



ENVIRONMENTAL SPECIFICATION

Scope of Works for ACSA CTIA New Re-aligned Runway and Associated Infrastructure

1. Background

The re-alignment of the runway at Cape Town International Airport (CTIA) triggers a listed activity in terms of the National Environmental Management Act (NEMA) regulations. ACSA undertook a protracted Environmental Impact Assessment (EIA) and Water Use License application process over more than 5 years to secure the necessary rights for this development.

EIA approval was granted on the 23rd of May 2017 and is valid for 10 years. The EIA study culminated in an extensive list of conditions for approval, which ACSA must implement to mitigate identified environmental risks. These conditions are consolidated in an approved Environmental Management Programme (EMP) attached as Appendix A. Bidders must consult this document for further clarity on scope, costing and implementation requirements. (Important to note, the EMP includes monitoring and validation criteria which enables ACSA to demonstrate compliance to the authorities. Bidders will need to be able to share proof that conditions of EIA approval have been met. For more information consult Appendix A.)

The EMP mitigation measures are listed for the various life-cycle phases of the re-aligned runway development. For the purposes of this specification, these include:

- Design Phase: detailed layout, planning and design.
- Construction Phase: site preparation and construction.
- Monitoring Phase: environmental monitoring requirements during the construction and operations phases.

This Environmental Specification translates the approved conditions included in the EMP, which prospective bidders will need to cost and implement for their submissions.

2. Design Phase

Project risk mitigation during the design phase includes the following:

2.1 Permits, Licenses, Authorisations:

The contractor will need to apply for and secure any outstanding authorisations. A review will need to be undertaken by a suitably qualified Environmental Assessment Practitioner (EAP). These include but are not limited to water use licenses (freshwater

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specialists), heritage permits (heritage specialists), disturbance, removal, translocation of protected plant and animal species (terrestrial ecologist).

2.2 Environmental Control Officer (ECO):

A suitably qualified and experienced ECO must be appointed to oversee the implementation of, and compliance to the approved EMP. The appointment needs to be made prior to the commencement of construction. The ECO will be required to review and approve contractor method statements, monitor compliance with the EMP by the main contractor, as well as any sub-contractors, and specialist contractors. Compliance inspections will need to be undertaken at least monthly. The ECO will identify areas of non-compliance and recommend corrective actions (measures) to rectify them in consultation with ACSA and the various contractors as required, and ensure follow-up and resolution of all non-compliances. The ECO will provide feedback for continual improvement in environmental performance; respond to changes in project implementation or unanticipated site activities which are not addressed in the EMP, and which could potentially have environmental impacts, and advise ACSA, the engineering team and contractor as required. The ECO will undertake a site closure inspection on completion of the project. The ECO will be expected to attend project meetings to report on and receive information that may have a bearing on emerging environmental risks.

2.3 Freshwater Ecologist:

Since wetlands will be lost, a wetland offset needs to be agreed, formalised, and implemented in agreement with the authorities (Department of Water and Sanitation). Any permits / licenses and authorisations triggered by this offset will also need to be included for costing for implementation.

2.4 Design Engineers:

2.4.1 Water Management:

Engineers need to incorporate and consider groundwater and stormwater requirements in their design. This includes ensuring that the runway and taxiways are elevated above the expected groundwater level, providing for sub-surface drainage and stormwater removal systems at edges of impermeable surfaces where impermeable geological layers are shallow, integrating the new stormwater system into the airport's existing stormwater systems and amending the existing stormwater management plan, ensuring that the stormwater system design allows for adequate stormwater retention on site, in line with CoCT restrictions for stormwater discharged from the site, and minimising paved and sealed surfaces to reduce stormwater runoff.

2.4.2 Fauna Management:

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Design engineers need to allow for the installation of mole proof fencing around the site, as well as a fence around the airport boundary to prevent the movement of fauna onto the site. Current mole barriers include a 1 meter subsurface barrier, and a sloped cap to encourage exit and discourage entry on to the airfield.

2.4.3 Air Emissions:

In order to limit air emissions on the airside, design engineers need to investigate limiting power and air for aircraft on aprons provided by Ground Power Units / Auxillary Power Units (APU), and instead consider providing utility supplied electricity.

In addition, the investigation needs to consider the utilisation of APUs for no more 5 minutes whilst on stand, as well as on arrival and departure. Alternatively, pilots should not be allowed to start the on-board APU while taxiing to the gate but only when the aircraft reaches the gate.

The air emissions benefits need to be assessed, and if feasible, and agreed by industry, implemented. Evidence needs to be provided to support decision making and submitted to the competent authority.

2.4.4 Visual Aspects:

Design engineers are to specify for limiting lighting to essential activities and facilities as far as possible. Any security lighting must be directed inwards and downwards towards activities and facilities to avoid light spillage. External lights on buildings and similar infrastructure should be fitted with reflectors ("full cut-off" luminaires) to direct illumination downward and inward to the specific illuminated areas.

Specifications must also be included for all project components to be painted with non-reflective paints, varnishes etc. for surface treatments.

2.4.5 Economic Development:

Tender preparation must prioritise the employment of local people as far as possible, and where applicable, all local construction employees are to receive job-specific training, as required. This may be formal on-the-job mentoring / training.

2.5 Botanical and Faunal Specialist / Ecologist:



During the design phase and before construction can start, a suitably qualified specialist is required to oversee the search, rescue and relocation operation for indigenous faunal and floral species, species of conservation concern, and protected species to a suitable location, agreement to be obtained from the landowner. They must also account for (floral) species that only emerge during specific seasons, to avoid missing them altogether. The specialist will need to apply for and secure the necessary permits prior to undertaking search, rescue and relocation.

2.6 Air Quality Dispersion Modelling Specialist:

A suitable specialist must develop and implement an Air Quality Monitoring Plan, which should include a grievance mechanism and corrective actions (see Section 4 covering *Monitoring Phase*).

2.7 Noise Management:

A noise management specialist must i) develop and implement a construction noise monitoring plan in consultation with the appropriate authorities, which should include a grievance mechanism and corrective actions (see Section 4 covering *Monitoring Phase*); ii) finalise the locations of the noise monitoring points once the construction plan and schedule are determined. The monitoring points should be located close to the construction site access point and the nearest affected community.

The noise specialist must assess proposed flight track routings in collaboration with the flight track designers (ATNS) to identify and model noise preferential routings and abatement measures, thereby assisting aircraft in avoiding noise sensitive areas on departure and arrival.

2.8 Community Liaison Specialist:

A community liaison specialist will be required to:

- Communicate the construction schedule to residents (through ward councillors) and schools located in closest proximity to the site. Specifically notify the Delft South schools located close to the site boundary.
- Maintain ongoing communication with appropriate business forums to optimise opportunities for local businesses to participate in and benefit from the Project.

2.9 Heritage Specialist:

A heritage specialist must be appointed to record details of any structures identified on site, such as floor plans, elevations, etc... in writing and photographically for submission to Heritage Western Cape (HWC). The specialist will also need to make application to HWC for a permit to destroy any structures older than 60 years old.



3. Construction Phase

The construction phase risks, and mitigation measures are listed under Chapter 3, page 14 of the approved Environmental Management Programme (EMP) attached as Appendix A. The contractor will need to scope, cost and implement all environmental management and mitigation measures.

These relate to *inter alia*: environmental documentation, site camp and site establishment, dealing with complaints, vegetation clearing, fauna management, handling of construction materials, water management, protection of archaeological and paleontological resources, waste management, concrete / cement works, hazardous materials, fuel storage and dispensing, noise management, dust and air quality management, traffic management, visual aspects, fire control, ablution facilities, environmental training, response to environmental pollution, closure and rehabilitation.

4. Monitoring Phase

The EIA requires monitoring of environmental variables during both the construction and operations phase to ensure compliance, and to provide assurance to both ACSA, the authorities and stakeholders. Bidders will need to include monitoring requirements for both construction and operations phases.

4.1 Construction Phase:

4.1.1 Air Quality Monitoring:

- Install seven dust monitoring points (to be determined in consultation with the relevant authorities), including a permanent air quality monitoring station (MP 01), as indicated in *Dust Monitoring Points* diagram below.
- Operate the monitoring stations in an accredited manner adhering to recognised quality assurance methods and run by a competent entity.
- Undertake dust deposition and PM10 monitoring in accordance with the National Dust Control Regulations.
- Set performance targets:
 - Maximum total daily dust outfall (calculated from the monthly dust fallout) of less than 600 mg/m² /day for residential areas;
 - Maximum annual average dust fallout of less than 1,200 mg/m² /day within the airport site.

- Submit quarterly report to the CoCT Air Quality Management Unit and the South African Air Quality Information System unless results indicate dust levels exceeding the performance targets for residential areas, in which case this should be reported immediately and appropriate mitigation measures identified. Data must be made available in the event of public complaints or to DEA&DP if requested.

