMP) was developed as part of the draft ESIA (2010) and includes mitigation measures and actions to avoid, minimise, compensate for or offset potential adverse impacts, or to enhance positive or beneficial impacts. The ESMP also makes reference to a number of plans, procedures and programmes (i.e. Waste Management Plan, EHS procedure, etc.) but does not provide an adoptive approach describing how to implement these. A full set of environmental and social management plans, procedures and programmes are required to achieve compliance with IFC PSs (i.e. Noise Management Plan, Waste Management Plan, Biodiversity Action Plan, Water Resources Management Plan, Ecosystem Management Plan, Community Safety Plans, Community Development Plans, etc.).

A specific air quality monitoring programme is mentioned, to ensure the performance, efficiency and effectiveness of environmental mitigation measures and programmes. However, this programme is not described in detail, as negative effects are not quantified and localised in the ESIA. In addition, Table 8-3 of the report suggests monitoring total suspended particulates (TSP), hydrogen sulphide (H<sub>2</sub>S), carbon dioxide (CO<sub>2</sub>) and methane (CH<sub>4</sub>), which are not, according to the ICAO recommendations, the most relevant parameters to monitor air quality around airports.

#### *Organisational Capacity and Competency*

The draft ESIA (2010) report does not define the Sponsor's organisational structure, capacity or competency. The ESMP makes reference to general responsibilities to implement the mitigation measures contained therein, but only makes reference to high level roles. This is outdated and will require updating and the adequate identification of management representatives.

#### *Emergency Preparedness and Response*

The ESMP in the draft ESIA (2010) makes reference to mitigation measures to protect the health and safety of the previously proposed project workers and the community in general. The measures do not contain information required to comply with IFC PSs, such as clear responsibilities for the assessment of the degree of risk to life, property and environment, and does not include procedures on who and with whom to communicate regarding different types of emergencies.

#### *Monitoring and Reviews*

The ESMP in the draft ESIA (2010) includes environmental monitoring measures, such as management records and monitoring plans. However, from a social perspective; the draft ESIA

(2010) does not provide a sufficient number of monitoring parameters for environmental and social impacts to be measured. Some indicators are vague and difficult to measure, e.g. “increased attraction of the area” and therefore require further definition and quantification. Furthermore, risk assessments considering natural disasters such as floods have not been considered.

#### *Stakeholder Engagement and Consultation*

It is not clear if a Stakeholder Engagement Plan (SEP) was prepared as part of the draft ESIA (2010); however, it was noted that an informal social scan of communities within the previously proposed project area was conducted in order to identify Project Affected Persons (PAPs). No specific mention of Affected Communities is included in the reviewed documentation.

A Social Impact Assessment was conducted and a Resettlement Action Plan (RAP) was prepared, which included a census and social survey of the community, land and asset inventory, public meetings, consultative meetings, site surveys, interviews with local administrative officer and key informants including village elders, the Chief Executives at both Sector and Cell levels and departmental heads of relevant government institutions.

It is understood that a number of individual and group meetings were held; however, no reference was made to how concerns raised during these meetings were captured and incorporated into the preparation of the draft ESIA Report or ESMP.

A Grievance Mechanism is contained within the draft RAP (2010), which was developed in accordance with Rwandan law (Article 26 of Law No. 18/2007) and provides for persons to be expropriated to seek for a second opinion in case of dissatisfaction. The land commission requested that the dissatisfied person apply in writing to hire a legally-recognised expert or survey office to revalue the land in question at their own cost.

This mechanism is not considered robust considering the complexity of the previously proposed project. During Ramboll Environ’s site visit (15 – 19 May 2017), representatives at the Government of Rwanda Ministry of Infrastructure indicated that 99.9% of the Project Affected People (PAP) have been expropriated. The expropriation process exceeded the requirements of Rwandan legislation (i.e. houses were provided to communities who were provided low monetary compensation). No documentation has been provided detailing the expropriation and therefore, this should be assessed during the compilation of the updated ESIA.

#### *IFC Performance Standard 2: Labour and Working Conditions*

##### *Working Conditions and Management of Worker Relationship*

The draft ESIA (2010) makes reference to the employment of local persons as well as the training/up-skilling of identified employees with regard to Health & Safety. The report does not, however, include any Human Resources or recruiting policies, programmes or management plans. These policies/plans/programmes should also make reference to local labour laws.

The number of temporary and permanent workers to be employed during the construction and operation phases was not detailed, and employment numbers did not mention aspects such as provision of employment to woman (gender equality) and previously affected persons. The report also does not make a distinction between direct workers, contract workers and supply-chain workers.

No reference is made about plans regarding internal (workers’) grievance mechanism during the construction and operation phases. Furthermore, no reference is made to retrenchment measures, specifically during post-construction demobilisation.

Additional aspects not observed within the draft ESIA (2010) include the load on local infrastructure (such as medical facilities, housing, public access, etc.), potential economic and social migration into the area (for job opportunities), impacts on vulnerable categories of workers such as child labour and accommodation issues during construction.

### *Occupational Health and Safety*

The draft ESIA (2010) includes adequate conditions associated with Community, Health and Security (PS4) specifically regarding communicable diseases (i.e. HIV/ AIDS). Health and safety training is also provided through the appointment of a Social Officer at the site.

The draft ESIA (2010) identifies hazards for workers including materials, environmental and working conditions as well as work processes. Physical hazards are also identified as a potential risk to workers. Measures to minimise risks are discussed and provision of Personal Protective Equipment (PPE), first aid kits, etc. is referenced.

Draft ESIA (2010) refers to procedures that should be developed (fire emergency procedure, provision of material safety data sheets from manufactures, etc.); however, it does not provide detailed plans and procedures (Emergency Response Plan, Health and Safety Procedure, etc.). The document also makes reference to different types of training, use of PPE, etc. but does not provide a specific health and safety plan. The Health and Safety Plan should be appropriate to the nature and scale of the Proposed Project and commensurate with the level of the risks and impacts associated with the Proposed Project.

Positive impacts from the Proposed Project regarding health and safety to communities include construction of associated infrastructure as a result of the airport and as such, improvement of public health and sanitation within the area.

### *IFC Performance Standard 3: Resource Efficiency and Pollution Prevention*

The draft ESIA (2010) does not make reference to total use and efficient use of resources during project design and the analysis of alternatives. Reference is made to efficient transport as a result of the previously proposed project due to competitive and alternative means of transport (previously heavy duty vehicles had to transport goods into Rwanda) and the lower transport costs for goods associated with efficient transportation.

Although it is understood that the Proposed Project location was selected based on criteria such as topographical elevation of the land and consideration of communities within the Proposed Project area, limited consideration was given to sensitive receptors, such as nearby Important Bird/Biodiversity Area (IBA) located some 5 km to the southwest of the site. Furthermore, cumulative impacts were not considered as part of the draft ESIA (2010).

### *Resource Efficiency and Pollution Prevention*

Cost-effectiveness: IFC PS3 requires projects “...to implement technically and financially feasible and cost effective measures for improving efficiency in its consumption of energy, water, as well as other resources and material inputs, with a focus on areas that are considered core business activities.”

Reference is made to consideration of solar energy (photovoltaic) panels and low-consumption LED light bulbs. No reference is made to Good International Industry Practice when choosing vehicles, machines or equipment.

Greenhouse Gases: PS1 requires that “...the risks and impacts identification process will consider the emissions of greenhouse gases, the relevant risks associated with a changing climate and the adaptation opportunities....” (PS1, clause 7). In PS3, there is also the requirement ‘for projects that are expected to or currently produce more than 25,000 tonnes of CO<sub>2</sub>-equivalent annually, the client will quantify direct emissions from the facilities owned or controlled within the physical project boundary’ (PS3, clause 8).

The draft ESIA (2010) report does not include reference to greenhouse gas generation or minimisation/trade-offs during the construction, operation or decommissioning phases. This includes direct emissions as well as emissions associated with off-site production of energy. It is understood that diesel generators will be used to provide electricity during the construction phase of the Proposed Project and that an overhead powerline will be erected for power supply during the operation phase.

Water Consumption: PS3, clause 9 requires that *“...when the project is a potentially significant consumer of water, the client shall adopt measures that avoid or reduce water usage so that the project's water consumption does not have significant adverse impacts on others.”*

The draft ESIA (2010) report indicates that approximately 600 m<sup>3</sup> of water will be required daily during construction but does not detail how this will be used or whether this volume includes aspects such as potable water and water used for construction activities (cement batching, dust submission, washing activities, etc.).

No reference is made where water will be sourced or what the current demand for water (surface and groundwater) is within the Proposed Project area. Mitigation measures include educating construction employees on proper water management and the implementation of a water monitoring programme. Additional measures involve management/prohibition of uncontrolled discharge of grey-water and engineering designs to limit spillages and runoff of contaminated water.

Mention is made to the re-routing of an existing 13.5 km pipeline from Gahembe Reservoir to Mount Juru. Potential leaking and flooding may occur during the re-routing activities as well as during hydro-testing of the pipeline. Engineering measures were proposed to minimise risks associated with the re-routing activity.

In the 2010 ESIA, it states that water will be sourced from the Ngenda Treatment Plant during the operations phase in which 600 m<sup>3</sup> per day will be required. This requires the upgrading of the existing treatment plant. Additional studies of water sources for construction and operations phases are required to comply with IFC Performance Standards if this source is to be used. Furthermore, should water abstraction occur from any water source (surface or groundwater), additional baseline studies must be conducted to identify surrounding water uses and sustainable yields regarding abstraction.

Emissions of Pollutants: When developing a new project that is expected to produce potentially significant emissions of pollutants, the existing background ambient levels must be assessed in order to identify compliance with the relevant ambient quality guidelines and/ or standards. No air quality baseline was conducted as part of the draft ESIA (2010) compilation and no modelling of potential impacts were considered. Therefore, no quantitative assessment of emissions (i.e. carbon dioxide (CO<sub>2</sub>), sulphur dioxide (SO<sub>2</sub>), nitrogen oxides (NOX), particulate matter (PM<sub>10</sub>), etc.) has been defined.

Air pollutants and dust emissions during the construction phase are identified as a negative impact in the draft ESIA (2010) report. A comprehensive list of mitigation measures is proposed for this construction phase, including earthwork equipment, construction materials processing plants and access roads. However, emission sources are not described, their locations are not presented and associated impacts have not been not adequately assessed.

The document presents negative impacts due to air and dust emissions during the operation phase. Aircraft emissions are mentioned, but detailed sources are not presented: e.g. Landing and Take-Off cycle, Ground Support Equipment, Auxiliary Power Units, Taxiing. In addition, the report does not present the locations of the sources, and pollutant emissions are not quantified. Furthermore, input data allowing for the calculation of these emissions are not presented (i.e. number of aircraft movements, aircraft types, runways and stands location, ground equipment fleet, etc.).

Road traffic sources are not presented, and related emissions are not quantified. No information is given on the locations of future access roads and car parks, and associated traffic data (annual average daily traffic, car parks capacity) are not presented.

The draft ESIA (2010) refers to the results of an air quality modelling study performed with the United States Emissions and Dispersion Modelling System (US EDMS model) within the New Kigali Airport – Business and Financial Analysis report (2007, i.e. 10 years ago). Some figures related to ground equipment contribution to the aircraft emissions are mentioned in Section 7.5.5

of the document, but the detailed emission results are not presented. The main sources are not clearly identified, which is crucial to implement efficient mitigation actions.

No air quality modelling was implemented in the framework of the draft ESIA (2010). No air quality maps are presented, and incremental pollution is not assessed in the environment of the previously proposed project and at closest living areas location. These data are crucial to assess and characterise the potential impact due to air quality degradation.

In addition, the draft ESIA (2010) does not refer to local Air Quality standards. Similarly, International Air Quality Standards proposed by IFC are not mentioned and are not used in the report, whether for comparison with air quality baseline data or cumulative results (i.e. including the contribution of the previously proposed project).

No information is given on local prevailing winds and exposure of living areas located downwind of the previously proposed project.

Erosion, Soil Quality and Groundwater Contamination: The draft ESIA (2010) makes general reference to baseline soil, surface and groundwater conditions, although from a District level. No studies appear to have been conducted to identify site specific soil conditions, quality or characteristics. The report considers impacts during construction and operation with regard to soil erosion and drainage impacts and includes engineering measures (within the ESMP) to reduce soil erosion and minimise deposition of topsoil in surrounding water resources.

Contamination of soils relate to spillages of hydrocarbons and mismanagement of concrete batching plants. These are mitigated by means of equipment checks, construction of engineering measures (i.e. bunds) and training of personnel (i.e. on spillage prevention and clean-up management).

No detail is provided for groundwater resources in the draft ESIA (2010) report. This is required by IFC Performance Standards to ascertain the baseline conditions and confirm if vulnerable aquifers are present within the site boundary.

No site specific assessment was made to surface water bodies within and surrounding the previously proposed project boundary. Limited reference is made to non-perennial rivers that flow from the site; however no water samples or studies were conducted to define the nature of the streams. Apparently, the University of Nairobi obtained surface water samples from the Akagera/Nyaborongo River, Lake Gashanga, Lake Rumira and Lake Cyohoha South and general conclusions were made. Specific analysis results referenced in Appendix 2 of the draft ESIA (2010) document were not made available to Ramboll Environ at the time of writing of this Gap Analysis Report. No nearby surface watercourses (perennial or non-perennial) were considered as part of the ESIA compilation. Reference is made to general mitigations to minimise contamination of water sources but does not consider area specific water sources.