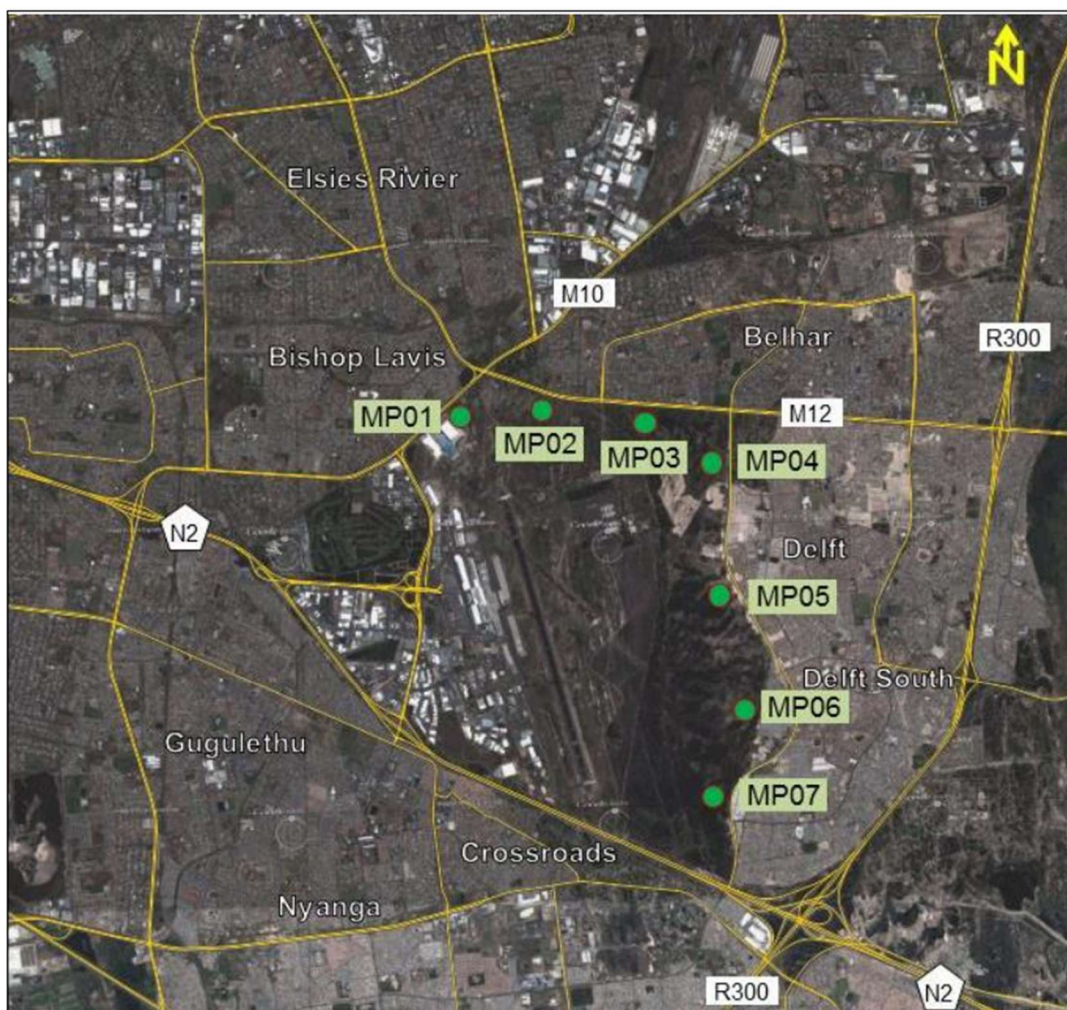


Figure: Dust Monitoring Points

4.1.2 Noise Monitoring:

- Install three noise monitoring points, located inside the airport boundary at the locations in the region of the points indicated in the diagram *Noise Monitoring Points* below.

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- Undertake noise monitoring using methods in accordance with the SANS 10103:2008 Code of Practice and the Western Cape Noise Control Regulations (quarterly during construction, monthly during night construction).
- Submit quarterly reports to the local authorities providing construction specific noise levels compared to baseline noise levels and SANS District Guidelines.
- In the event of noise guideline exceedances, implement appropriate site and operation specific noise mitigation measures.

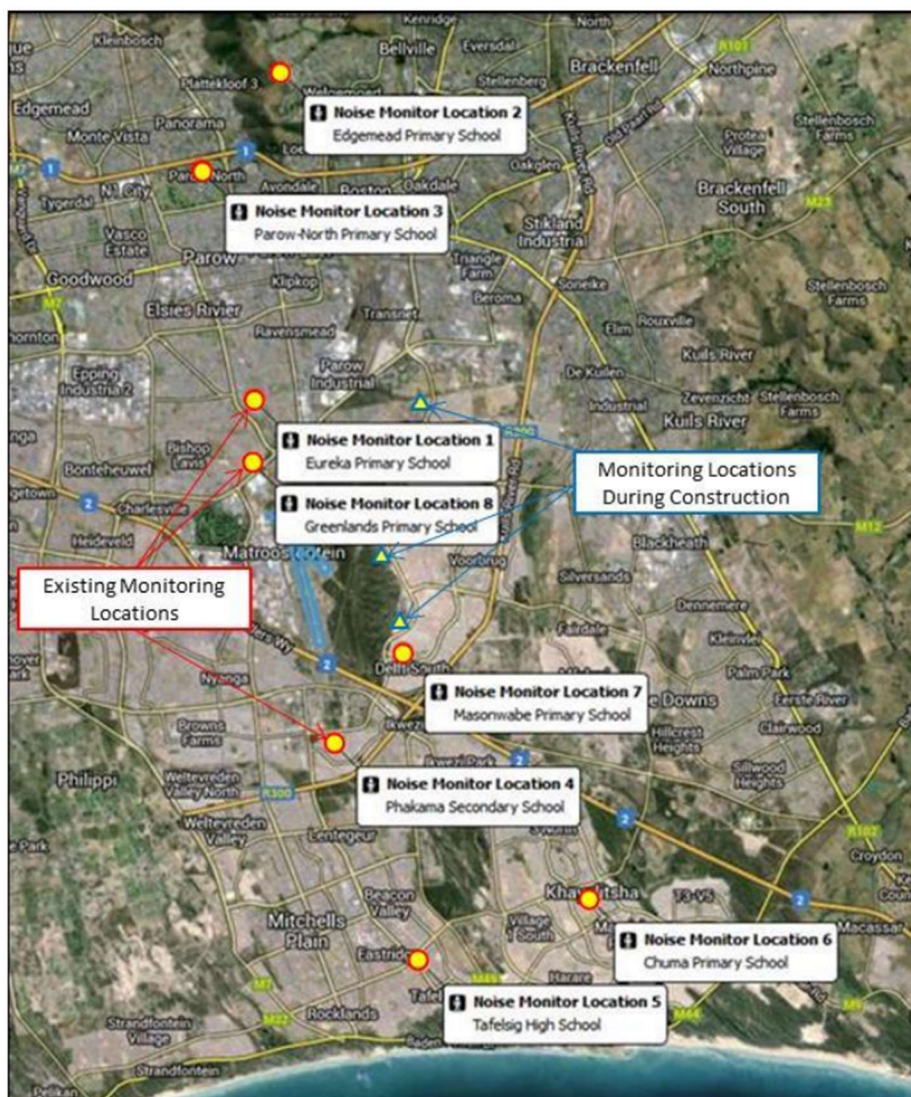


Figure: Noise Monitoring Points

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4.2 Operations Phase:

4.2.1 Air Quality Monitoring:

- Bidders will need to price, spec, design, implement, commission and then hand over a continuous air quality monitoring station to ACSA. This station must conduct continuous monitoring of SO₂, NO₂, O₃, CO and PM₁₀ at the airport site at MP01.
- Submit quarterly reports to the local authorities and South African Air Quality Information Systems quarterly.

4.2.2 Noise Monitoring:

- Monitor noise at the eight monitoring locations around the airport until commencement of the operation of Runway 18-36.
- Where necessary, relocate existing noise monitors to cover newly affected areas due to changes in flight paths.
- Submit quarterly noise monitoring reports to the local authorities including:
 - 24-hour equivalent continuous A-weighted sound pressure level, LAeq,T;
 - Equivalent continuous day-night rating level, LRdn;
 - Equivalent continuous day and night rating levels, LRd and LRn;
 - Maximum A-weighted level, LAmax;
 - Percentile levels Ln;
 - Number of noise events above 70 dB(A) and 60 dB(A) of the LAmax and SEL;
 - Report aircraft related infringements and record aircraft type and operator;
 - Noise complaints received and responses; and
 - Records of aircraft movements, aircraft types, cargo movements, new routes scheduled, runway split of aircraft movement, day/night ratio of movements and average hourly movements.

5. Water Use License

The project triggers a water use activity in terms of the National Water Act. ACSA had applied for a water use license, which was subsequently issued, however given the delays in implementing the new realigned runway project, this license has expired. Bidders will need to reapply for a new water use license (see above Design Phase, 2.1 *Permits, Licenses, Authorisations*).

Water Use Licenses typically include a series of conditions of approval which bidders must consider for scoping, costing and implementation during the design, construction and

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operational phases of the New Realigned Runway project. In the absence of an approved WUL, the bidder will need to first secure a new WUL before scoping and costing for the conditions that will impact on the design, construction and operational phases of this project.

For *guidance* on costing and design, the following conditions were included in the expired WUL (this should not be relied on for final costing):

1	Conduct an annual internal audit on compliance with the conditions of the WUL. This shall be submitted to the Provincial Head or Responsible Authority within one month of the finalization of the audit.
2	Conduct an independent external annual audit on compliance with the conditions of the WUL.
3	Notices prohibiting unauthorized persons from entering water use premises must be displayed.
4	The conditions of the WUL must be brought to the attention of all persons (employees, sub-consultants, contractors etc.) associated with the undertaking of activities and the Licensee must take such measures that are necessary to bind such persons to the conditions of WUL.
5	A copy of the water use licence and supporting reports must be on site at all times during construction.
6	A suitably qualified person/s, appointed by the Licensee must be responsible for ensuring that the activities are undertaken in compliance with the specifications as set out in reports submitted to the Department or the Provincial Head or Responsible Authority and the conditions of the WUL.
7	No site activities may occur beyond the proposed site location.
8	Stormwater Management: Increased runoff due to vegetation clearance and/or soil compaction must be managed, and steps must be taken to ensure that storm water does not lead to excessive levels of silt entering the watercourse(s).
9	Stormwater Management: Minimise paved and sealed surfaces.
10	Stormwater Management: Storm water leaving the premises must in no way be contaminated by any substance, whether such substance is a solid, liquid, vapour or gas or a combination thereof which is produced, used, stored, dumped or spilled on the premises.
11	Stormwater Management: Drainage next to the construction works must be diverted away from the watercourse(s) to ensure that any contaminated runoff does not flow directly into the watercourse(s) as a stormwater discharge.

12	Stormwater Management: Appropriate measures must be implemented to avoid or minimise damming or ponding of water, as well as soil erosion and scouring as a result of increased and concentrated storm water runoff.
13	Structures, Construction Plant and Materials: Necessary erosion prevention measures must be employed to ensure the sustainability of all structures.
14	Structures, Construction Plant and Materials: The height, width and length of structures must be limited to the minimum dimension necessary to accomplish the intended function.
15	Structures, Construction Plant and Materials: During construction erosion berms should be installed to prevent gully formation, according to the slope.
16	Structures, Construction Plant and Materials: During the construction phase no vehicles must be allowed to indiscriminately drive through any wetland areas.
17	Structures, Construction Plant and Materials: Chemical storage areas and toilet facilities must be located outside the extent of the watercourse(s).
18	Structures, Construction Plant and Materials: Operation and storage of equipment must not take place within the extent of the watercourse(s) unless authorised by the WUL.
19	Structures, Construction Plant and Materials: Fences within the surrounding areas particularly adjacent to open space areas must be permeable to fauna and flora.
20	Structures, Construction Plant and Materials: All areas affected by construction must be rehabilitated upon completion of the construction phase of the development. Areas must be reseeded with indigenous vegetation species as required, and the use of seed nets is recommended to prevent erosion.
21	Water Quality: Under no circumstances is any solid waste to be burned or buried on or in the vicinity of the site.
22	Water Quality: During the construction and operation phase erosion and siltation measures must be implemented e.g. the use of temporary silt traps downstream of construction areas must be implemented.
23	Water Quality: Where possible, silt fences/barriers or other relevant measures must be installed along the edge of streams and wetlands to prevent soil erosion and ingress of runoff water carrying silt from the catchment of the wetlands (i.e. the slopes surrounding the wetland) to enter the water body.

24	Water Quality: Vehicles and other machinery must be serviced well above the extent of the watercourse(s). Oils and other potential pollutants must be disposed off at an appropriate licensed site, with the necessary agreement from the owner of such a site.
25	Water Quality: Any hazardous substances must be handled according to the relevant legislation relating to transport, storage and use of the substance.
26	Water Quality: All reagent storage tanks and reaction units must be supplied with a bunded area built to the capacity of the facility and provided with sumps and pumps return the spilled material back into the system. The system must be maintained in a state of good repair and standby pumps must be provided.
27	Water Quality: The Licensee must ensure that all waste/wastewater generated from the operations will be handled and disposed using an authorised facility.
28	Riparian and instream habitat: Habitat destruction must be limited to what is absolutely necessary for the construction of the Stormwater channel.
29	Riparian and instream habitat: Existing vegetation composition must be maintained or improved by maintaining the natural variability in flow fluctuations. Rehabilitated areas must have vegetation basal cover of at least 15% at all times.
30	Biota: Species such as tortoises, burrowing reptiles and mammals, that will suffer direct mortality must be removed and relocated.
31	Rehabilitation & Management: All disturbed areas must be re-vegetated with an indigenous seed mix in consultation with an indigenous plant expert, ensuring that during rehabilitation only indigenous shrubs, trees and grasses are used in restoring the biodiversity.
32	Rehabilitation & Management: Rehabilitation of disturbed regulated areas must occur during and after completion of construction. Any material removed from the extent of the watercourses(s) must be returned and bedded in their original position as far as practicably possible
33	Rehabilitation & Management: Topsoil must be stripped and redistributed.
34	Rehabilitation & Management: Stockpiles and overburden must be removed or rehabilitated after construction.
35	Rehabilitation & Management: Compacted and disturbed areas must be shaped to natural forms and to follow the original contour. In general cut and fill slopes and other disturbed areas must not exceed 1:3 (v:h) ratio, it must be protected, vegetated, ripped and scarified parallel with the contour.
36	Rehabilitation & Management: A botanist familiar with the vegetation of the area must monitor the rehabilitation success and alien plant removal on annual basis.

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37	Rehabilitation & Management: A comprehensive and appropriate rehabilitation and management programme to restore the watercourse(s) to environmentally acceptable and sustainable conditions after construction must be developed and submitted to the Provincial Head or Responsible Authority for written approval before construction commences.
38	Monitoring & Reporting: The Provincial Head or Responsible Authority must be notified in writing one week prior to commencement of the licenced activity(ies) and again upon completion of the activity(ies).
39	Pollution prevention, incidents and malfunctions: The possibility of spillages must be catered for in the design of the infrastructure where for example, attenuation ponds prior to the discharge of storm water could be employed or the storm water systems themselves could be designed in such a way that it can be easily sealed off after the occurrence of a spill.
40	Special Conditions: All of the WUL conditions must be implemented and overseen by an Environmental Control Officer.

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Appendix A:

Cape Town International Airport Runway Re-alignment and Associated Infrastructure Environmental Management Programme

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Cape Town International Airport Runway Re-alignment and Associated Infrastructure Environmental Management Programme

Report Prepared for

Airports Company South Africa



SRK Report Number 445354/05

DEA Reference Number: 14/12/16/3/3/2/446

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June 2017

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Note:

The EMP was amended in terms of Item 12 of the Conditions of Authorisation following the issuing of the Environmental Authorisation (EA) and submitted to the Department of Environmental Affairs for approval.

All changes in this EMP are underlined **and** italicised for ease of reference.

Profile and Expertise of EAPs

SRK Consulting (South Africa) (Pty) Ltd (SRK) has been appointed by Airports Company South Africa to undertake the Environmental Impact Assessment (EIA) process required in terms of the National Environmental Management Act 107 of 1998 (NEMA).

SRK Consulting comprises over 1 400 professional staff worldwide, offering expertise in a wide range of environmental and engineering disciplines. SRK's Cape Town environmental department has a distinguished track record of managing large environmental and engineering projects, extending back to 1979. SRK has rigorous quality assurance standards and is ISO 9001 accredited.

As required by NEMA, the qualifications and experience of the key individual practitioners responsible for this project are detailed below.

Project Director and Reviewer: Christopher Dalglish, BBusSc (Hons); MPhil (EnvSci)

Certified with the Interim Board for Environmental Assessment Practitioners South Africa (CEAPSA)

Chris Dalglish is a Partner at SRK and the Head of the Environmental Department in Cape Town. He has over 23 years of experience as an environmental consultant working on a broad range of EIA, auditing, environmental planning and management, stakeholder engagement and environmental management system projects. Chris's experience includes managing and co-ordinating major EIAs throughout Southern Africa and South America in the mining, energy, land-use planning and development, water and waste management, and industrial sectors.

Project Manager: Sharon Jones, BSc Hons (Env. Sci); MPhil (EnviroMan)

Certified with the Interim Board for Environmental Assessment Practitioners South Africa (CEAPSA)

Sharon Jones is a Principal Environmental Consultant with over 19 years of experience, primarily in South Africa, Southern Africa (Mozambique, Angola and Namibia) and South America (Suriname). Sharon has managed EIAs across a number of sectors, provided input into due diligence studies, compiled numerous construction and operational phase EMPs for a range of projects, and has audited compliance with EMPs on a number of sites. She is also involved with the development of Environmental Management Frameworks. Sharon is a registered Professional Natural Scientist (Environmental Science) with SACNASP and a Certified Environmental Practitioner of South Africa (CEAPSA).

Statement of SRK Independence

Neither SRK nor any of the authors of this Report have any material present or contingent interest in the outcome of this Report, nor do they have any pecuniary or other interest that could be reasonably regarded as being capable of affecting their independence or that of SRK.

SRK has no beneficial interest in the outcome of the assessment which is capable of affecting its independence.

Disclaimer

The opinions expressed in this report have been based on the information supplied to SRK by Airports Company South Africa and specialists appointed by SRK. SRK has exercised all due care in reviewing the supplied information, but conclusions from the review are reliant on the accuracy and completeness of the supplied data. SRK does not accept responsibility for any errors or omissions in the supplied information and does not accept any consequential liability arising from commercial decisions or actions resulting from them. Opinions presented in this report apply to the site conditions and features as they existed at the time of SRK's investigations, and those reasonably foreseeable. These opinions do not necessarily apply to conditions and features that may arise after the date of this Report, about which SRK had no prior knowledge nor had the opportunity to evaluate.

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Acronyms and Abbreviations

ATNS	Air Traffic Navigation Services
CoCT	City of Cape Town
DEA	Department of Environmental Affairs
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMP	Environmental Management Programme
GN	Government Notice
NADP	Noise Abatement Departure Procedure
NEMA	National Environmental Management Act 107 of 1998 as amended
RDL	Red data list
S&EIR	Scoping and Environmental Impact Reporting
SANDF	South African National Defence Force
SCC	Species of Conservation Concern
SRK	SRK Consulting (South Africa) (Pty) Ltd

Glossary

Activity	An activity or operation carried out as part of the construction or operation of the runway and associated infrastructure
Aspect	An action, event, product or service, occurring as a component or result of an activity, which interacts with the existing environment (or which results in impacts to it)
Contractor	Any company appointed by the Proponent to undertake construction or related activities on site, and will include the main Contractor, as well as any Sub-Contractors.
Construction Phase	The stage of project development comprising site preparation as well as all construction activities associated with the development.
Contaminated water	Water contaminated by activities on site, e.g. concrete water and run-off from plant / personnel wash areas.
Design Phase	The stage during which detailed layout and development plans are prepared, including the drafting of contract documents for construction.
Environment	The external circumstances, conditions and influences that surround and affect the existence and development of an individual, organism or group. These circumstances include biophysical, social, economic, historical and cultural aspects.
Environmental Authorisation	The authorisation by a competent authority of a listed activity or specified activity in terms of NEMA.
Environmental Impact Assessment	A process of evaluating the environmental and socio-economic consequences of a proposed course of action or project
Environmental Management Measures	Requirements or specifications for environmental management, as presented in the EMP, some of which are based on the mitigation measures identified in the EIA Report.
Hazardous substance	A substance (including materials and waste) that can have a deleterious (harmful) effect on the environment and those substances declared hazardous substances in terms of the Hazardous Substances Act 15 of 1973.
Impact	A change to the existing environment, either adverse or beneficial, that is directly or indirectly due to the development of the project and its associated activities.
Method Statement	A mandatory written submission by the Contractor to the ECO setting out the plant, materials, labour and method the Contractor proposes using to carry out an activity.
Mitigation Measures	Design or management measures that are intended to avoid and/or minimise or enhance an impact, depending on the desired effect. These measures are ideally incorporated into a design at an early stage
Operations Phase	The stage of the works following the Construction Phase, during which the development will function or be used as anticipated in the Environmental Authorisation.
Performance Indicator	A measurable indicator of the outcome of environmental management, used to assess the success with which mitigation measures have been implemented. Often captures the results of several different monitoring activities.

Phase	A defined period during the life of the runway re-alignment project, e.g. the <i>Construction</i> and <i>Operations</i> Phases.
Proponent	The person or organisation implementing the project – in this case Airports Company South Africa.
Resources	The personnel, financial, equipment and technical requirements necessary for the successful completion of mitigation measures and for monitoring activities.
Schedule	The schedule or deadline for completion of each mitigation measure, which are recorded to ensure that mitigation measures are implemented in good time and in the correct sequence.
Solid waste	All solid waste including construction debris, chemical waste, broken / redundant equipment, oil filters, wrapping materials, timber, tins and cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers).
Sub-Contractors	A Sub-Contractor is any individual or Contractor appointed by the main Contractor, to undertake a specific task on site.

1 Introduction

1.1 Background

Airports Company South Africa proposes to re-align the existing primary runway at Cape Town International Airport ("the airport"). SRK Consulting (South Africa) (Pty) Ltd (SRK) undertook the Scoping and Environmental Impact Reporting (S&EIR) process required in terms of the National Environmental Management Act 107 of 1998, as amended (NEMA), and the Environmental Impact Assessment (EIA) Regulations, 2010 (promulgated in terms of NEMA). The Environmental Impact Assessment (EIA) Report contains a detailed description of the Project and its impacts.