General impacts are identified regarding soil, surface and groundwater resources; however, the report does not specify which resources may be affected and includes broad, generic management measures to mitigate anticipated impacts. This is not adequate in terms of pollution prevention.

Waste and Wastewater Management: IFC PS3 states that waste is to be managed in accordance with the waste hierarchy, i.e. avoid>reduce>recover>re-use>treat/destroy/dispose. Any disposal sites used must be developed to an appropriate standard and authorised to accept waste. If this is not the case, alternative options including developing a disposal site, must be considered. Hazardous waste must be disposed of in an environmental sound way.

The draft ESIA (2010) report makes reference to a waste collection and disposal system comprising (i) waste handling structure, (ii) waste transfer stations, and (iii) sanitary landfill. The document includes calculated waste volumes, types of waste to be generated, specifications on the size of waste handling areas (generation and transfer stations) as well as stating that the previously proposed project would require a landfill that is to be developed in an acceptable

manner. The report does not include a Waste Management Plan nor does the report provide adequate details of the landfill (location, size and design) as required by the IFC standards.

Traffic: No Traffic Impact Assessment was conducted as part of the draft ESIA (2010) process. An adequate baseline assessment will be required to define existing conditions in order to identify potential impacts such as traffic congestion and accidents due to increased vehicular movement on community roadways.

Noise and Vibration: According to the draft ESIA (2010) report, a noise survey was conducted in 2007 and reported as part of the New Kigali Airport - Business and Financial Analysis, January 2007. Based on the 2007 report, the following issues and results regarding noise include:

- Noise calculations were made using the Integrated Noise Model;
- It is assumed that 90% of the operations would occur in the northwest flow direction and that all operations would be split evenly between the two runways;
- The resulting noise exposure forecast for 2025 provides noise concentrations of 65 dB, 70 dB and 75 dB as mainly occurring within the runways; and
- It was anticipated that noise impacts from the previously proposed project would include variations in ground operational and airborne noise.

The draft ESIA (2010) notes that aircraft noise can be aggravating to persons living in the vicinity of previously proposed project area and that speech and sleep interferences are the major concerns for these receptors. In other instances, the aircraft noise was assessed to merge and fade into the surrounding din and become another source of noise sources.

According to the IFC Performance Standards, noise and vibration are defined as a pollutant and, as such, measures need to be implemented in order to avoid or minimise these adverse impacts on human health and the environment by avoiding or minimising pollution from project activities. Limited mitigation measures are included in the draft ESIA (2010); however, occupational noise is managed through engineering controls such as providing workers with PPE. Due to the change in land use since 2007, operation phase baseline monitoring will be required.

Hazardous Material Management and Pesticide Use: The best way to prevent the release of hazardous materials is to avoid their use in the first instance. The draft ESIA (2010) report identifies potential impacts in relation to the operation of equipment using hazardous substances. Limited information is provided in terms of the type and quantity of hazardous materials to be used. Reference is made to procedures, such as the development of an Emergency Response Plan to manage fuels onsite, although this is limited. Furthermore, the draft ESIA (2010) lacks an explicit statement that the previously proposed project will avoid the use of chemicals and hazardous materials subject to international bans or phase-outs (IFC PS3, clause 13).

An important aspect to be considered, which is not included in the draft ESIA (2010), is the use of pesticides, which may negatively impact soil quality and associated ecosystems. Pesticides should be selected that are low in human toxicity and that are known to be effective against target species, but with minimal effects on non-target species and the receiving environment. Furthermore, products that fall in the World Health Organisation (WHO) Recommended Classification of Pesticides by Hazardous Class Ia (extremely hazardous) or Ib (highly hazardous) should not be considered for use.

A Hazardous Material Management Plan and, if any chemical pesticides are to be used, a Pesticide Management Plan should be developed for the construction and operation phases to address relevant IFC requirements.

#### IFC Performance Standard 4: Community Health, Safety and Security

The Proposed Project is located in a remote area, comprising natural or cultivated land uses. During the compilation of the draft ESIA (2010) report, low-density informal communities were located across the previously proposed project site. The nearest village is located approximately 5 km north of the centre of the previously proposed project site (Kabukuba). However, the

presence of local nomadic populations was identified within the previously proposed project area and surrounds in the draft ESIA (2010). It is understood that expropriation of these communities has been completed and no communities are located within the site boundary. The draft ESIA did not detail where the previously proposed project construction and operation workforce will come from, where the workers will be accommodated, how they will be transported to the site, etc.

As stated previously, the socio-economic baseline, as well as the assessment of socio-economic impacts provided in the draft ESIA (2010) report is not comprehensive enough to scope in/out any potential Community Health, Safety and Security (CHSS) impacts. In view of this, as well as based on Ramboll Environ's previous experience of work on similar projects, it is noted that the following CHSS impacts may be expected:

- Increased risk of communicable and non-endemic diseases (including sexually transmitted diseases), as well as transmission among the non-local workforce and to the local communities (non-workforce);
- Conflicts and tensions as a result of cultural variations and differing mentalities between the local communities and non-resident workforce;
- Social ills and increased crime as a result of influx of surrounding communities to the Proposed Project site in search of employment opportunities;
- Potential impacts on local population health due to noise, air emissions, water use etc.;
- Community exposure to hazards;
- Intensification of local road traffic in the AOI and a resultant heightened risk of road traffic accidents, involving local communities; and
- Risk of conflicts and tensions due to the presence of security services, potential for disproportionate use of force, etc.

Depending on nature of the CHSS impacts identified, certain elements of an ESMS/ESMP may be required to mitigate potential identified risks (e.g. Offsite Traffic Management Plan, Site Security Plan, etc.).

#### IFC Performance Standard 5: Land Acquisition and Involuntary Resettlement

A draft Resettlement Action Plan (RAP) was prepared by TPS and GIBB Africa in 2010 (draft RAP 2010). The draft RAP (2010) was prepared primarily in accordance with Rwandan law on the use and management of land and the World Bank's Operational Directive (OD) 4.10 on Involuntary Resettlement. In addition, it is stated that guidance/requirements of other international organisations (essentially, the African Development Bank and the Japanese International Co-operation Agency) were taken into account. The requirements of OD 4.10 are similar, though not identical, to those of PS5. Before proceeding to an account of the key gaps between the RAP and PS5, it is noted that the RAP has only 'draft' status.

It should be noted, however, that since the compilation of the draft RAP (2010), the Ministry of Infrastructure has been involved with resettlement and expropriation of affected communities identified in the RAP document. According to the Ministry of Infrastructure (May 2017), expropriation is 99.9% complete.

The draft RAP (2010) focuses primarily on the direct core area to be developed for the airport (approximately 25 km<sup>2</sup>). It does not include the buffer zone; access roads and other infrastructure facilities required to service the airport. It also does not reference the need for land for temporary facilities such as a construction workforce camp and or construction yards/ laydown areas that might be required and be located outside the core area boundary. Thus, the draft RAP (2010) partially considers involuntary resettlement implications of the airport and Associated Facilities. PS5 refers to land acquisition for a project (as defined in PS1), PS1 states that environmental and social risks and impacts are to be determined within the context of the project's AOI (involuntary resettlement is one of these risks and impacts). PS1 requires that the AOI includes Associated Facilities.



There is also a focus on land and insufficient attention is paid to access to other resources (some are mentioned such as water supply); however there is no mention of forest/wetland resources and severance issues (restrictions on movement of PAPs) to their unaffected land or to markets.

According to the Progress Report for the New Bugesera International Airport Project Expropriation Status (31 May 2017), compiled by the Ministry of Infrastructure, a total of 2,078 families were affected by the NBIA within the AOI. These families were provided with an agreed monetary value, of which 21 families have yet to be compensated due to missing supporting documentation.

In 2015, during the expropriation process, a number of vulnerable families were identified where the compensation they were calculated to obtain was considered to be lower than the value of comparable housing and services elsewhere. These families were offered to be resettled at Kingaju Village in the Musovu Cell in Juru Sector as part of the Integrated Development Programme (IDP). The IDP village was constructed by the Government of Rwanda to provide housing and access to roads, water, agricultural land, schools, business centre, etc. to these vulnerable people. A total of 62 families were resettled to Kingaju Village. Other families that also fell into this category are understood to have made alternative arrangements of their own accord.

#### Avoidance and Minimisation of Involuntary Resettlement

PS5 requires that efforts are made to avoid or minimise involuntary resettlement; however the draft RAP 2010 does not reference this.

#### Compensation and Benefit for the Project Affected Persons

The Draft RAP (2010) contains an Entitlements Matrix, although this is preceded by a considerable number of recommendations in terms of compensation for different categories of PAPs. The RAP should state clearly what measures will be implemented as well as the recommendations. It may be that the final version for the RAP would have removed the recommendations and presented a more comprehensive and precise set of entitlements and livelihood restoration measures, but there is no evidence that a final version of the RAP was prepared and approved.

The draft RAP (2010) acknowledges the need to use replacement value and not market price (the Rwandan law focuses on market price and therefore replacement value is the more stringent approach) in terms of calculating most types of compensation. The report states that most PAPs requested monetary compensation rather than land compensation; however there is no clear account that states that the land-for-land option (considered to be more appropriate for land – based livelihoods than cash by PS5) was offered to the PAPs in a manner that considered the pros and cons of both options in balanced manner.

Finally, there is no mention of actions to ensure that PAPs will be beneficiaries for the previously proposed project.

#### Stakeholder Engagement

Substantial information is presented with respect to stakeholder engagement however it is not clear how/ when vulnerable communities were consulted or when/ how the draft RAP (2010) was disclosed. Limited information is provided with regards to the resettlement process and compensation/ livelihood restoration. Furthermore, it is not clear how the consultations affected the compilation of the draft RAP. The Grievance Mechanism outlined within the documentation is also inadequate in terms of PS5 and PS1 requirements as listed above.

#### Physical Relocation

It is understood that considerable physical relocation is required. Limited detail is provided in relation to the planning preparations for the relocation of PAPs. It is assumed that this is on the basis that most PAPs will obtain monetary compensation to purchase alternative land and buy/ construct a house in a location chosen by them.

### Economic Displacement and Livelihood Restoration Measures

Information has not been provided in relation to the restoration of livelihoods, which again is assumed that this has been as a result of the basis that most PAPs obtained or will obtain monetary compensation and will find alternative means of employment/ livelihood elsewhere.

### Institutional Arrangement and Budget

Preliminary information has been provided on a possible institutional set-up to manage the involuntary resettlement process. Furthermore, no budget has been provided in the document for the resettlement/expropriation activities.

### IFC Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

The draft ESIA (2010) has been informed by an ornithological assessment. This comprised a single bird survey covering a limited number sample locations within the previously proposed project footprint and adjacent to Lac Gashanga and Lac Murago (to the southeast of the Proposed Project site). The survey did not encompass either the likely AOI of the Expressway or the quarry area, as required by IFC Performance Standards, as these aspects were not part of the scope of the previously proposed project.

The biodiversity baseline description is inadequate to be able to complete an assessment that complies with PS6. No baseline surveys were completed in relation to other species groups such as flora, fish, amphibians or mammals.

Additional bird surveys are also required, particularly to assess wetland bird species that could be impacted by the Proposed Project. Very limited additional information was presented from secondary sources to fill data gaps. The draft ESIA (2010) did not identify the presence of legally protected or internationally recognised areas of biodiversity value. It has failed to identify the presence of the nearby Nyabarongo wetlands Important Bird Area (IBA) and has not assessed the relative importance of the wetlands within the previously proposed project's AOI. According to the International Union for the Conservation of Nature (IUCN) Red List of Threatened Species, a number of threatened and endemic species have the potential to occur in the Proposed Project's AOI, including:

- Nine threatened species of birds – *Aquila nipalensis* Steppe Eagle, *Ardeola idae* Madagascar Pond-heron, *Balearica regulorum* Grey Crowned-crane, *Gyps africanus* White-backed Vulture, *Gyps rueppelli* Rüppell's Vulture, *Necrosyrtes monachus* Hooded Vulture, *Psittacus erithacus* Grey Parrot, *Torgos tracheliotos* Lappet-faced Vulture and *Trigonoceps occipitalis* White-headed Vulture;
- One endemic species of amphibian *Hyperolius rwandae* Rwanda Long Reed Frog; and
- At least three species of threatened or endemic fish species – *Labeo victorianus* (Ningu) and *Varicorhinus ruandae* Rwandese Carp.

The habitats present are not described clearly and have not been assessed as to whether they represent modified, natural or critical habitat as required by PS6. It is not currently possible to assess whether the previously proposed project or currently Proposed Project meet the requirements relating to modified, natural or critical habitats (paragraphs 11-19 of PS6). While the information currently available to Ramboll Environ suggests that the Proposed Project site is largely modified farmland habitats, there appear to be natural wetland habitats within the AOI. Due to status of the wetlands as an IBA, there is the potential that they could also meet the definition of critical habitat.

The draft ESIA (2010) did not assess potential impacts or mitigation requirements in relation to biodiversity. It includes a section on the potential for bird strike with aircraft. However, this relates to the risk to air safety, not the impact to birds as biodiversity features. The measures prescribed to reduce risk to aircraft are likely to increase impacts to birds.

As described above, the draft ESIA (2010) failed to identify the presence of the nearby Nyabarongo wetlands IBA. Paragraph 20 of PS6 details specific measures relating to

internationally recognised areas such as IBAs, including targeted stakeholder engagement and additional measures to potential additional programs, as appropriate, to promote and enhance the conservation aims and effective management of the area. These requirements are not addressed in the draft ESIA (2010).