NEMA requires that an Environmental Management Programme (EMP) be submitted along with the EIA Report to demonstrate how environmental management and mitigation measures will be implemented. The mitigation measures, which were identified during the S&EIR process, apply to the following phases of the development process:

- **The Design Phase:** These measures relate to the detailed layout, planning and design of the re-aligned runway and associated infrastructure, and will largely be implemented by the planning and development team, prior to the commencement of any physical on site activities. These mitigation measures are presented in Section 2.
- **The Construction Phase:** These mitigation measures are applicable during site preparation and construction on the site of the proposed Project and must be implemented by the relevant contractors and sub-contractors. These mitigation measures are presented in Section 3.
- **The Operations Phase:** These mitigation measures are applicable during the long-term operation of the airport and must be implemented by the Airports Company South Africa. These mitigation measures are presented in Section 4.
- **The Decommissioning Phase:** As it is not expected that the re-aligned runway and associated infrastructure will be decommissioned in the foreseeable future, measures related to decommissioning and post-closure rehabilitation are not included in the EMP.

The management measures listed for the various phases are either:

- **Mitigation or optimisation measures** which must be implemented and are non-negotiable; or
- **Recommendations** to comply with best practice, with adoption dependent on the proponent's risk profile and commitment to adhere to best practice, and which must be shown to have been considered and sound reasons provided by the proponent if not implemented. *These measures are highlighted in grey for ease of reference.*

1.2 Content of the EMP

The EIA Regulations, 2010 (Government Notice (GN) 543, Chapter 3, Part 3, Section 33) prescribe the required content of an EMP. These requirements and the sections of this EMP in which they are addressed, are summarised in Table 1-1.

Table 1-1: Content of the EMP as per EIA Regulations, 2010

GN 543, S33 Ref.:	Item	Section Ref.:
(a) (i)	Details of the person who prepared the EMP	Page i
(a) (ii)	Expertise of that person to prepare an EMP	Page i

GN 543, S33 Ref.:	Item	Section Ref.:
(b)	Information on any proposed management or mitigation measures to address the environmental impacts identified in the EIA in respect of:	
(b) (i)	Planning and design	2
(b) (ii)	Pre-construction and construction activities	3
(b) (iii)	Operation or undertaking of the activity	4
(b) (iv)	Rehabilitation of the environment	5
(b) (v)	Closure, where relevant	n/a
(c)	A detailed description of the aspects covered by the draft EMP	1.2
(d)	An identification of the persons responsible for implementation of the mitigation measures	2 - 5
(e)	Proposed mechanisms for monitoring compliance with and performance of the EMP	2 - 5
(f)	Where practicable, measures to rehabilitate the environment affected by the activity	3
(g)	Description of the manner in which it intends to:	
(g) (i)	Modify, remedy, control or stop any action, activity or process that cause pollution or environmental degradation	3, 4
(g) (ii)	Remedy the cause of pollution or degradation	3, 4
(g) (iii)	Comply with any prescribed environmental management standards	3, 4
(g) (iv)	Comply, if applicable, with provisions of NEMA regarding closure	n/a
(g) (v)	Comply, if applicable, with provisions of NEMA regarding financial provisions for rehabilitation	n/a
(h)	Time periods within which the measures in the EMP must be implemented	2 - 5
(i)	Process for managing any environmental damage, pollution etc	3, 4
(j)	Environmental awareness plan describing the manner in which:	
(j) (i)	The applicant intends to inform his or her employees of environmental risks	3
(j) (ii)	Risks must be dealt with to avoid pollution/degradation of environment	3
(k)	Closure plans, where appropriate	n/a

1.3 Site and Project Description

Cape Town International Airport is located in the sandy Cape Flats region, immediately north of the N2 highway, approximately 20 km east of Cape Town's Central Business District (Figure 1-1). The current airport property is approximately 975 ha in extent, incorporating:

- The existing primary and secondary runways;
- The passenger terminal building complex and related airport support infrastructure (taxiways and aprons) to the west of the two existing runways;
- Undeveloped land to the east of the runways;
- A cargo terminal to the north of the passenger terminal; and
- A separate facility, presently used by the police and administered by the South African National Defence Force's (SANDF) 35 Squadron.

Immediately east of the airport property is a large (~400 ha) portion of derelict land, heavily infested with alien vegetation. Small sand dunes, with isolated patches of indigenous vegetation on the dune ridges, and numerous wetlands occur in this area. The area is extensively used for illegal dumping (including tyres, windscreens, building rubble and a range of other waste), harvesting of firewood, opportunistic grazing and, possibly, initiation rituals. Maccsand (Pty) Ltd mines sand in the north-eastern area, adjacent to and with direct access to Symphony Way.

Currently, Cape Town International Airport comprises two active runways: primary runway (Runway 01-19) with a declared operational capacity of 30 air traffic movements (ATM) and a secondary runway (Runway 16-34) bisecting it. The primary runway currently operates at a capacity of 25 ATM per hour, however Airports Company South Africa projects that demand will exceed runway capacity within the next decade.

Consequently, Airports Company South Africa proposes to re-align the existing primary runway, which would entail relocating the northern pivot of the primary runway by 220 m to the east and rotating it through 11.5 degrees in a counter clockwise direction. The re-aligned runway will facilitate and enable long term expansion of the airport to include two parallel runways (excluded from the scope of this EIA) and, in the short term, will increase operational capacity to 40-44 ATM and allow large aircraft (e.g. the Airbus A380) to use the airport.

In addition to the re-alignment of the primary runway, the Project will also include:

- A taxiway system;
- Infrastructure such as an aircraft isolation pad, a compass calibration pad and an aircraft run-up area;
- Security facilities;
- Service roads;
- Buildings and service infrastructure;
- Upgrade of the stormwater management system; and
- Bulk earthworks.

The proposed project footprint is approximately 700 ha in extent. The runway, taxiway system and associated infrastructure will have a footprint of approximately 82.7 ha, almost all located within the existing airport perimeter fence. The land to the east of the airport will be affected by bulk earthworks, required for the sourcing of material, primarily to raise the proposed runway to a suitable level and to manage stormwater on-site.

A more detailed project description is provided in Section 3 of the EIA Report (SRK Report 445354/07).