The potential for alien invasive species is not assessed by the draft ESIA (2010) and no mitigation or control measures are included.

Ecosystem services have not been assessed in line with paragraphs 24 and 25 of PS6. There are likely to be important ecosystem services derived by locally affected communities, such as food provision (e.g. farming, fishing, hunting, etc.), use of medicinal plants, use of fibres (e.g. reeds for basket making), construction materials and fuel (firewood). These are likely to be impacted by the Proposed Project and displacement of people can in turn have knock-on effects on biodiversity.

#### IFC Performance Standard 7: Indigenous Peoples

The draft ESIA (2010) briefly outlines, in the socio-economic environment section, information relating to the Hutu, Tutsi and the Batwa, referred to as Twa. Twa are mentioned in the context of Rwanda but not specifically in terms of the previously proposed project's AOI and as such it is not clear whether these groups are present in the previously proposed project's AOI. The draft ESIA (2010) does not adequately identify whether any of these groups are considered to be an indigenous people. PS7 states that its applicability must be determined during the environmental and social risks and impacts identification process.

As there is no mention of indigenous people or reference to PS7 within the existing documentation, there is no certainty as to the presence/absence of indigenous people who may be affected by the Proposed Project. Neither the Hutu nor the Tutsi meet the set of PS7 criteria for identification as an indigenous people; however, there may be Twa (a member of a wider ethnic group commonly known as 'pygmies'<sup>4</sup>) living in the vicinity of the Proposed Project site. The Twa originally were a hunter-gatherer culture, which entered into an economic relationship (exchange of goods/ products) with 'Bantu' sedentary agriculturalists in a number of Great Lakes countries, including Rwanda. Over time Twa groups often became a 'caste' within the wider 'Bantu' culture. In many cases, Twa now live on the margins of politically and culturally dominant ethnic groups with many of the attendant disadvantages.

Additional baseline work is required to determine whether (or not) any Twa households or groups are present in the AOI and are likely to be affected by the Proposed Project. If this were found to be the case, a judgment must be made as to whether the Twa are an indigenous people within the meaning of PS7 and, therefore, whether PS7 is applicable to the Proposed Project.

#### IFC Performance Standard 8: Cultural Heritage

IFC PS8 aims to preserve and protect cultural heritage by avoiding, reducing, restoring, where possible, and in some cases, compensate adverse impacts that project may cause to cultural heritage. Cultural heritage is considered a unique and often non-renewable resource that possesses cultural, scientific, spiritual, or religious value and includes moveable or immovable objects, sites, structures, groups of structures, natural features, or landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural value.

No reference is made to any archaeological, cultural or heritage baseline studies for the previously proposed project area and surrounds. Similarly, no mention of any archaeological, cultural or heritage impact is considered and no management plans for these resources are provided. Furthermore, no Chance-find Procedure (method statement) is included in the draft ESIA (2010) report.

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<sup>4</sup> The term 'pygmies' is often considered to be a pejorative; however, it remains in general usage and is used, also, by some members of groups classed as 'pygmies' (by members of other ethnic groups).

### 3.2 Environmental, Health and Safety Guideline for Airports

Ramboll Environ considered the EHS Guideline for Airports (2007) to ensure all international aspects are considered for the Update of the ESIA. The following was identified against the draft ESIA (2010).

#### 3.2.1 Noise and Vibrations

The most significant sources of noise and vibration from airport operations will be from aircraft during the landing and take-off (LTO) cycles, followed by a variety of ground operations equipment including aircraft taxiing; operation of ground support vehicles (e.g. passenger buses, mobile lounges, fuel trucks, aircraft tugs, aircraft and baggage tractors, and dolly carts); aircraft auxiliary power units (APUs); and aircraft engine testing activities in airports with aircraft maintenance activities.

The draft ESIA (2010) does not adequately consider noise and vibration impacts of airport operations and does not include noise management practices, as contained in the IFC EHS Guideline for Airports.

#### 3.2.2 Air Emissions

Refer to Section 3.1.2.3: Emissions of Pollutants.

#### 3.2.3 Stormwater and Wastewater

Effluents from airport operations will mainly consist of stormwater runoff from paved surfaces and sanitary wastewater from public and employee services and from aircraft. Stormwater runoff may include pollutants associated with leaks and spills of oil, diesel, and jet fuels during operation and maintenance of ground service vehicles, and fuel storage and handling activities.

The draft ESIA (2010) report does not consider aspects associated stormwater runoff during the operation phase of the project.

Although reference is made to engineering designs to reduce potential water and soil contamination, no reference is made to a stormwater management plan in the draft ESIA (2010) report. The project site, although relatively uniform, increased stormwater runoff will occur during the construction and operation phase of the project. This may have a negative impact on the rate of soil erosion, increased runoff into surrounding wetlands resulting in flooding and potential transport hazardous materials (i.e. hydrocarbon spillages, etc.) to sensitive receptors.

Wastewater will be managed via a wastewater treatment plant; however, the details of the wastewater treatment plant are not provided and there is no confirmation if the plant will have the capacity or adequate engineering designs to minimise potential contamination to offsite receptors.

#### 3.2.4 Hazardous Material Management

Refer to Section 3.1.2.3: Hazardous Material Management and Pesticide Use.

#### 3.2.5 Waste Management

Refer to Section 3.1.2.3: Waste Management.

#### 3.2.6 Occupational Health and Safety

Refer to Section 3.1.2.4.

Additional occupational health and safety aspects that are not considered in Section 3.1.2.4 and the draft ESIA (2010) include aspects pertaining to moving equipment, strains and weather elements that could affect employees while onsite. Employees and operators must be made aware of moving equipment (ground and support vehicles and aircraft) and must be adequately trained in preventative measures. Furthermore, vehicles should be maintained, have back-up alarms, moving part guards and emergency stop switches.

Furthermore, although the draft ESIA (2010) considered health and safety aspects regarding construction and operational activities, it does not consider specific impacts such as strains from luggage and cargo handling. Operators should consider mechanizing cargo and luggage handling activities.

#### 3.2.7 Chemical Hazards

Refer to Section 3.1.2.3: Hazardous Material Management and Pesticide Use.

#### 3.2.8 Community Health and Safety

Refer to IFC Performance Standard 4.

One aspect, which the EHS Guideline for Airports identifies as a hazard, is Wildlife Strikes. This is considered in some detail within the draft ESIA (2010) report and a number of management measures are proposed to minimise potential bird strike accidents.

### 3.3 Summary

The draft ESIA (2010) and draft RAP (2010) do not comply with all Rwandan legislation and, therefore, these documents are considered fatally flawed. Furthermore, as the IFC Performance Standards were not considered as part of the ESIA process, the documents do not comply with international standards and therefore would not be accepted by Lenders. As the environmental and social baselines are not adequately defined, the assessment of potential impacts is considered unreliable. Finally, due to the time lapse from the compilation of the draft report (2009/2010), the baseline conditions of the Proposed Project site have changed (expropriation of PAPs, etc.) and additional studies are required to describe existing environmental and social conditions across the Proposed Project area and surrounds.

## 4. SUMMARY OF FINDINGS AND ENVIRONMENTAL AND SOCIAL ACTION PLAN

### 4.1 Review Findings

A summary of the review findings of the draft ESIA (2010) and RAP (21010) is presented in Table 4-1. The findings for each compliance issue against the standards identified above are presented according to the following:

- The topic/aspect;
- A description of the issue;
- Identification of the standard(s) against which the non-compliance has been identified;
- Recommendations to resolve/manage the non-compliance;
- The materiality on a 3-point scale (see below for criteria); and
- A timescale for compliance to the standards to be achieved.

### 4.2 Materiality Categorisation

Identified omissions/deficiencies are assessed in terms of both materiality and status using the following categorisation criteria.

#### Materiality

Low	Individual minor inconsistencies, errors and omissions that diminish the technical accuracy of the document, but do not significantly influence the compliance of the document with relevant standards.
Moderate	Issues where there is some uncertainty as to whether they would meet relevant standards. This could be due (for example) to insufficient information being available in the available documentation to allow proper assessment, or where the issue in question is not clearly defined in relevant standards.
High	Significant errors or omissions that must be rectified to meet compliance with relevant standards.

#### Status

Closed	Issue has been closed to the extent appropriate that current stage of the Proposed Project.
Pending	Further work is required to close the issue, but appropriate plans are already in place.
Outstanding	Further work is required to close the issue and plans are yet to be defined to do so.

These categories are applied to each individual item in the review findings.

Table 4-1: Compliance Table and Environmental and Social Action Plan					
Aspect	Issue Description	Recommendation	Materiality (L/ M/ H)	Timeframe	Status
<b>IFC PS1: Assessment and Management of Social and Environmental Risks and Impacts</b>					
Environmental & Social (E&S) Policy	No evidence of an E&S policy fully compliant with the requirements of PS1 was available in the Project documents.	Prepare and adopt a PS1 compliant E&S policy.	H	By 30 June 2018	Outstanding
Identification of Risks and Impacts	<p>ESIA (2010) Report did not comply with Rwandan requirements nor did the report consider IFC Performance Standards as needed by Lenders.</p> <p>Report did not consider all Associated Facilities relating to the project in detail.</p> <p>Cumulative impacts were not assessed adequately.</p> <p>Report makes reference to primary impact area; however, does not define the AOI of the previously proposed project.</p> <p>Impacts were not considered for all phases of the previously proposed project (i.e. construction, operation and decommissioning).</p> <p>The report does not assess the relationship between the ecosystems and social beneficiaries.</p> <p>There is no representation with regard to the risk assessment in the document of how each impact was scored according to the parameters as well as how positive and negative impacts were determined. There is</p>	An updated ESIA including detailed environmental and social impact within the AOI in accordance with applicable Rwandan laws and Lender standards should be conducted to adequately address the gaps identified.	H	By 1 October 2017	Outstanding

**Table 4-1: Compliance Table and Environmental and Social Action Plan**

Aspect	Issue Description	Recommendation	Materiality (L/ M/ H)	Timeframe	Status
	<p>no indication of the whether the proposed mitigation measures for the potential impacts would manage to reduce the significance of the impact.</p> <p>For both the construction and operation phases, significance criteria mentioned in the ESIA (2010) report are not used. Parameters of magnitude, significance, probability and duration are not discussed. No impact assessment scoring is provided.</p> <p>The efficiency of mitigation measures mentioned in the report is not assessed, and potential residual impacts are not discussed. Note that the mitigation actions mentioned in the report do not refer to the measures recommended by IFC and ICAO.</p> <p>Mitigation measures are not considered as measurable and do not include such performance indicators, targets or acceptance criteria that can be tracked over defined time periods.</p> <p>Alternatives considered in the document are technically and financially limited.</p>				
Baseline Conditions	Limited information is provided regarding the methodologies of baseline environmental data obtained for the project area. Similarly, details of the secondary data collected and relied upon are vague and not fully referenced. Note, appendices to the ESIA	Updated and comprehensive environmental and social baseline surveys and studies of the AOI need to be conducted to define the existing baseline environmental conditions.	H	Before end August 2017	Outstanding



**Table 4-1: Compliance Table and Environmental and Social Action Plan**

Aspect	Issue Description	Recommendation	Materiality (L/ M/ H)	Timeframe	Status
	<p>(2010) report were not available, which may contain some of this information.</p> <p>Baseline data for the Proposed Project was obtained during 2008/2009 is outdated and will need to be reassessed. The social baseline has also been affected with the expropriation of affected persons.</p> <p>Wet and dry season baseline assessments were not conducted to adequately define the environmental and social conditions within the AOI.</p>				
Organisational Capacity and Competency	The ESIA (2010) report does not define the Sponsor's organisational structure, capacity or competency. The ESMP makes reference to general responsibilities to implement the mitigation measures contained therein, but makes reference to high level roles. This is outdated and will require updating and the adequate identification of management representatives	An Environmental and Social Management System (ESMS) should be established in line with IFC standards, including policy; identification of risks and impacts; management plans/programmes; organisational capacity and competency; emergency preparedness and response; stakeholder engagement; and monitoring and review.	M	By 30 June 2018	Outstanding
Emergency Response	The measures contained in the ESMP do not contain required information such as clear responsibilities for the assessment of the degree of risk to life, property and environment, and does not include procedures on who and with whom to communicate regarding different types of emergencies.	<p>Detailed Construction and Operation Emergency Preparedness Plans, Oil Spill Procedures and a Hazardous Material Management Plan should be prepared.</p> <p>Consideration of preparedness/response actions for natural</p>	M	<p>By 30 September 2017 for Construction</p> <p>By 30 June 2018 for Operation</p>	Outstanding