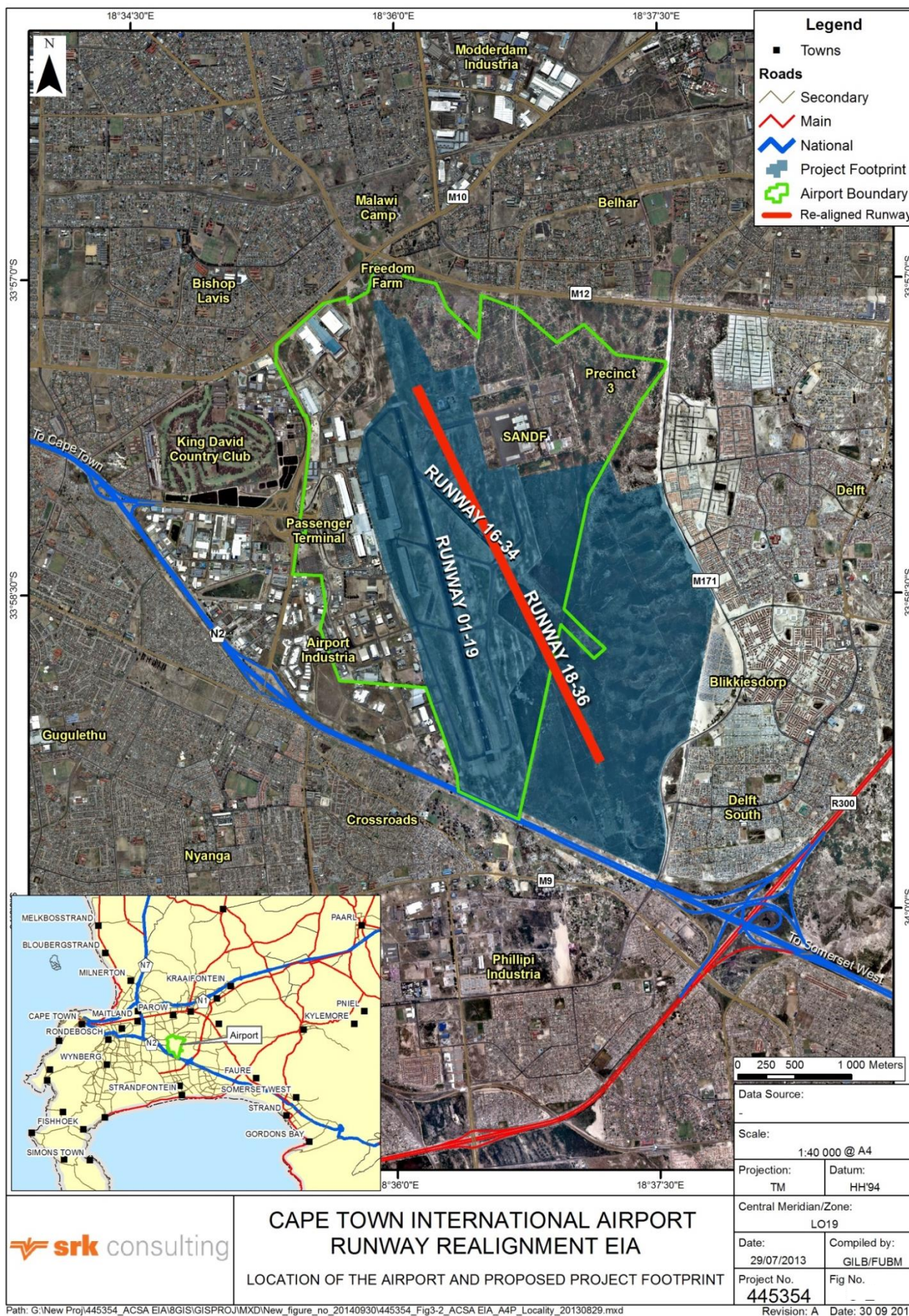


Figure 1-1: Cape Town International Airport locality map

1.4 Potential Impacts

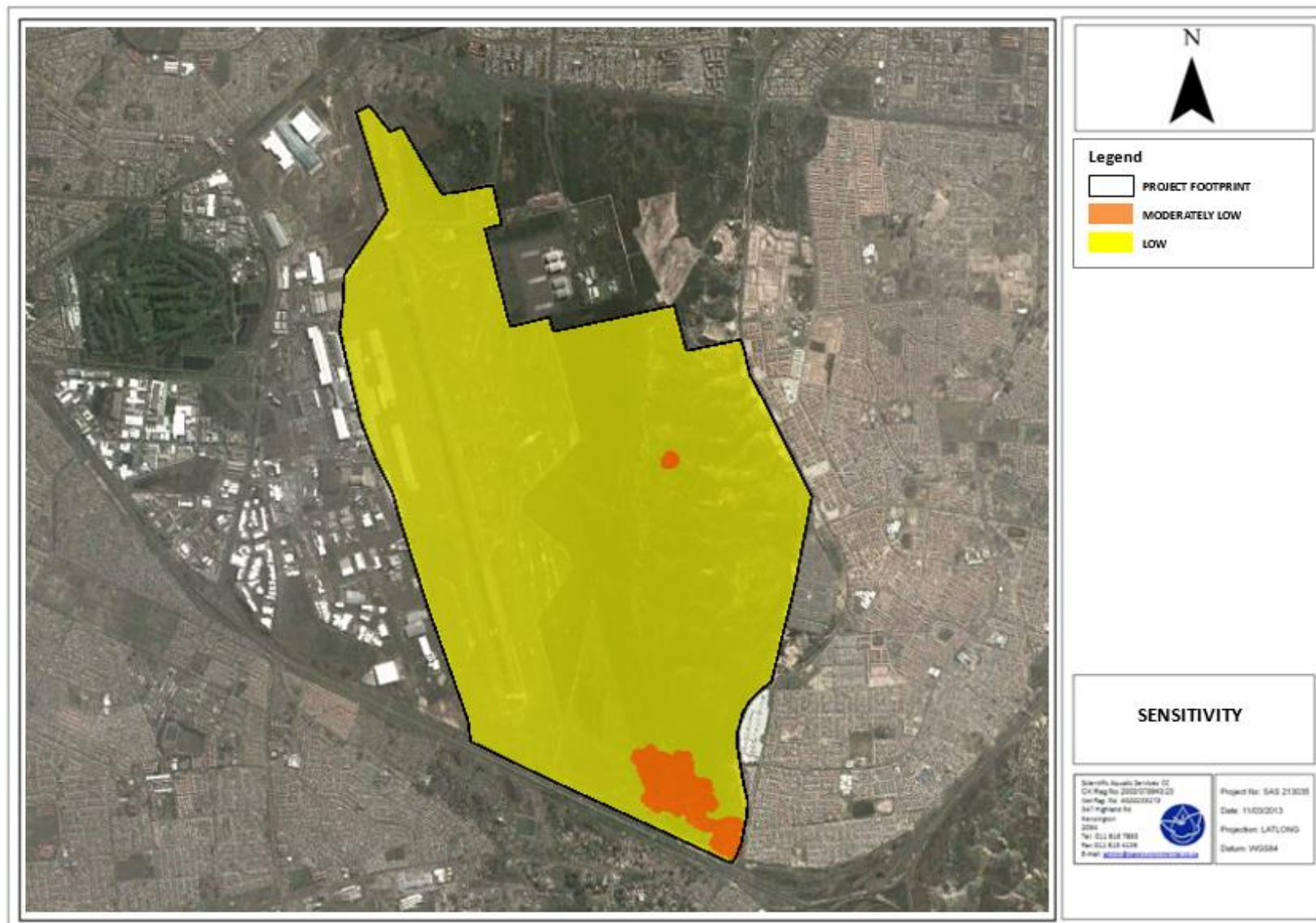
A summary of the potential impacts of the proposed Project identified and assessed in the EIA Report is presented in Table 1-2. Additional details on the nature of these impacts are provided in the EIA Report.

An environmental sensitivity map is provided as

Figure 1-2.**Table 1-2: Potential impacts of the proposed Project**

Impact	Description	Impact Status
Construction Phase		
Heritage	Destruction and loss of heritage resources	Negative
Air Quality	Impact of construction activities on air quality	Negative
Noise	Nuisance to surrounding receptors caused by noise during construction	Negative
Hydrogeology	Impact on groundwater levels due to removal of alien vegetation and bulk earthworks	Negative
	Impact on groundwater quality due to removal of alien vegetation and bulk earthworks	Negative
Freshwater Ecology	Loss of habitat and ecological structure	Negative
	Loss of ecosystem services	Negative
	Impacts on hydrological function and sediment balance	Negative
	Impacts on freshwater features located outside of the project footprint area	Negative
Terrestrial Ecology	Loss of terrestrial habitat	Negative
	Loss of floral diversity, floral species of conservation concern (SCC) and protected floral species	Negative
	Loss of faunal diversity, faunal red data list (RDL) species and protected faunal species	Negative
	Impacts associated with <i>Bathyergus Suillus</i> (Cape dune mole rat)	Negative
Socio-economic	Loss of access to resources on land east of existing airport	Negative
	Nuisance effects of construction related noise	Negative
	Generation of employment, income and skills training	Positive
	Increased revenue to government during construction	Positive
	Increased investment in and stimulation of the Western Cape from construction activities	Positive
Visual	Altered sense of place and visual quality caused by construction activities	Negative
Transport	Impact of construction traffic on the existing road network	Negative
Operations Phase		
Air Quality	Altered air quality from increased emissions due to increased airport capacity	Negative
	Health effects of air pollution	Negative
Noise Impacts	Noise impacts of the re-aligned runway and increased operational capacity	Negative
Hydrogeology	Impact on groundwater levels due to operations	Negative
	Impact on groundwater quality due to operations	Negative
Freshwater Ecology	Loss of habitat and ecological structure	Negative
	Loss of ecosystem services	Negative
	Impacts on hydrological function and sediment balance	Negative
	Impacts on freshwater features located outside of the project footprint area	Negative

Impact	Description	Impact Status
Terrestrial Ecology	Loss of faunal diversity, faunal RDL species and protected faunal species	Negative
	Impacts associated with <i>Bathyrgerus Suillus</i> (Cape dune mole rat)	Negative
	Impacts of changes in aircraft flight paths on avifaunal flight paths	Negative
	Impacts associated with bat strikes	Negative
Socio-economic	Impacts on quality of life in areas with increased noise levels	Negative
	Improved quality of life in areas with decreased noise levels	Positive
	Impacts on future housing developments by City of Cape Town (CoCT)	Negative
	Generation of employment, income and skills training during operations	Positive
	Increased revenue to government during operations	Positive
	Increased investment in and stimulation of the Western Cape economy during operations	Positive
Visual	Altered sense of place and visual quality caused by re-aligned runway and associated infrastructure	Negative
Transport	Impact of airport-related road traffic on the existing road network	Negative

**Figure 1-2:****Environmental sensitivity map**

Source: SAS, 2014

2 Measures Applicable to the Detailed Design Phase

2.1 Roles and Responsibilities

The key role players during the design phase of the project are:

- Airports Company South Africa (the proponent); and
- Engineering consultants responsible for the design of the re-aligned runway and associated infrastructure.

Their roles and responsibilities during the detailed design phase with respect to the implementation of the EMP are outlined below.

Airports Company South Africa:

- Ensure that the engineering consultant team is aware of and takes into consideration all relevant measures in the EMP; and
- Confirm that all relevant environmental management measures in the EMP have been incorporated into the project design on completion of the Design Phase.

Engineering Consultants:

- Take cognisance of all relevant measures in the EMP and ensure integration thereof in the detailed design; and
- Reference the environmental management measures applicable to the construction (Section 3) and operations (Section 4) phases of the Project in all documents that will be applicable to future phases of the Project (e.g. tender documents).

2.2 Environmental Management Measures

The environmental management and mitigation measures that must be implemented during the design phase, as well as responsibilities and timelines for the implementation of these measures and monitoring thereof, are laid out in Table 2-1 below.

Table 2-1: Environmental management and mitigation measures that must be implemented during the Design Phase

Design Phase Measures						
Aspect	ID	Mitigation measure / Procedure	Responsible	Implementation Timeframe	Monitoring Methods	Performance Indicators
Authorisations	1.	Ensure that all required licences and permits have been obtained before the start of construction. These include, but may not be limited to: - Water Use Authorisations; - Permits for the disturbance or destruction of structures older than 60 years; - Permits for the disturbance or removal of protected plant or faunal species.	• Airports Company South Africa	• Before relevant construction activities commence	• Keep record of all permits, licences and authorisations	• Required licences/permits on file
Final EMP	2.	Finalise the EMP (if required) to include all conditions of authorisation imposed by DEA and any other permitting authorities.	• Airports Company South Africa	• Before construction commences	• Amended EMP with all licence/permit conditions	• Inclusion of all permit and licence conditions
Environmental Management	3.	Appoint an independent Environmental Control Officer (ECO) to oversee construction activities.	• Airports Company South Africa	• Prior to the start of construction activities on site and for the duration of construction activities	• ECO to submit monthly reports to Airports Company South Africa for the duration of contract	• Regular ECO site visits and monthly reports
	4.	<u>Submit the name of the ECO to the Director: Compliance Monitoring (DEA).</u>	• <u>Airports Company South Africa</u>	• <u>Once ECO appointed and before construction commences</u>	• -	• <u>Communication with DEA</u>
	5.	Include the EMP in all tender documents to ensure that sufficient resources are allocated to environmental management by the Contractor.	• Airports Company South Africa / Engineer	• Prior to call for tenders	• Airports Company South Africa to check tender documents and contract	• Incorporated in tender documents
Water Management	6.	Ensure that the runway and taxiways are elevated above the expected groundwater level. Consult a hydrogeologist regarding the final ground levels, if required.	• Engineer	• During detailed design	• Airports Company South Africa to confirm on acceptance of final design	• Provided in final design • Required licences/permits on file
	7.	Provide for sub-surface drainage and stormwater removal systems at edges of impermeable surfaces where impermeable geological layers are shallow.				
	8.	Obtain approval for any activities within wetland areas from Department of Water Affairs and Sanitation (DWS) in terms of Section 21 (c) and (i) of the National Water Act.	• Airports Company South Africa			
	9.	Identify and implement a suitable wetland offset in agreement with DWS aimed at ensuring the long-term conservation of another Western Strandveld wetland in the Western Cape. If another suitable Western Strandveld wetland cannot be identified, the conservation of another type of wetland must be considered, in consultation with DWS.	• Airports Company South Africa	• Prior to construction	• Wetland Offset Report	• Approval of wetland offset by DWS • Successful implementation of wetland offset

Design Phase Measures						
Aspect	ID	Mitigation measure / Procedure	Responsible	Implementation Timeframe	Monitoring Methods	Performance Indicators
	10.	Integrate the new stormwater system into the airport's existing stormwater systems <u>and amend the existing stormwater management plan.</u>	Engineer	During detailed design	Airports Company South Africa to confirm on acceptance of final design	Provided in final design
	11.	Ensure that the stormwater system design allows for adequate stormwater retention on site, in line with CoCT restrictions for stormwater discharged from the site.				
	12.	Minimise paved and sealed surfaces to reduce stormwater runoff.				
Vegetation Management	13.	Rescue and relocate indigenous species, floral SCC and protected species to suitable habitat off site (e.g. Driftsands Nature Reserve).	Airports Company South Africa	During spring flowering season, prior to the start of vegetation clearance.	- Appointment of vegetation specialist - Search and Rescue Report	- Permit on file - Floral species relocated
	14.	Undertake search and rescue within the spring flowering period in order to avoid missing bulb species which only appear during this time.				
	15.	Appoint a suitably qualified specialist to oversee search and rescue of floral species.				
	16.	Obtain a permit where required from CapeNature before commencing with floral search and rescue.				
Fauna Management	17.	Undertake a thorough walk-through of the site prior to construction to rescue and relocate fauna species to suitable habitat off site (e.g. the Driftsands Nature Reserve).	Airports Company South Africa	Prior to construction	- Appointment of fauna specialist - Search and Rescue Report	- Permit on file - Fauna species relocated
	18.	Appoint a suitably qualified specialist to oversee search and rescue of fauna species.				
	19.	Obtain a permit where required from CapeNature before commencing with faunal search and rescue.				
	20.	Allow for the installation of mole proof fencing to discourage the migration of <i>Bathergus suillus</i> onto the site during Construction and Operations Phases.	Engineer	During detailed design	Airports Company South Africa to confirm on acceptance of final design	Provided in final design
	21.	Allow for a fence around the airport boundary to prevent the movement of fauna onto the site. Consider suitable fencing / exclusion barrier to prevent the movement of larger mammals onto the airport property and vermin fencing at the base to prevent the movement of smaller mammals onto the airport property.				
Air Emissions	22.	Develop and Implement Air Quality Monitoring Plan, which should include a grievance mechanism and corrective actions (see Section 5).	Airports Company South Africa	Prior to construction	-	Air Quality Monitoring Plan
	23.	Investigate through engagement with industry role players the provision of electricity and air for aircraft at terminal gates, so as to minimise use of Auxiliary Power Units (APU) and Ground Support Equipment (GSE) as much as possible.	Airports Company South Africa	During detailed design	Communication with airlines	Proof of implementation or

Design Phase Measures						
Aspect	ID	Mitigation measure / Procedure	Responsible	Implementation Timeframe	Monitoring Methods	Performance Indicators
	24.	Investigate through engagement with industry roleplayers the utilisation of APU for only 5 minutes whilst on stand, as well as on arrival and before departure. Alternatively, pilots should not be allowed to start the on-board APU while taxiing to the gate but only when the aircraft reaches the gate.			Reports to airport stakeholders and authorities	motivation for not implementing
	25.	Provide evidence to the authorities that the above-mentioned measures to mitigate air emissions were investigated, and why they are not considered feasible, where applicable.				
Noise Management	26.	Develop and implement a construction noise monitoring plan, which should include a grievance mechanism and corrective actions (see Section 5). Finalise the locations of the noise monitoring points once the construction plan and schedule are determined. The monitoring points should be located close to the construction site access point and the nearest affected community.	Airports Company South Africa	Prior to construction activities	Internal Audit	Noise Monitoring Plan
	27.	Communicate the construction schedule to residents (through ward councillors) and schools located in closest proximity to the site. Specifically notify the Delft South schools located close to the site boundary.				Records of communication with surrounding residents and schools.
	28.	Where possible, design noise preferential routes to assist aircraft in avoiding noise-sensitive areas on departure and arrival.	ATNS, Airports Company South Africa	Prior to operations	- Internal Audit - Noise monitoring - Quarterly noise results	- Implementation Plan/procedures - Number of noise complaints received
	29.	Provide ground power to aircraft remotely at all new contact stands, and investigate the provision of ground power at all existing contact stands, eliminating the need for aircraft at these stands to generate their own power.	Engineer	During detailed design	Airports Company South Africa to confirm on acceptance of final design	Provided in final design
	30.	Engage the National Department of Transport, as the competent authority, to facilitate the development of relevant noise policies in consultation with Industry and the City of Cape Town.	Airports Company South Africa	During detailed design and ongoing	Internal Audit	Records of communication with national Department of Transport
Protection of Archaeological and Paleontological Resources	31.	Clear vegetation and debris around structures to expose them and allow for the floor plan, and where possible, elevations of the structures to be recorded in writing and photographically, for submission to Heritage Western Cape (HWC).	- Heritage Specialist - Airports Company South Africa	Prior to site clearing and removal of structures	- Correspondence with HWC - Documentation of structures	- Report sent to HWC - Permit received from HWC
	32.	Make application to HWC for a permit to destroy any structures over 60 years old.				
	33.	Appoint a suitably qualified heritage specialist.	Airports Company South Africa		Appointment of heritage specialist	

Design Phase Measures						
Aspect	ID	Mitigation measure / Procedure	Responsible	Implementation Timeframe	Monitoring Methods	Performance Indicators
Visual Aspects	34.	Limit lighting to essential activities and facilities as far as possible. Direct security lighting inwards and downwards towards activities and facilities to avoid light spillage. External lights on buildings and similar infrastructure should be fitted with reflectors ("full cut-off" luminaires) to direct illumination downward and inward to the specific illuminated areas.	• Engineer	• During detailed design	• Airports Company South Africa to confirm on acceptance of final design	• Provided in final design
	35.	Paint project components with non-reflective paints, varnishes etc. for surface treatments.				
Grievance Management	36.	Develop and implement a Grievance Management Procedure (Complaints Register) which clearly defines: - Communication protocols (verbal and written); - Contact names and numbers - An escalation path for complaint resolution; and - A grievance close-out procedure.	• Airports Company South Africa	• Prior to construction	• Internal Audit	• Grievance Management Procedure
Emergency Response	37.	Update the Emergency Response Plan to provide for emergency procedures during construction and operations following the re-alignment of the runway.	• Airports Company South Africa	• Prior to construction	• Internal Audit	• Updated Emergency Response Plan
Economic Development	38.	Include the following requirements in the tender documents: - employment of local people must be prioritised as far as possible and explicitly outlined in the tender application; and - where applicable, all local construction employees are to receive job-specific training, as required. This may be formal on-the-job mentoring / training.	• Airports Company South Africa	• Prior to call for tenders	• Airports Company South Africa to check tender documents and contract	• Incorporated in tender documents • Communication with business forums
	39.	Maintain ongoing communication with appropriate business forums to optimise opportunities for local businesses to participate in and benefit from the Project.				

3 Measures Applicable to the Construction Phase

3.1 Roles and Responsibilities

The key role players during the Construction Phase of the project are anticipated as follows:

- Airports Company South Africa (the proponent);
- Resident Engineer, who will oversee activities and Contractors on site;
- Contractor(s) responsible for the construction of the re-aligned runway and associated infrastructure; and
- Any sub-contractors hired by the Contractor.

The anticipated Construction Phase organogram is presented in Figure 3-1 below and shows the proposed lines of communication during this phase. All instructions relating to the EMP will be given to the contractor via the Resident Engineer (RE). In an emergency situation, the Environmental Control Officer (ECO) may give an instruction directly to the Contractor. Both the Contractor and ECO will report issues of concern to the RE, who in turn will report on progress to the proponent. Airports Company South Africa will retain responsibility for ensuring that the Contractor fully implements the provisions of the EMP.

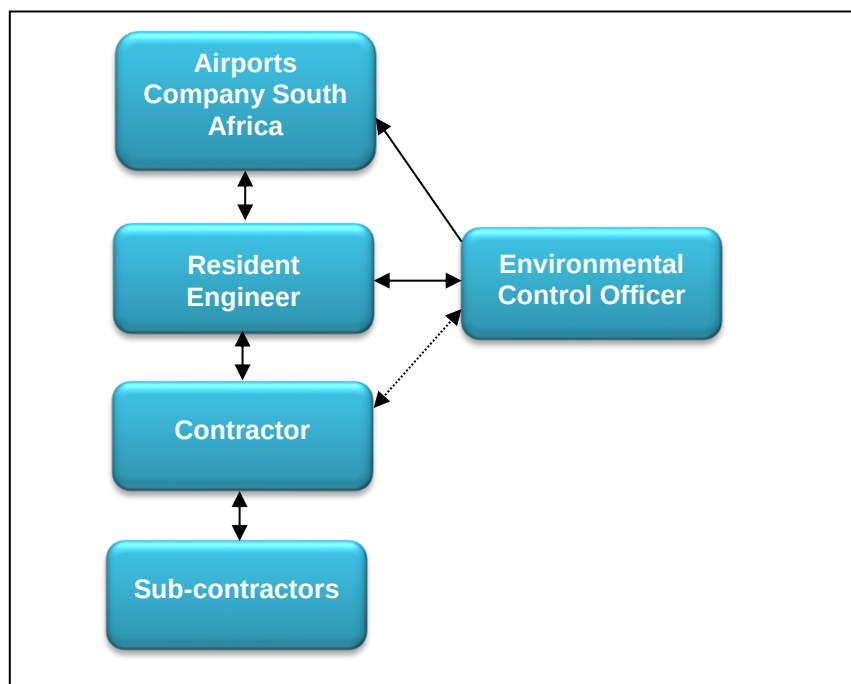


Figure 3-1: Construction Phase reporting structure

Key roles and responsibilities during the Construction Phase with respect to the implementation of the EMP are outlined below.

Airports Company South Africa:

Airports Company South Africa has overall responsibility for management of the Project. In terms of environmental management, the proponent will:

- Appoint suitably experienced Engineers who will be responsible for the overall management of activities on site during the Construction Phase;
- Appoint an independent and suitably qualified ECO to monitor compliance with the EMP for the duration of the Construction Phase;
- Ensure that the Engineers are aware of the requirements of the EMP, implement the EMP and monitor the Contractor's activities on site;
- Ensure that the Contractor is aware of and contractually bound to the provisions of this EMP by including the relevant environmental management requirements in the tender and contract documents, as appropriate;
- Ensure that the Contractor remedies environmental problems timeously and to the satisfaction of the ECO and authorities (when necessary); and
- Notify the authorities should problems not be remedied timeously.

Resident Engineer:

Airports Company South Africa will appoint suitably qualified Engineers, who in turn will designate a suitable RE who will be responsible for overseeing activities of the Contractor during the Construction Phase. The RE shall:

- Ensure that the Contractor is duly informed of the EMP and associated responsibilities and implications of this EMP prior to commencement of construction;
- Monitor the Contractor's activities (together with the ECO) with regard to the requirements outlined in the EMP;
- Relay all instructions from the ECO to the Contractor and ensure that these are fully understood and implemented;
- Report any environmental emergencies/concerns to the ECO immediately;
- Act as a point of contact for local residents and community members; and
- Ensure that non-compliance is remedied timeously and to the satisfaction of the relevant authorities.

Contractor:

The Contractor will be required to appoint or designate a Contractor's Environmental Representative (CR) who will assume responsibility for the Contractor's environmental management requirements on site and be the point of contact between the Contractor and the ECO. The CR shall:

- Ensure that all activities on site are undertaken in accordance with the EMP;
- Monitor the Contractor's activities (together with the ECO) with regard to the requirements outlined in the EMP;
- Ensure that all employees and sub-contractors comply with the EMP;
- Immediately notify the ECO of any non-compliance with the EMP, or any other issues of environmental concern; and
- Ensure that non-compliance is remedied timeously and to the satisfaction of the ECO.