<b>Table 4-1: Compliance Table and Environmental and Social Action Plan</b>					
<b>Aspect</b>	<b>Issue Description</b>	<b>Recommendation</b>	<b>Materiality (L/ M/ H)</b>	<b>Timeframe</b>	<b>Status</b>
	No risk assessment considering natural disasters such as flooding has been conducted.	disasters/severe weather events in those management plans is recommended.			
Stakeholder Engagement	No Stakeholder Engagement Plan was prepared. Insufficient focus on Affected Communities and no indication of how the results of engagement were used in the ESIA process.  The Grievance Mechanism is not considered robust considering the complexity of the project; however, according to government personnel during Ramboll Environ's site visit (15 – 19 May 2017), 99.9% of communities have been expropriated.	Prepare an SEP for the update ESIA to ensure statutory consultees and Affected Communities within the AOI are consulted.  Ensure a comprehensive Grievance Mechanisms is developed and implemented for the Proposed Project.	M	31 July 2017	Outstanding
<b>IFC PS2: Labour and Working Conditions</b>					
Labour and Working Conditions	This was not considered in the draft ESIA (2010) for both Project workers and the Project's core supply chain.	Labour and Working Conditions as contained in IFC PS2 must be considered in the updated ESIA Report.	M	By 30 September 2017	Outstanding
Occupational Health and Safety	No specific Health and Safety Plan exists within the draft ESIA (2010).	A detailed Health and Safety Plan as required by IFC requirements should be developed and implemented onsite.	M	By 31 August 2017	Outstanding
<b>IFC PS3: Resource Efficiency and Pollution Prevention</b>					
Resource Efficiency	No reference is made to good international industry practice when selecting vehicles, machinery or equipment.	Consideration to good international industry practice should be considered when purchasing vehicles, equipment or machinery.	L	By 31 December 2017	Outstanding

Table 4-1: Compliance Table and Environmental and Social Action Plan					
Aspect	Issue Description	Recommendation	Materiality (L/ M/ H)	Timeframe	Status
Greenhouse Gasses	The draft ESIA (2010) report does not include reference to greenhouse gas generation or minimisation/trade-offs during construction, operation or decommissioning phases.	Generation and management/ minimisation of Greenhouse Gases should be considered in the Updated ESIA.	M	By 31 August 2017	Outstanding
Water Consumption	Inadequate reference is provided as to the source of water and if this source could yield the required volume for the Proposed Project in a sustainable manner.  Sustainable water use is not discussed in detail within the draft ESIA report.	Water consumption figures are to be updated for the Proposed Project and water saving mechanisms identified and implemented during construction and operation.	M	By 31 August 2017	Outstanding
Air Quality	No air quality baseline was conducted as part of the draft ESIA (2010) and no modelling of potential impacts was undertaken. Therefore, no quantitative assessment of emissions (i.e. CO <sub>2</sub> , SO <sub>2</sub> , NO <sub>x</sub> , PM <sub>10</sub> , etc.) was defined.  Emission sources are not described, their locations are not presented and associated impacts were not adequately assessed.  Aircraft emissions are mentioned, but detailed sources are not presented (no emission quantification is available).  The ESIA (2010) does not include an assessment of air quality degradation due to the project.  No quantitative impact assessment is available.  Relevancy of mitigation actions is not sufficiently specific.	Implementation of an air quality monitoring programme covering wet and dry season.  Collection of input data (construction and operation phases) and characterisation of emission sources, based on robust input data (including road traffic, aircraft movement and ground support equipment).  Calculation of emission sources based on ICAO Air Quality Guidelines (Doc. 9889, 2010).  Implementation of a dispersion modelling system recommended by IFC and ICAO to calculate incremental	M-H	July 2017  September 2017  August 2017  September 2017	Outstanding

**Table 4-1: Compliance Table and Environmental and Social Action Plan**

Aspect	Issue Description	Recommendation	Materiality (L/ M/ H)	Timeframe	Status
	No Air Quality Monitoring Plan was developed.	<p>pollution due to the project (operation phases).</p> <p>Comparison of incremental and cumulative pollution with International Air Quality Standards. Application of significance criteria.</p> <p>Definition of mitigation actions according to emission inventory and modelling results. Assessment of mitigation measures efficiency and residual effects.</p> <p>A construction phase Air Quality Monitoring Plan should be developed and implemented as soon as possible.</p> <p>Design of an operation phase Air Quality Monitoring Plan according to the update ESIA results.</p>		<p>September 2017</p> <p>November 2017</p> <p>End of May 2017</p> <p>December 2017</p>	
Noise	Limited mitigation measures are included in the draft ESIA (2010). Occupational noise was proposed to be managed through engineering controls, such as providing workers with PPE. Due to the change in land use since 2007, additional baseline monitoring will be required for the operation phase.	Identify a suitable and internationally recognised model to adequately mimic baseline conditions in order to define the existing noise conditions in order to identify potential impacts from the Proposed Project.	M	August 2017	Outstanding

**Table 4-1: Compliance Table and Environmental and Social Action Plan**

Aspect	Issue Description	Recommendation	Materiality (L/ M/ H)	Timeframe	Status
Soils	The draft ESIA (2010) makes general reference to baseline soil conditions from a District level. No studies seem to have been conducted to identify site specific soil conditions, quality and characteristics.	Consider conducting soil studies to adequately define soil conditions, quality and characteristics.	M	August 2017	Outstanding
Waste (Solid Waste)	<p>Only high level estimates of waste quantities and types are provided for both construction and operation phases of the previously proposed project.</p> <p>Other than solid waste types that can be disposed of at the proposed sanitary landfill, there are insufficiently clear recommendations for what waste streams will be generated and how the volume of waste generated will be reduced, reused or recycled. There is therefore not enough confidence that all waste streams will be appropriately managed. For example, no detail is provided regarding management of hazardous waste or of how recyclables will be processed and whether there are markets for these recyclables.</p> <p>Construction waste is not adequately discussed in terms of impact, management and volumes; however, the topic is included in the ESMP of the draft ESIA (2010) and in Table 8.1 of the document which provides a comprehensive set of measures to be implemented.</p> <p>No baseline for waste is provided, i.e. what existing facilities are in place in the study area, are there markets for recyclables, etc. The Proposed Project has the potential to</p>	<p>Establish existing waste management facilities and infrastructure.</p> <p>Provide additional detailed estimates of construction and operational waste volumes.</p> <p>Develop more detailed waste management strategies for both construction and operational waste streams generated.</p> <p>Develop a Waste Management Plan for the construction, operation and decommissioning phases of the Proposed Project.</p> <p>Additional detail is required for the landfill including where the landfill is located, if the landfill is adequately designed (i.e. does not cause environmental or social risks), if the landfill is authorised to accept hazardous and non-hazardous waste streams and</p>	H	During design phase (to ensure design adequately considers waste management)	Outstanding

**Table 4-1: Compliance Table and Environmental and Social Action Plan**

Aspect	Issue Description	Recommendation	Materiality (L/ M/ H)	Timeframe	Status
	<p>improve current waste management practices but this is unknown without an understanding of the baseline.</p> <p>No details are provided with regard to what permitting will be necessary in relation to waste management.</p> <p>In summary: insufficient information provided on estimated waste production, and relating to how waste will be managed in accordance with the waste hierarchy.</p>	if the landfill is authorised (i.e. has an operational permit).			
Hazardous Materials	<p>Limited information is provided in terms of the type and quantity of hazardous materials to be used. No statement exists that states that the project will avoid the use of chemicals and hazardous materials subject to international bans or phase-outs.</p> <p>No reference is made to the potential use and management of pesticides.</p>	<p>All hazardous materials used onsite are to be calculated and identified. Where possible, substitute hazardous materials with more environmental friendly alternatives.</p> <p>Pesticides should be selected that are low in human toxicity and that are known to be effective against target species, but with minimal effects on non-target species and the receiving environment.</p>	M	September 2018	Outstanding
Traffic	No traffic impact assessment was conducted to define baseline conditions.	Conduct a traffic impact assessment in order to adequately assess the potential of traffic congestion and accidents.	M	August 2017	Outstanding

Table 4-1: Compliance Table and Environmental and Social Action Plan					
Aspect	Issue Description	Recommendation	Materiality (L/ M/ H)	Timeframe	Status
<b>IFC PS4: Community Health, Safety and Security</b>					
Community Health, Safety and Security	Inadequate assessment to identify potential Community Health, Safety and Security (CHSS) impacts.	Conduct an assessment of impacts on community health, safety and security.	M	August 2017	Outstanding
<b>IFC PS5: Land Acquisition and Involuntary Resettlement</b>					
Involuntary Resettlement	The draft RAP (2010) only focuses on the previously proposed project's core area and does not include the land/people within the buffer zones or the Expressway, access roads and other Associated Facilities.	Determination whether a RAP or Livelihood Restoration Plan (LRP) is needed for the Proposed Project buffer zone and Associated Facilities. If a RAP or LRP is required, it will need to be prepared immediately after the determination.	H	By 31 August 2017	Outstanding
	There are no details on how the draft RAP (2010) was implemented and therefore whether the 'resettlement' actions were in accordance with PS5 requirements.	Determination whether the draft RAP was implemented (or not) will need to be identified and whether the resettlement' actions were in accordance with PS5 requirements. If not, then formulation of measures that can be taken, retrospectively, to ensure compliance (in terms of outcomes for the PAPs).	H	By 31 August 2017	Outstanding
<b>IFC PS6: Biodiversity and Sustainable Management of Living Natural Resources</b>					
Biodiversity	Inadequate baseline descriptions. Direct and indirect impacts to biodiversity were not assessed as required by paragraph 6 of PS6.	Additional biodiversity surveys required to classify modified, natural and critical habitat. This includes surveys for vegetation, fish, amphibians, birds and mammals.	H	August 2017	Outstanding

**Table 4-1: Compliance Table and Environmental and Social Action Plan**

Aspect	Issue Description	Recommendation	Materiality (L/ M/ H)	Timeframe	Status
	<p>Mitigation measures in relation to biodiversity following the mitigation hierarchy are required as per paragraph 7 of PS6.</p> <p>Habitats need to be defined according to PS6 definitions for modified, natural and critical habitats. The Project needs to be assessed against the requirements of paragraphs 11-19 in PS6.</p>	<p>Critical habitat assessment required.</p> <p>An assessment of impacts on biodiversity features is required, including indirect impacts such as noise and air quality.</p> <p>ESMP will likely require additional mitigation measures that follow mitigation hierarchy. The client will need to demonstrate measures taken to avoid impacts to biodiversity.</p> <p>Any residual effects need to be assessed including whether biodiversity offsets may be required.</p>			
Biodiversity	<p>Legally protected areas and internationally recognised areas need to be identified and the Project assessed against the requirements of paragraph 20. PS 6 requires the Proposed Project to:</p> <ul style="list-style-type: none"> <li>• Demonstrate that development in such areas is legally permitted;</li> <li>• Act in a manner consistent with any government recognised management plans for such areas;</li> <li>• Consult protected area sponsors and managers, Affected Communities,</li> </ul>	<p>Additional targeted bird surveys in relation to the Nyabarongo wetlands IBA.</p> <p>Targeted stakeholder Engagement to be conducted as per requirements.</p> <p>Identify potential additional programs, as appropriate, to promote and enhance the conservation aims and</p>	H	August 2017	Outstanding



**Table 4-1: Compliance Table and Environmental and Social Action Plan**

Aspect	Issue Description	Recommendation	Materiality (L/ M/ H)	Timeframe	Status
	<p>Indigenous Peoples and other stakeholders on the proposed project, as appropriate; and</p> <ul style="list-style-type: none"> <li>Implement additional programmes, as appropriate, to promote and enhance the conservation aims and effective management of the area.</li> </ul>	effective management of the area.			
Invasive Alien Species	The potential for alien invasive species in not assessed by the ESIA (2010) and no mitigation or control measures are included.	<p>Biodiversity surveys to include assessment of invasive species.</p> <p>ESMP will likely require additional mitigation measures to control alien invasive species.</p>	M	August 2017	Outstanding
Ecosystem Services	Ecosystem services were not assessed in line with paragraphs 24 and 25 of PS6.	<p>Screen the likely ecosystem services that are relevant to the Project AOI and categorise them according to either priority 1 or priority 2 ecosystem services:</p> <ul style="list-style-type: none"> <li>Priority 1 - services on which project operations are most likely to have an impact and, therefore, which result in adverse impacts to Affected Communities.</li> <li>Priority 2 - Those services on which the project is directly dependent for its operations (e.g. water).</li> </ul>	H	August 201	Outstanding

Table 4-1: Compliance Table and Environmental and Social Action Plan					
Aspect	Issue Description	Recommendation	Materiality (L/ M/ H)	Timeframe	Status
		ESMP will likely require additional mitigation measures to mitigate potential impacts to ecosystem services.			
<b>IFC PS7: Indigenous Peoples</b>					
Indigenous Peoples	No evidence presented in the ESIA (2010) report to enable a judgement to be made on whether there were/are any indigenous people present in the previously proposed project or Proposed Project's AOI that were/might be affected.	An additional social study should be conducted to assess the potential of indigenous peoples located in and around the project area.	H	By 31 August 2017	Outstanding
<b>IFC PS8: Cultural Heritage</b>					
Cultural and Heritage	No reference is made to any archaeological, cultural or heritage baseline study for the project area and surrounds. Similarly, no mention of any archaeological, cultural or heritage impact is considered and no management plans for these resources are provided.	Conduct an archaeological, cultural and heritage assessment of the AOI to identify resource that possesses cultural, scientific, spiritual, or religious value and includes moveable or immovable objects, sites, structures, groups of structures, natural features, or landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural value.	M	June 2017	Outstanding
		Draft and implement an Archaeological, Cultural and Heritage Chance Finds Procedure as soon as possible.	H	By end of July 2017	Outstanding

Table 4-1: Compliance Table and Environmental and Social Action Plan					
Aspect	Issue Description	Recommendation	Materiality (L/ M/ H)	Timeframe	Status
<b>EHS Guideline for Airports</b>					
Noise and Vibration	The draft ESIA (2010) does not adequately consider noise and vibration impacts of airport operations and does not include noise management practices as contained in the IFC EHS Guideline for Airports.	An adequate baseline assessment should be conducted in order to model anticipated scenarios during the operation phase to identify adequate mitigation measures.	M	December 2017	
Air Emissions	See Air Quality above.				
Stormwater and Wastewater	<p>The draft ESIA (2010) report does not consider aspects associated stormwater runoff during the operation phase of the previously proposed project.</p> <p>Details of the wastewater treatment plant are not provided and there is no confirmation if the plant will have the capacity or adequate engineering designs to minimise potential contamination to offsite receptors</p>	<p>Ensure that a Stormwater Management Plan is developed for the site.</p> <p>Ensure an onsite wastewater treatment plant is correctly designed and constructed to manage wastewater generated from the airport.</p>	M	September 2017	
Hazardous Material Management	See Hazardous Materials above.				
Waste Management	See Waste Management above.				
Occupational Health and Safety	Inadequate detail is provided in relation to aspects such as the management of moving equipment, strains and weather elements that could affect employees while onsite.	Ensure that adequate occupational health and safety measures are considered and implemented for employees.	M	September 2017	
Chemical Hazards	See Hazardous Materials above.				
Community Health and Safety	See Community Health, Safety and Security above.				

## 5. CONCLUSION AND RECOMMENDATIONS

The following is a summary of the overall conclusions:

- The ESIA (2010) and RAP (2010) do not fulfil at a procedural or technical level the conditions associated with Rwandan environmental legislation and regulatory requirements in relation to the previously proposed scheme. In addition, due to the recent changes made to the airport masterplan, these documents can only serve as input to a new ESIA and RAP as part of a new application to the Rwandan environmental authorities and in fulfilment of International Lender requirements.
- The International Finance Corporation Performance Standards (IFC PS), version 2006 in force at the time of the ESIA (2010), were not considered as part of the ESIA process, and are now out of date (the IFC PS were amended in 2012); therefore the ESIA (2010) report would not be accepted by International Lenders.
- Due to the time lapse from the compilation of the draft ESIA (2010) report (2009/2010), the social and environmental baseline conditions of the Proposed Project site have changed and additional studies are required to describe existing conditions across the Proposed Project Area and the Proposed Project Area of Influence.
- Since the Request for Proposal for this assignment was issued by Mota-Engil dated 23 February 2017, further elements have been added to the scope of the Proposed Project over and above those that were assessed as part of the previously proposed project as part of the ESIA (2010) and RAP (2010). These include a 14 km Expressway to link the airport to the national KK-15 Road joining at the existing Nyabarongo Bridge and an approximately 5 km water supply pipeline from Lake Kidogo to provide water for the construction phase. These will need to be considered as part of the updated ESIA. There are also Associated Facilities to the Proposed Project, which include the quarry to the northeast of the Proposed Project for the supply of aggregates, upgrades to the road to the quarry and the temporary construction phase water supply pipeline, and consideration of the permanent power and water supply and other services for the operational phase that will need to be identified and subsequently addressed as part of the updates to the ESIA and RAP.
- The draft ESIA (2010) document did not follow due process as is required by Rwandan Regulators, as no formal application was submitted and no evidence of a Terms of Reference (ToR) document was compiled. A number of Policy and Legal Frameworks were also not considered in the previous document. Therefore the draft ESIA (2010) is deemed to be noncompliant with Rwandan requirements.

In view of the points highlighted above, it is Ramboll Environ's recommendation that a new ESIA and RAP be prepared based on any relevant information that can be relied upon from the ESIA (2010) and RAP (2010).

## **APPENDIX 1**

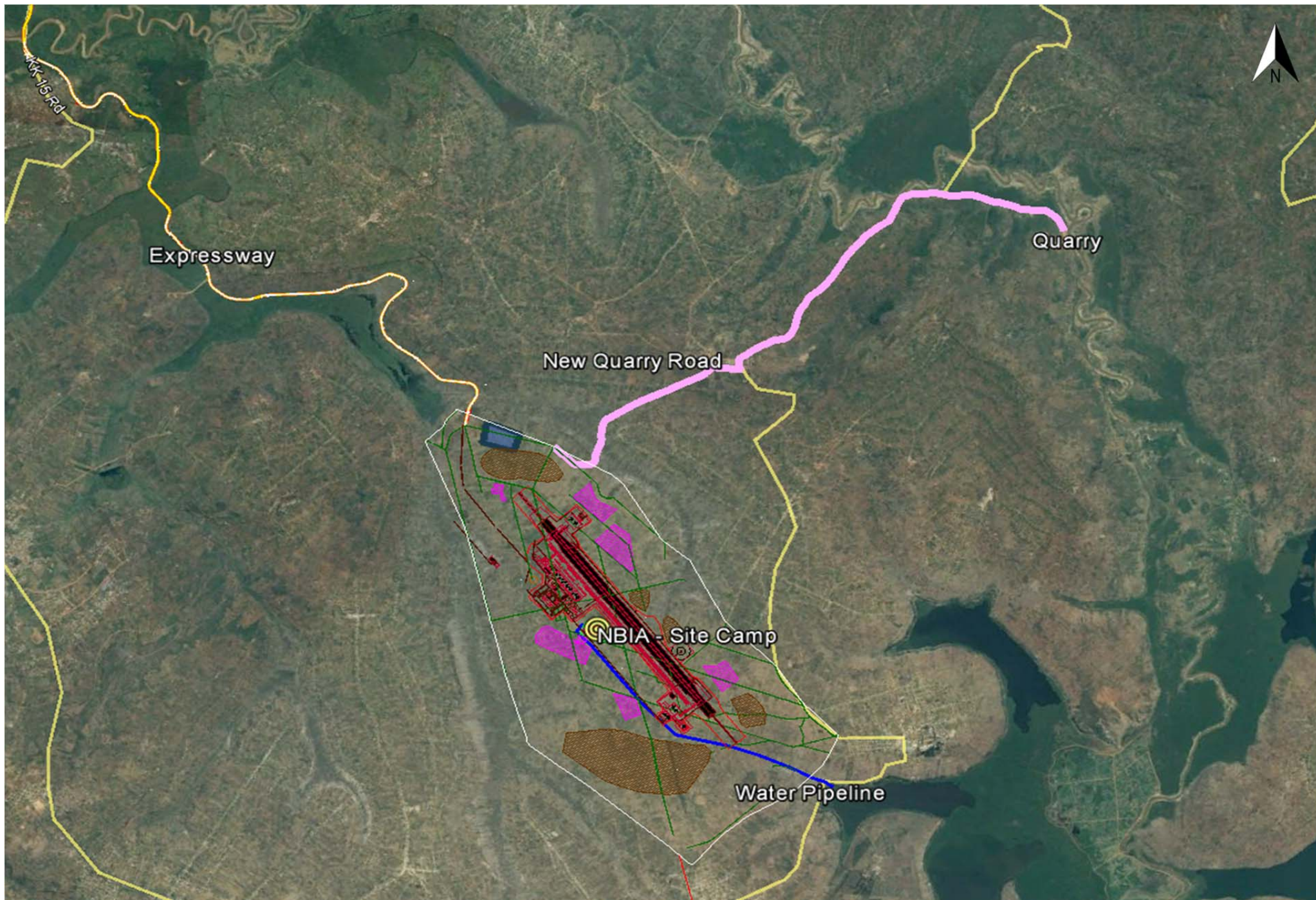
### **LIST OF STATUTORY CONSULTEES AND REGULATORS MET**

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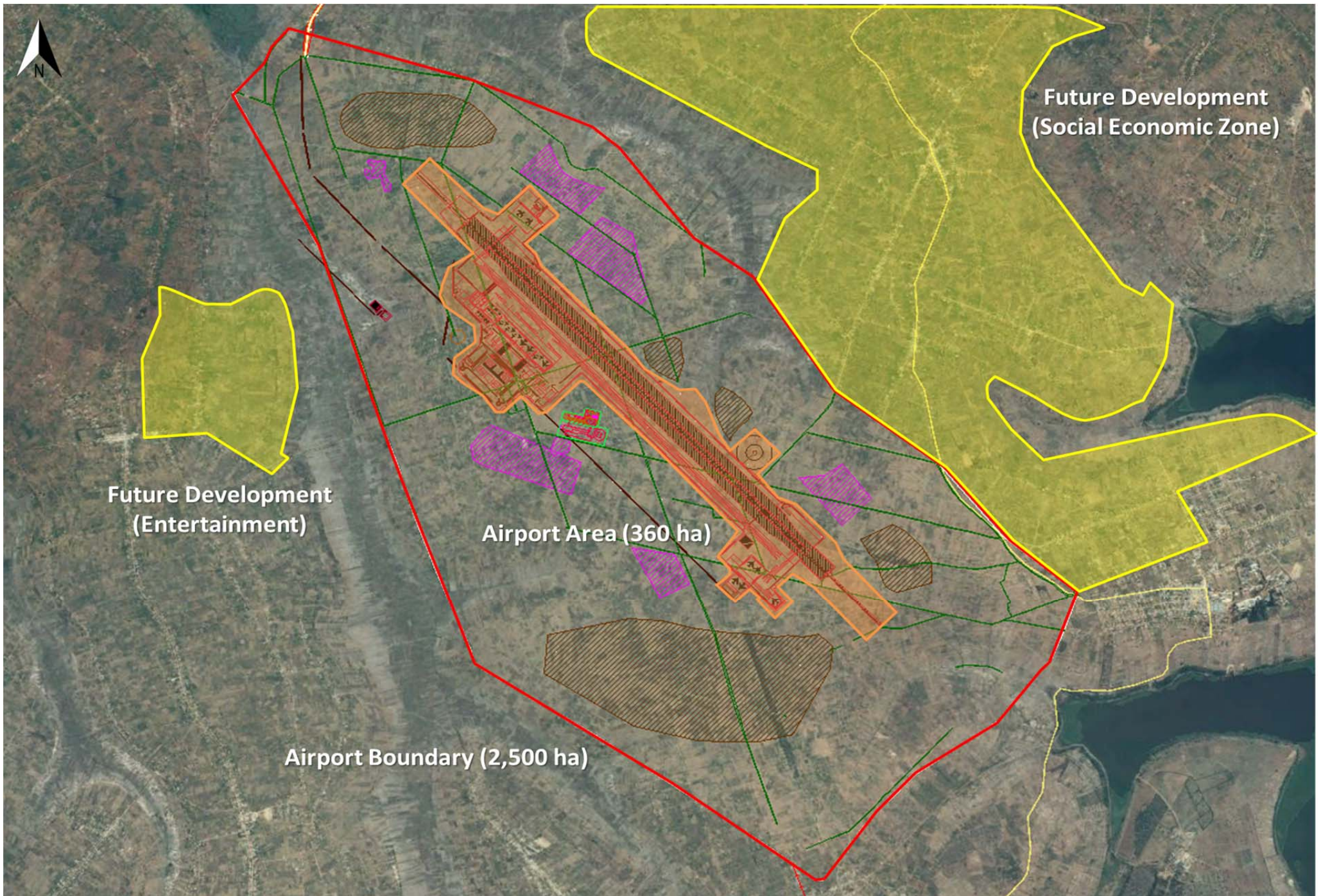
## **APPENDIX 2**