The Contractor has a duty to demonstrate respect and care for the environment. The Contractor will be responsible for the cost of rehabilitation of any environmental damage that may result from non-compliance with the EMP, environmental regulations and relevant legislation.

Sub-contractors:

All Sub-contractors will be required to:

- Ensure that all employees are duly informed of the EMP and associated responsibilities and implications of this EMP prior to commencement of construction;
- Ensure that all activities on site are undertaken in accordance with the EMP;
- Monitor employees' activities (together with the ECO) with regard to the requirements outlined in the EMP;
- Immediately notify the ECO of any non-compliance with the EMP, or any other issues of environmental concern; and
- Ensure that non-compliance is remedied timeously and to the satisfaction of the ECO.

The Sub-contractor has a duty to demonstrate respect and care for the environment. The Sub-contractor will be responsible for the cost of rehabilitation of any environmental damage that may result from non-compliance with the EMP, environmental regulations and relevant legislation, resulting from their presence on site.

Environmental Control Officer:

The ECO shall be a suitably qualified/experienced environmental professional or professional firm, appointed by the proponent, for the duration of the Construction Phase of the Project. The ECO shall:

- Request Method Statements from the Contractor prior to the start of relevant construction activities, where required, and approve these (as appropriate) without causing undue delay;
- Monitor, review and verify compliance with the EMP by the main Contractor, as well as any sub-contractors and specialist contractors;
- Undertake site inspections at least once a month to determine compliance with the EMP;
- Identify areas of non-compliance and recommend corrective actions (measures) to rectify them in consultation with Airports Company South Africa, the RE and the Contractor, as required;
- Compile a checklist highlighting areas of non-compliance following each ECO inspection for submission to Airports Company South Africa and the RE;
- Ensure follow-up and resolution of all non-compliances;
- Provide feedback for continual improvement in environmental performance;
- Respond to changes in project implementation or unanticipated site activities which are not addressed in the EMP, and which could potentially have environmental impacts, and advise Airports Company South Africa, the RE and Contractor as required; and
- Undertake a site closure inspection, which may result in recommendations for additional clean-up and rehabilitation measures.

3.2 Compliance and Monitoring

3.2.1 Method Statements

A Method Statement is a document setting out specific details regarding the plant, materials, labour and method the Contractor proposes using to carry out certain activities, usually activities that may have a detrimental effect on the environment. It is submitted by the Contractor to the ECO.

The purpose of a Method Statement is for the Contractor to provide additional details regarding the proposed methodology for certain activities, and for the ECO to confirm that these meet the requirements of the EMP and acceptable environmental practice. This allows the EMP to be less prescriptive and affords the Contractor a certain amount of flexibility or to amend stipulations in the EMP, if approved by the ECO. It also provides a reference point to detect deviations from the agreed approach to an activity.

Each Method Statement will address environmental management aspects relevant to the activity and will typically provide detailed descriptions of items including, but not necessarily limited to:

- Nature, timing and location of activities;
- Procedural requirements and steps;
- Management responsibilities;

- Material and equipment requirements;
- Transportation of equipment to and from site;
- Method for moving equipment/material while on site;
- How and where material will be stored;
- Emergency response approaches, particularly related to spill containment and clean-up;
- Response to compliance/non-conformance with the requirements of the EMP; and
- Any other information deemed necessary by the ECO.

The following list provides examples of Method Statements that may be requested from the Contractor:

- Environmental awareness course preparation;
- Material and equipment storage and delivery;
- Fuel storage, dispensing and fuel spills;
- Waste management;
- Management of contaminated water;
- Erosion and stormwater control;
- Cement batching; and
- Any others requested by the ECO.

The Method Statements will be submitted by the Contractor to the ECO no less than **7 days** prior to the intended date of commencement of an activity (or as otherwise agreed with the ECO). The ECO shall approve / reject the Method Statement within **2 days**. An activity covered by a Method Statement shall not commence until the ECO has approved of such method and once approved, the Contractor shall abide by the relevant Method Statement. A pro forma Method Statement is attached in Appendix A, although a suitable Method Statement format can be agreed between the ECO and Contractor.

3.2.2 Environmental Records and Reports

Environmental records and reports required during the Construction Phase are listed in Table 3-1.

Table 3-1: Reports required during Construction

Report	Frequency	From	To
Environmental Checklist	Weekly	CR	ECO
Environmental Compliance Report	Monthly	ECO	RE and Airports Company South Africa
Site Closure Audit	End of Contract	ECO	RE and Airports Company South Africa

Environmental Checklist

The CR will undertake weekly site inspections to verify compliance with the EMP by the Contractor and complete a brief report/checklist after the inspection. The completed checklists shall be submitted to the ECO at the end of each inspection. This checklist should be discussed between the CR and the ECO during the initial site inspection, and agreement reached on the preferred format and content.

Environmental Compliance Report

The ECO will prepare monthly Environmental Compliance Reports, detailing tasks undertaken by the ECO, any environmental issues, non-compliance and corrective actions to be implemented. These

reports will be based on the ECO's observations and the weekly Environmental Checklists. Environmental Compliance Reports will be submitted to the RE / Airports Company South Africa and a full record will be kept by the ECO, for submission to the Local Authority and/or DEA on request.

When more frequent site visits are undertaken by the ECO, the frequency of progress reports will increase accordingly to allow for timely reporting of environmental issues and actions required.

Photographic Records

If the ECO identifies any areas of concern, the ECO will take photographs for record purposes.

Site Closure Audit

The ECO will undertake a final site closure audit on completion of the Construction Phase (and on completion of all rehabilitation measures, where required). The purpose of this is to confirm compliance with all site closure requirements identified by the ECO, and that the site has been left in an environmentally suitable condition. If outstanding environmental requirements are observed during this inspection, a further inspection must be carried out to confirm compliance. The Site Closure Audit Report will be submitted to the RE / Airports Company South Africa for record purposes, and to DEA if requested.

3.2.3 Corrective Action

Corrective action is a critical component of the plan-do-check-act implementation cycle and it is through corrective action that continuous improvement can be achieved. Where repeated non-compliance is recorded, procedures may need to be altered accordingly to avoid the need for repeated corrective action.

If environmental compliance monitoring by the CR and ECO indicates non-conformance with the EMP or approved Method Statements, the RE will formally notify the Contractor through a Corrective Action Request. The Corrective Action Request documents:

- The nature of the non-conformance/environmental damage;
- The actions or outcomes required to correct the situation; and
- The date by which each corrective or preventive action must be completed.

Upon receipt of the Corrective Action Request, the Contractor will be required to produce a Corrective Action Plan (or similar plan), which will detail how the required actions will be implemented. The Corrective Action Plan must be submitted to the ECO for approval prior to implementation. Once it has been approved, the corrective action must be carried out within the time limits stipulated in the Corrective Action Request. Additional monitoring by the CR and ECO will then be required to confirm the success or failure of the corrective action.

3.3 Environmental Management Measures

Project-specific environmental management and mitigation measures that must be implemented during the Construction Phase, as well as responsibilities and timelines for the implementation of these measures and monitoring thereof, are laid out in Table 3-2.

Table 3-2: Environmental management and mitigation measures that must be implemented during the Construction Phase

Construction Phase Measures						
Aspect	ID	Mitigation measure / Procedure	Responsible	Implementation Timeframe	Monitoring Methods ¹	Performance Indicators
<u>Environmental Documentation</u>	1.	<u>Keep the following documentation on site and make the documentation available for inspection to any relevant and competent authorities upon request:</u> - <u>Licences and permits;</u> - <u>EMP;</u> - <u>ECO compliance reports; and</u> - <u>Monitoring reports.</u>	• <u>Airports Company South Africa</u>	• <u>Duration of construction activities</u>	• <u>Visual inspections</u>	• <u>Documentation on site</u>
	2.	<u>Submit written notification of commencement to the Director: Compliance Monitoring (DEA) at least 14 days prior to the commencement of the activity.</u>	• <u>Airports Company South Africa</u>	• <u>Prior to start of construction activities</u>	• -	• <u>Written notification submitted to DEA</u>
	3.	<u>Notify the Director: Compliance Monitoring (DEA) in writing and within 48 hours if any condition of the authorisation cannot be or is not adhered to.</u>	• <u>Airports Company South Africa</u>	• <u>Duration of construction activities</u>	• -	• <u>Written notification submitted to DEA</u>
	4.	<u>Submit an environmental audit report to the Director: Compliance Monitoring (DEA) within 30 days of completion of the Construction Phase (including all rehabilitation measures).</u>	• <u>Airports Company South Africa</u>	• <u>Within 30 days of completion of construction / rehabilitation</u>	• -	• <u>Audit report submitted to DEA</u>
Site Camp and Site Establishment	5.	Submit a method statement for site camp establishment for approval by the ECO at least two weeks prior to the start of construction activities.	• Contractor	• Start of construction	• Visual inspections • Method statement	• Approved method statement • No illegal entry • Site boundaries demarcated • Signage in place
	6.	Establish a suitably fenced site camp at the start of the contract, which will allow for site offices, vehicle, equipment, material and waste storage areas to be consolidated as much as possible. Locate the site camp <u>within the disturbance footprint</u> at a position approved by the ECO. Provide water and / or washing facilities at the site camp for personnel.				
	7.	Demarcate construction site boundaries upon establishment. Control security and access to the site. Fence off site boundaries to the satisfaction of the ECO and ensure that plant, labour and materials remain within site boundaries.				
	8.	Designate the area beyond the boundary of the site as "No go" areas for all personnel on site. No vehicles, machinery, materials or people shall be permitted in the "No go" area at any time without the express permission of the RE in consultation with the ECO.				

¹ Unless otherwise indicated, monitoring will be undertaken by the ECO, supported by the authorities where the requirement is specifically stipulated in a licence or permit.