### **MAPS ILLUSTRATING THE PROPOSED PROJECT AREA**







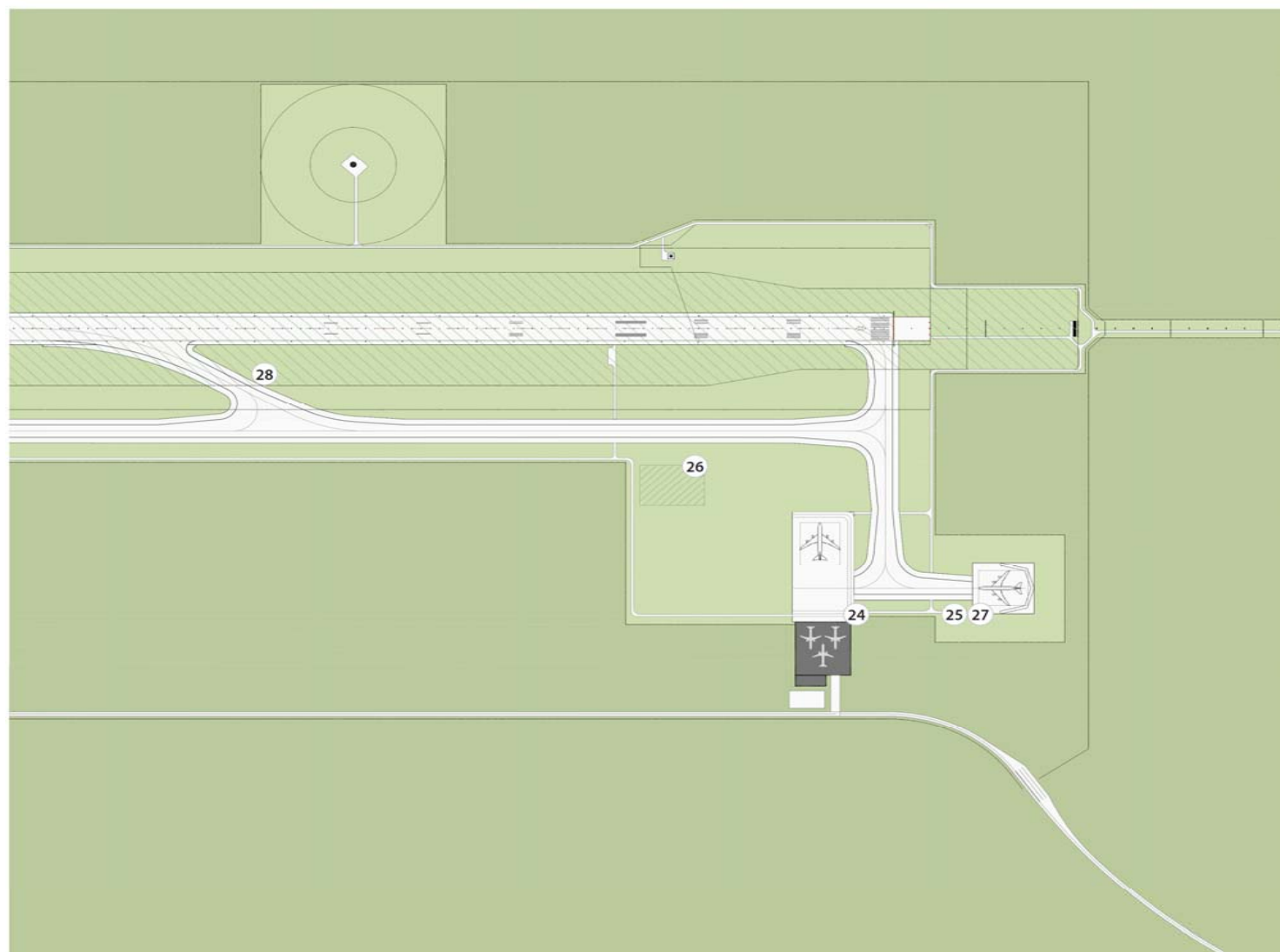


## **APPENDIX 3**

### **AIRPORT DESIGN IMAGES**



**Phase 1: 2025**

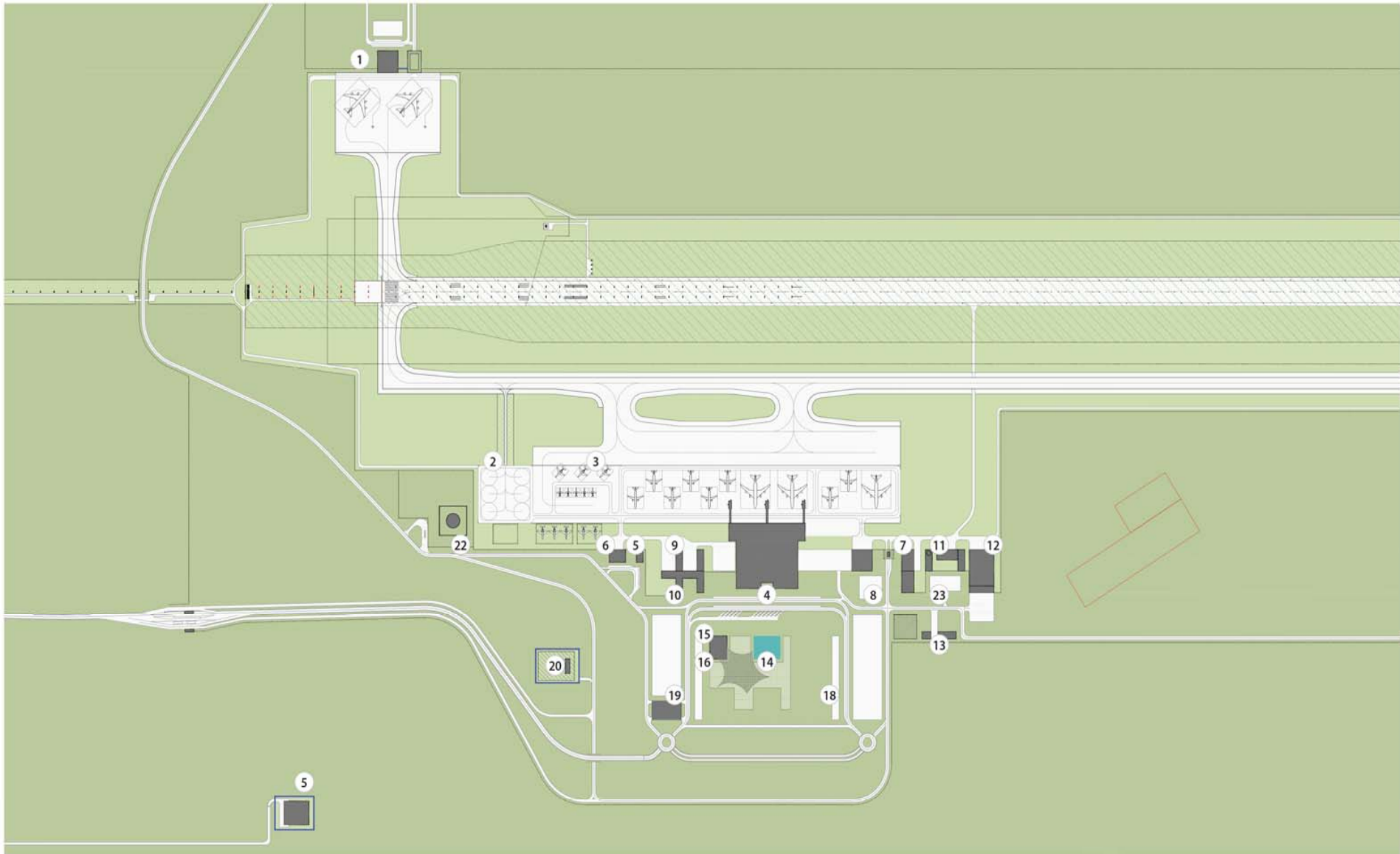


**2.2 PHASE 1**

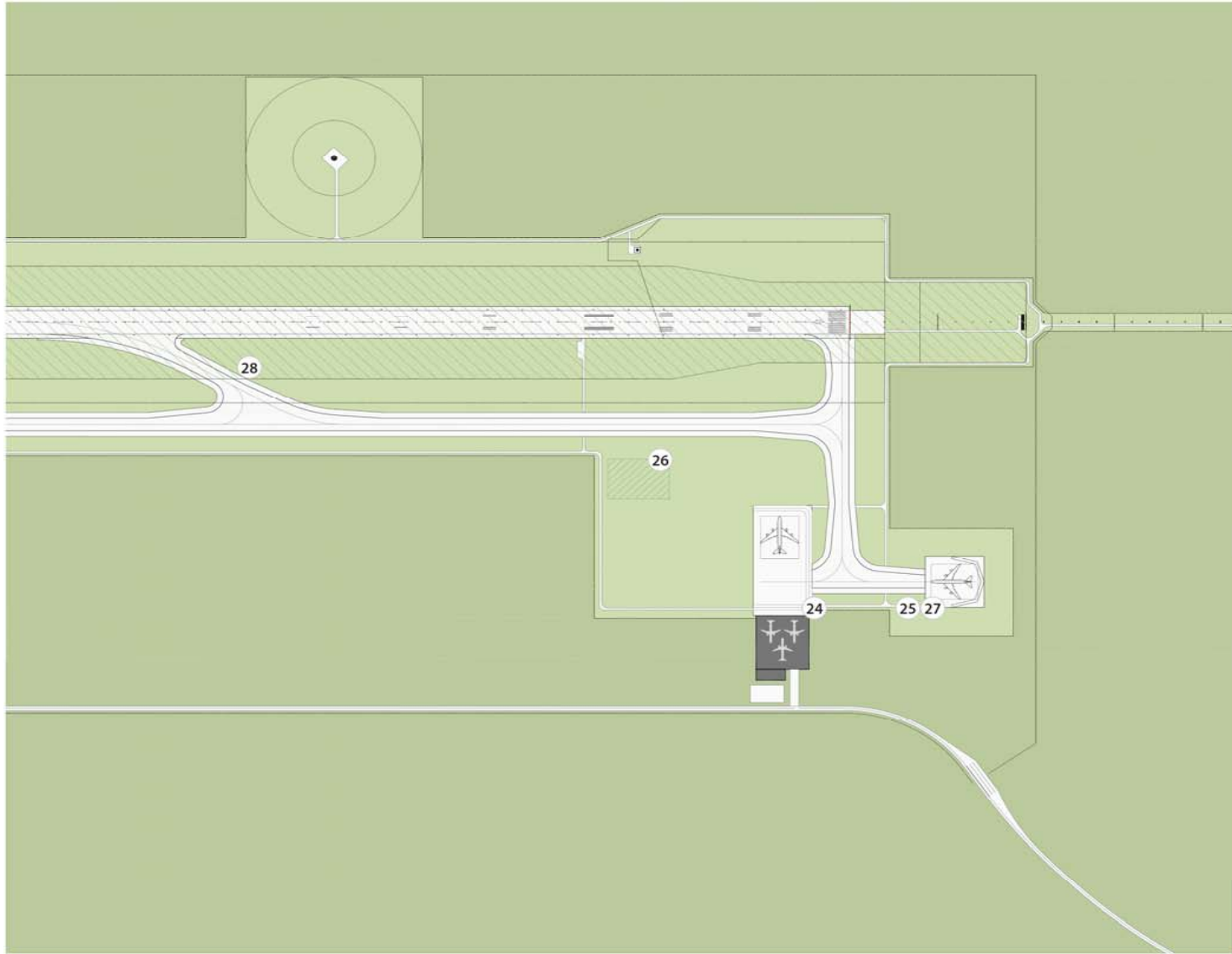
Design Year	2025
MAP	1,77
DPH	856 PAX
Annual MVTs (excl. GA)	27.951 mvt's
Annual Cargo (incl. Mail)	13.803 t

**Legend**

1. Presidential Terminal
2. Heliports
3. GA Apron
4. Passenger Terminal
5. Substation
6. GA Terminal
7. Police building / Anti-Terrorist Squad
8. Catering
9. GSE / Airport Maintenance – Garage
10. GSE / Airport Maintenance – Station
11. ARFF building
12. Cargo terminal & Forwarders
13. Solid waste
14. Water retention pool
15. Airport administration
16. Office building
17. Hotel
18. Landside development
19. Gas station
20. Waste water treatment
21. Airport access checkpoint
22. Fuel farm
23. ATC Tower
24. Aircraft maintenance hangar
25. Engine run up area
26. RFFS Training area
27. Isolated aircraft position
28. RET - Rapid Exit Taxiway

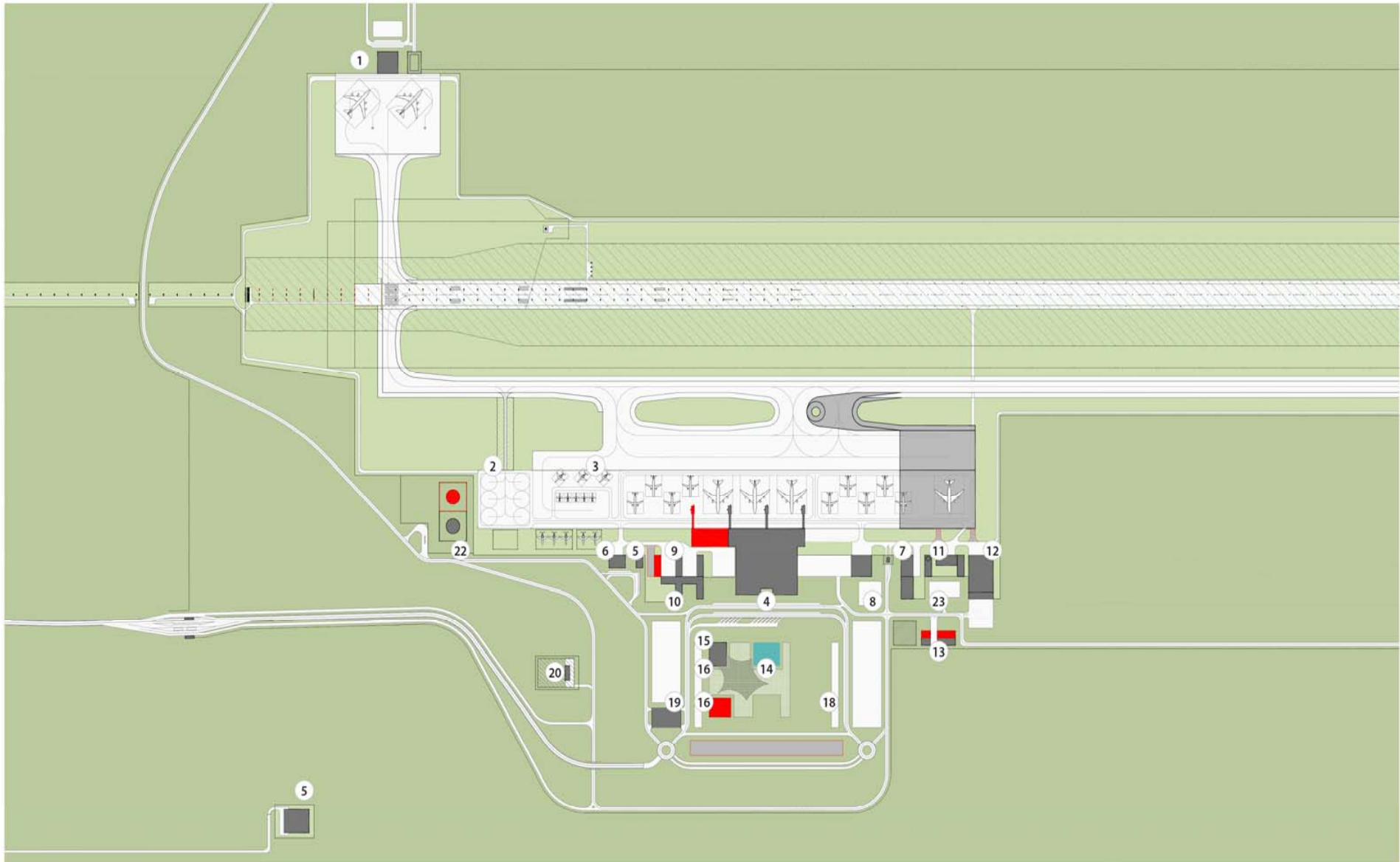


**Phase 2: 2030**

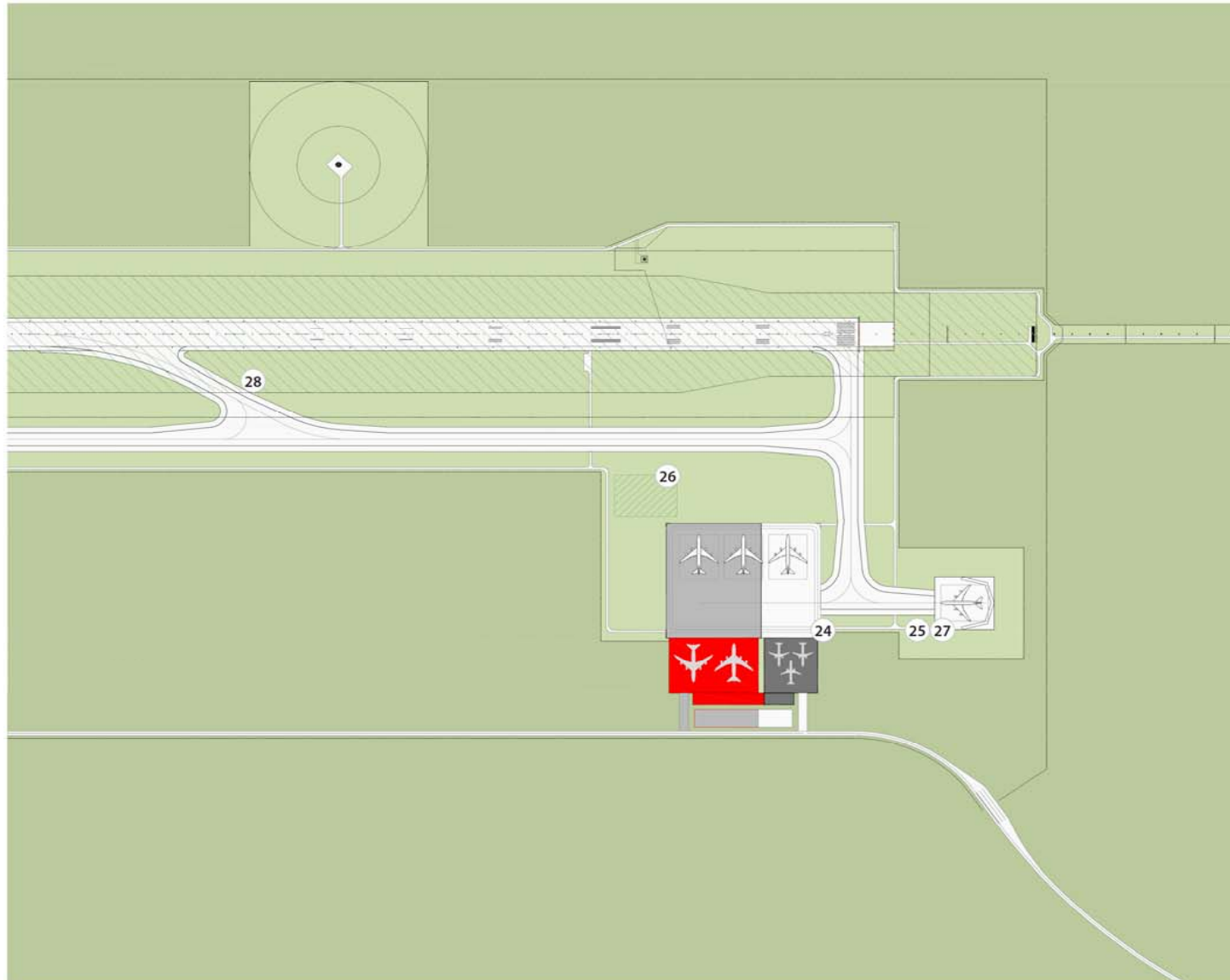


2.3 PHASE 2	
Design Year	2030
MAP	2,52
DPH	1.157 PAX
Annual MVTs (excl. GA)	34.257 mvt's
Annual Cargo (incl. Mail)	19.542 t

- Legend**
1. Presidential Terminal
  2. Heliports
  3. GA Apron
  4. Passenger Terminal
  5. Substation
  6. GA Terminal
  7. Police building / Anti-Terrorist Squad
  8. Catering
  9. GSE / Airport Maintenance – Garage
  10. GSE / Airport Maintenance – Station
  11. ARFF building
  12. Cargo terminal & Forwarders
  13. Solid waste
  14. Water retention pool
  15. Airport administration
  16. Office building
  17. Hotel
  18. Landside development
  19. Gas station
  20. Waste water treatment
  21. Airport access checkpoint
  22. Fuel farm
  23. ATC Tower
  24. Aircraft maintenance hangar
  25. Engine run up area
  26. RFFS Training area
  27. Isolated aircraft position
  28. RET - Rapid Exit Taxiway



**Phase 3: 2035**



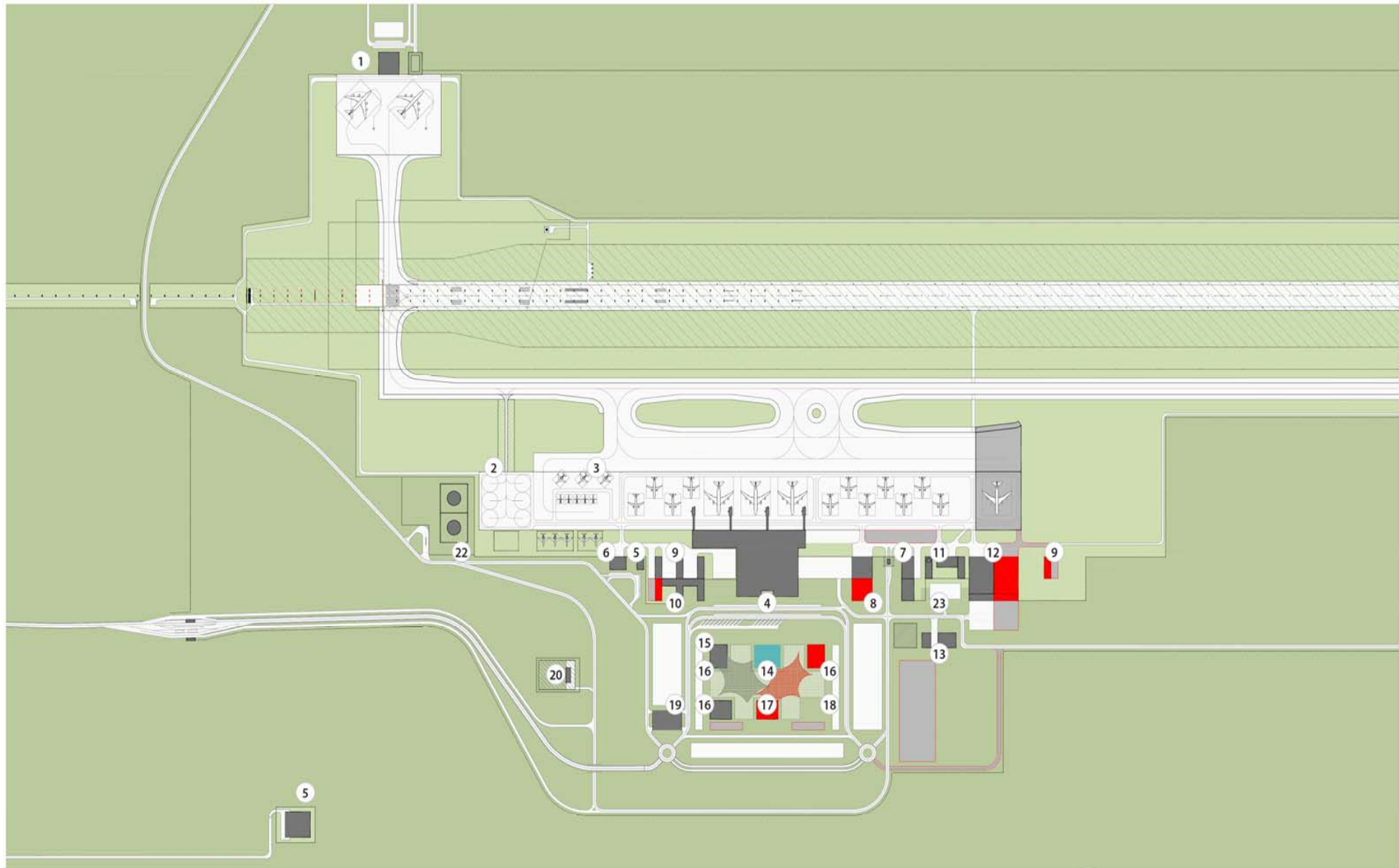
**2.4 PHASE 3**

Design Year	2035
MAP	3.42
DPH	1,490 PAX
Annual MVTs (excl. GA)	41,733 mvt's
Annual Cargo (incl. Mail)	27,626 t

**Legend**

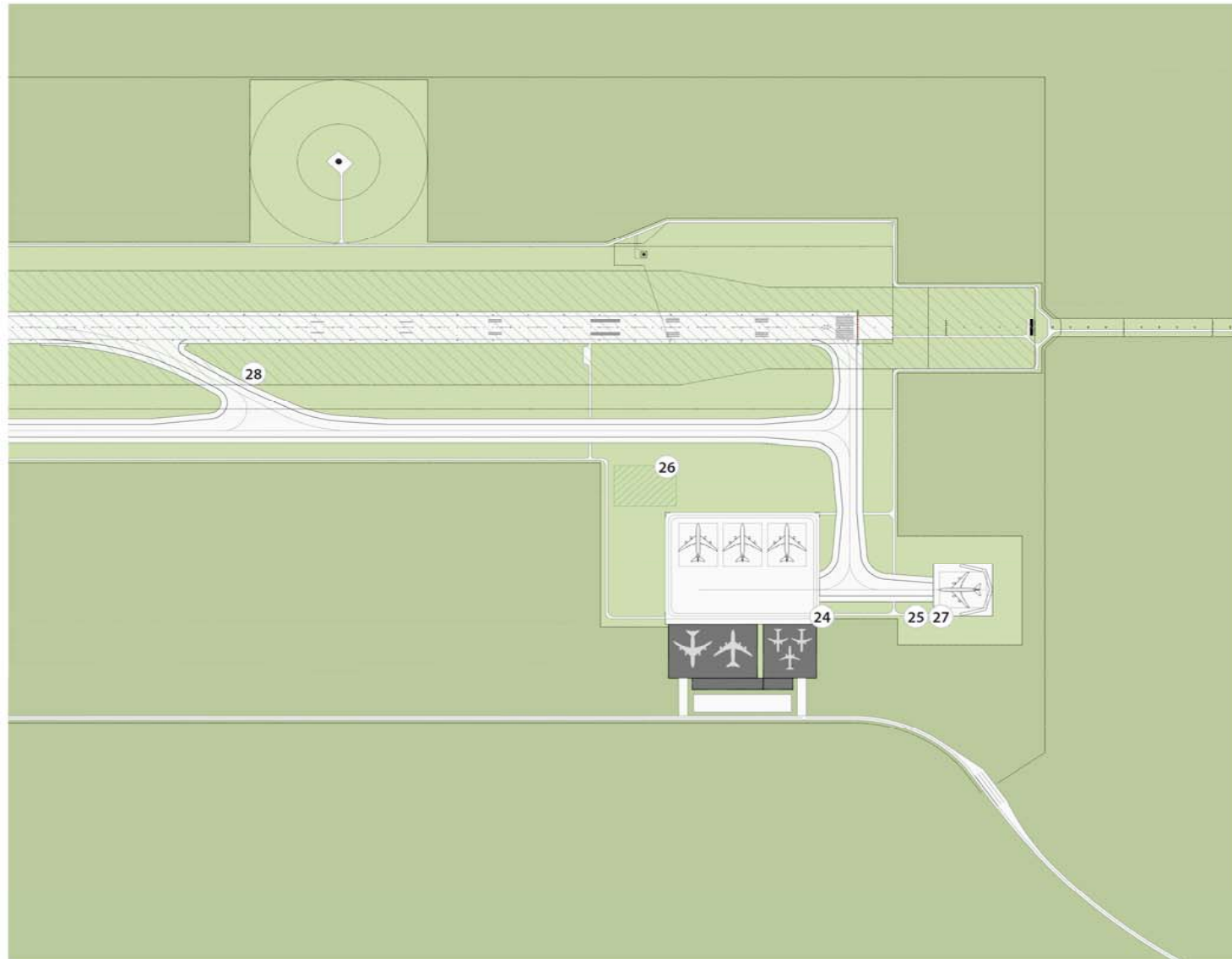
1. Presidential Terminal
2. Heliports
3. GA Apron
4. Passenger Terminal
5. Substation
6. GA Terminal
7. Police building / Anti-Terrorist Squad
8. Catering
9. GSE / Airport Maintenance – Garage
10. GSE / Airport Maintenance – Station
11. ARFF building
12. Cargo terminal & Forwarders
13. Solid waste
14. Water retention pool
15. Airport administration
16. Office building
17. Hotel
18. Landside development
19. Gas station
20. Waste water treatment
21. Airport access checkpoint
22. Fuel farm
23. ATC Tower
24. Aircraft maintenance hangar
25. Engine run up area
26. RFFS Training area
27. Isolated aircraft position
28. RET - Rapid Exit Taxiway







**Phase 4: 2040**

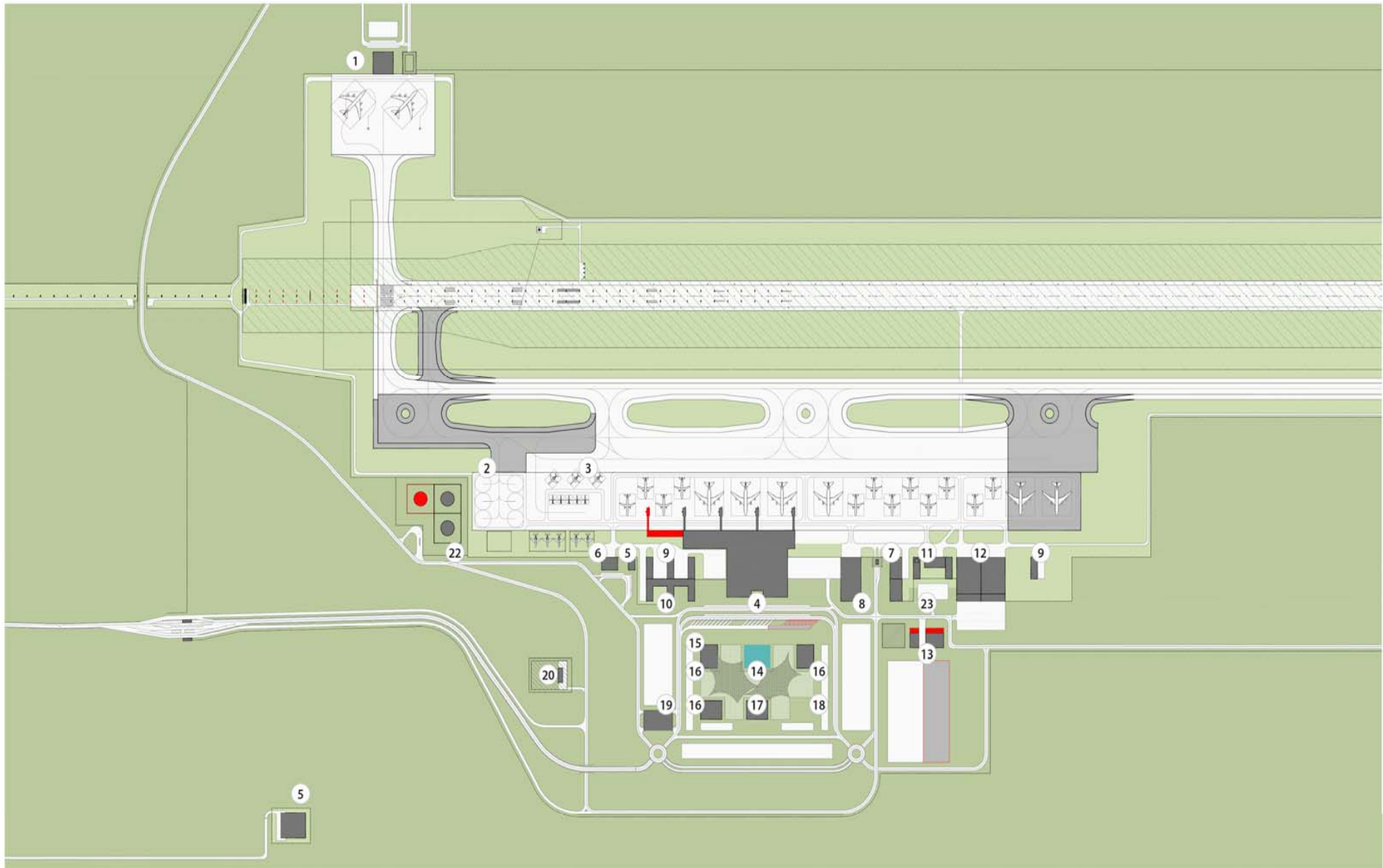


**2.5 PHASE 4**

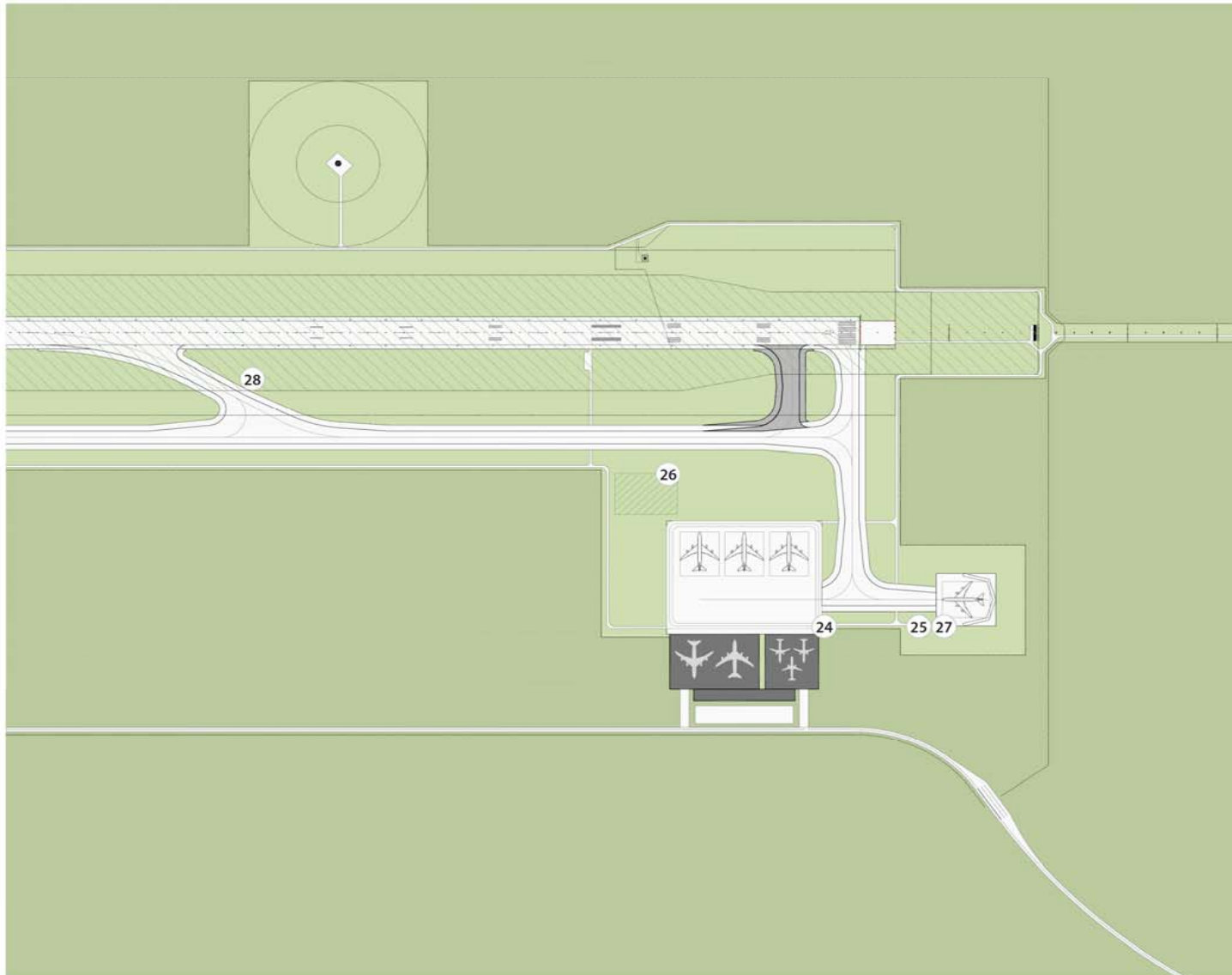
Design Year	2040
MAP	4,48
DPH	1.859 PAX
Annual MVTs (excl. GA)	50.066 mvt's
Annual Cargo (incl. Mail)	39.434 t

**Legend**

1. Presidential Terminal
2. Heliports
3. GA Apron
4. Passenger Terminal
5. Substation
6. GA Terminal
7. Police building / Anti-Terrorist Squad
8. Catering
9. GSE / Airport Maintenance – Garage
10. GSE / Airport Maintenance – Station
11. ARFF building
12. Cargo terminal & Forwarders
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19. Gas station
20. Waste water treatment
21. Airport access checkpoint
22. Fuel farm
23. ATC Tower
24. Aircraft maintenance hangar
25. Engine run up area
26. RFFS Training area
27. Isolated aircraft position
28. RET - Rapid Exit Taxiway



**Phase 5: 2045**

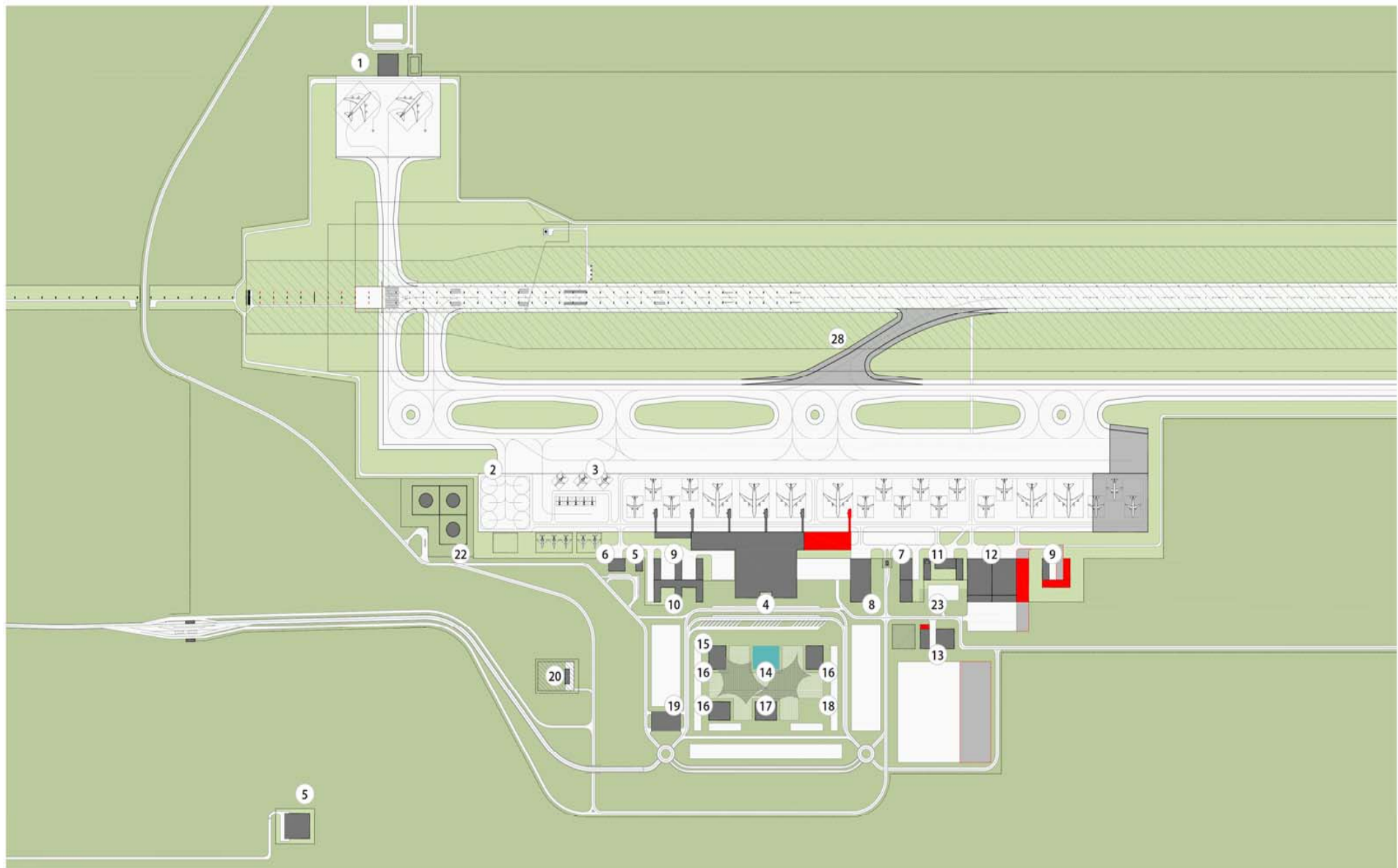


**2.6 PHASE 5**

Design Year	2045
MAP	5,72
DPH	2,253 PAX
Annual MVTs (excl. GA)	58,386 mvt's
Annual Cargo (incl. Mail)	56,416 t

**Legend**

1. Presidential Terminal
2. Heliports
3. GA Apron
4. Passenger Terminal
5. Substation
6. GA Terminal
7. Police building / Anti-Terrorist Squad
8. Catering
9. GSE / Airport Maintenance – Garage
10. GSE / Airport Maintenance – Station
11. ARFF building
12. Cargo terminal & Forwarders
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14. Water retention pool
15. Airport administration
16. Office building
17. Hotel
18. Landside development
19. Gas station
20. Waste water treatment
21. Airport access checkpoint
22. Fuel farm
23. ATC Tower
24. Aircraft maintenance hangar
25. Engine run up area
26. RFFS Training area
27. Isolated aircraft position
28. RET - Rapid Exit Taxiway





**Masterplan Development 3-D Model: Phase 5**