Construction Phase Measures						
Aspect	ID	Mitigation measure / Procedure	Responsible	Implementation Timeframe	Monitoring Methods ¹	Performance Indicators
	9.	Provide suitable emergency contact numbers and safety signage on site.				
	10.	Keep construction site tidy and all activities, material and machinery contained within an area that is as small as possible.		Duration of construction activities	Visual inspections	Construction camp, laydown areas work areas contained
Complaints Register	11.	Maintain a complaints register. The register must record: - Complainant name and contact details; - Date complaint was lodged; - Person who recorded the complaint; - Nature of the complaint; - Actions taken to investigate the complaint and outcome of the investigation; - Action taken to remedy the situation; and - Date on which feedback was provided to complainant.	- Airports Company South Africa - Contractor	Duration of construction activities	Visual inspections	- Register on site - Complaints followed up and closed out
Vegetation Clearing	12.	Limit the footprint area of the construction activity to what is absolutely essential.	Contractor	Duration of construction activities	Visual inspections	- Vegetation removal limited to work areas - Separate topsoil stockpiles - Controlled access to wood
	13.	Ensure that no vegetation is removed or disturbed outside the delineated construction site boundary.				
	14.	Limit clearing of vegetation to those areas within the footprint of construction activities and bulk earthworks.				
	15.	Avoid removal of vegetation until soil stripping is required.				
	16.	Stabilise exposed surfaces if required to avoid soil erosion or wind-blown dust.				
	17.	Stockpile all topsoil for later use in rehabilitation/landscaping of disturbed areas.				
	18.	Offer communities the opportunity to remove combustible material (firewood), prior to earthworks.				
Fauna Management	19.	Strictly prohibit hunting and trapping or killing of fauna by construction personnel.	- Contractor - Fauna specialist	Duration of construction activities	Visual inspections	- Number of incidences of hunting - Relocation of fauna - Occurrences of hazards
	20.	Rescue and relocate animals unable to migrate from the airport to suitable areas off site (e.g. Driftsands Nature Reserve). - Rescue and relocate individuals of <i>Bathyrergus suillus</i> (Cape dune mole rat) encountered on site to surrounding open veld areas. - A suitably qualified professional must endorse rescue and relocation procedures for wild fauna.				
	21.	Establish communication protocols between contractor and fauna specialist regarding hazards posed by wildlife.				

Construction Phase Measures						
Aspect	ID	Mitigation measure / Procedure	Responsible	Implementation Timeframe	Monitoring Methods ¹	Performance Indicators
Handling of Construction Materials	22.	Imported materials shall be free of weeds, litter and contaminants. Materials to be obtained from reputable commercial sources.	Contractor	Duration of construction activities	- RE to inspect imported materials - Visual inspections	- No contaminants - Designated and approved stockpile area - Stockpiles less than 3 m in height or necessary measures in place
	23.	Stockpile areas shall be approved by the RE / ECO before any stockpiling commences.				
	24.	Where possible, stockpiles shall be located in sheltered areas where they are not exposed to the erosive effects of the wind.				
	25.	Stockpiles shall not exceed 3 m in height. If stockpiles are greater than 3 m in height, then suitable measures shall be taken to avoid wind-blown dust.				
Water Management	26.	Avoid any discharge of effluents or polluted/contaminated water (e.g. cements, concrete, lime, chemicals and fuel) into wetlands/watercourses or the airport's stormwater system.	Contractor	Duration of construction activities	Visual inspections	- No indication of pollution - Runoff management / structures in place - Silt trapping structures in place - Measures in place to prevent erosion - Drip trays in use - Eroded areas restored - Energy dissipators in place - Training records
	27.	Take reasonable measures to control the erosive effects of stormwater run-off and the associated sedimentation of surrounding wetlands/watercourses with the following measures: - berms; - soil traps; - hessian curtains; - stormwater diversion away from areas susceptible to erosion; and - stormwater attenuation. Care should be taken to avoid additional disturbance during the implementation of these measures.				
	28.	Curtail sheet runoff from cleared areas and access roads.				
	29.	Backfill and compact any runnels or erosion channels developed during construction restore the area to its prior condition.				
	30.	Use energy dissipating structures (e.g. gabions) at stormwater discharge points from the construction site into existing stormwater infrastructure.				
	31.	Revegetate or stabilise cleared areas as soon as possible in order to reduce the erosion of topsoil and the associated sedimentation of surrounding wetlands/watercourses.				
	32.	Ensure that equipment and vehicles are well maintained to prevent leakages of fuel and lubricants.				
	33.	Park vehicles on a hardened surface overnight or make use of drip trays and/or sand trays positioned under parked equipment to contain any fuel or lubricant leaks.				

Construction Phase Measures						
Aspect	ID	Mitigation measure / Procedure	Responsible	Implementation Timeframe	Monitoring Methods ¹	Performance Indicators
Protection of Archaeological and Paleontological Resources	34.	Service vehicles off-site, unless unavoidable, in which case service vehicles on a hardened impermeable surface (preferably concrete) with suitable drainage to allow contaminated runoff to be contained.	- Contractor - Heritage Specialist	Duration of construction activities	- Visual inspections - Communication with HWC	- No further work in relevant area - HWC informed - Appointment of specialist
	35.	Adequately train all construction personnel on the need to prevent soil and groundwater contamination.				
	36.	Inform all construction personnel that archaeological or paleontological artefacts, including human skeletal remains, might be exposed during construction activities.				
	37.	Advise contractors and workers of the penalties associated with the unlawful removal of cultural, historical, archaeological or paleontological artefacts, as set out in section 51 of the National Heritage Resources Act.				
	38.	In the event that archaeological, paleontological or historical remains are unearthed during construction activities, cease work immediately and notify HWC (tel: 021 483 9598), a specialist and the ECO. Do not remove, destroy or interfere with any remains. Accommodate an evaluation, and, if deemed significant, removal of the find by a qualified specialist.				
	39.	If any graves or unmarked human burials are discovered, works in the area are to be stopped immediately and HWC, a specialist and the ECO shall be informed immediately.				
Waste Management	40.	Remains must not be disturbed or removed until inspected by HWC and approval to proceed has been obtained.	Contractor	Duration of construction activities	- Visual inspection of waste collection and disposal areas - Check waste disposal slips	- No burning on site - Presence of litter - Availability of bins and skips - Total volume of general, hazardous and recyclable waste storage capacity - Total volume of general, hazardous and recyclable waste stored on site - Degree to which different waste is separated
	41.	Waste may not be buried or burned on site.				
	42.	Provide sufficient weather- and vermin-proof bins for the disposal of solid waste in construction areas. Empty bins weekly or more regularly as required. Dispose all waste at a licenced waste disposal facility.				
	43.	Clean up the site camp and working areas at least once a week.				
	44.	<u>Implement an integrated waste management system based on waste minimisation and</u> identify waste for reduction, reuse and recycling opportunities. Recycling protocols shall sort materials into the following categories: - Paper/cardboard; - Metals; - Organic waste; and - Glass.				

Construction Phase Measures						
Aspect	ID	Mitigation measure / Procedure	Responsible	Implementation Timeframe	Monitoring Methods ¹	Performance Indicators
	45.	Store refuse separately from general rubble. Rubble, if clean could be reused (as fill), while refuse shall be disposed of at a licenced waste disposal facility.				Frequency of waste collection
	46.	Separate hazardous waste from general waste and clearly mark for storage in appropriate containers within an impervious secondary containment (e.g. a bund) to prevent contamination in the case of a spill.				
	47.	Store solid and liquid hazardous waste in separate containers.				
	48.	Dispose hazardous waste at a licenced hazardous waste disposal facility.				
	49.	Remove and appropriately dispose of any contaminated soil and water to a designated disposal site as promptly as possible following contamination.				
Concrete/Cement Work	50.	Use Ready-Mix concrete rather than batching on site where possible.	Contractor	Duration of construction activities	Visual inspections	- Number of incidents of batching outside works footprint. - Designated washing facility. - Contamination of water and soil. - Visible litter / waste on site.
	51.	Ensure that no cement truck delivery chutes are cleaned on site. Cleaning operations are to take place off site at a location where wastewater can be disposed of in the correct manner. If this is not possible a suitable washing facility is to be developed on site in consultation with the ECO.				
	52.	Batch cement in a bunded area within the boundaries of the development footprint only (where unavoidable).				
	53.	Ensure that cement is mixed on mortar boards and not directly on the ground (where unavoidable).				
	54.	Physically remove any remains of concrete, either solid, or liquid, immediately and dispose of as waste.				
	55.	Place cement bags in bins with lids and dispose of bags as waste to a licensed waste disposal facility.				
	56.	Contaminated water from batching areas shall be contained and sediments allowed to settle before being disposed of as waste water.				
Hazardous Materials	57.	Keep relevant Material Safety Data Sheets (MSDS) on site for all potentially hazardous substances (as defined in the regulations for hazardous chemical substances). In the event of an emergency, procedures detailed in the MSDS shall be followed.	Contractor	Duration of construction activities	Visual inspections	- MSDS on site - Register of hazardous substances on site - Suitable storage facility in place
	58.	Maintain a register of all hazardous substances stored on site.				

Construction Phase Measures						
Aspect	ID	Mitigation measure / Procedure	Responsible	Implementation Timeframe	Monitoring Methods ¹	Performance Indicators
	59.	Store all hazardous substances (including hazardous waste substances e.g. oils, bitumen, hydraulic fluids) within secondary containment in a suitable storage facility. Major stocks of hazardous materials other than fuel should preferably be stored off-site.				No disposal on site
	60.	No hazardous substance shall be disposed of on site.				
	61.	Ensure that hazardous substances (including cement) are not placed directly on the ground.				
	62.	Develop (or adapt and implement) procedures for the safe transport, handling and storage of potential pollutants.				
Fuel Storage and Dispensing	63.	Identify a suitable designated area for the fuel storage tanks.	Contractor	Duration of construction activities	Visual inspections	- Designated fuel storage area approved by ECO - Bund in place - Drip trays on site and in use - Fire-fighting equipment at refuelling area - No contamination - Spill kits at site camp
	64.	Store fuel in accordance with relevant SABS specifications and all fuel storage tanks shall be provided with adequate bunding (110% of the largest tank). The bund floor shall be impermeable and sloped to a sump to enable removal of spilled fuel and contaminated water.				
	65.	Undertake any on-site refuelling of vehicles/machinery in designated areas. Line these areas with an impermeable surface and install oil traps.				
	66.	Use appropriately sized drip trays for all refuelling and/or repairs done on machinery – ensure these are strategically placed to capture any spillage of fuel, oil, etc.				
	67.	Undertake regular maintenance of vehicles and machinery to identify and repair minor leaks and prevent equipment failures.				
	68.	Adequate fire-fighting equipment shall be provided at the fuel storage and dispensing areas.				
	69.	Clean up any spills immediately, through containment and removal of free product and appropriate disposal of contaminated soils.				
	70.	Keep spill containment and clean-up equipment at all work sites and for all polluting materials used at the site.				
Noise Management	71.	Limit noisy construction activities to day-time from Monday to Friday, where possible.	Contractor	Duration of construction activities	Visual inspections	- No excessive noise - Number of registered complaints
	72.	Limit the night time construction activities to those that are essential i.e. activities disrupting operation of the existing runway.				

Construction Phase Measures						
Aspect	ID	Mitigation measure / Procedure	Responsible	Implementation Timeframe	Monitoring Methods ¹	Performance Indicators
Dust and Air Quality Management	73.	Limit construction activities to at least 100m from residential areas during the day or 350m from residential areas at night. If this cannot be achieved, install a temporary noise barrier along the portion of the site boundary at which these distances cannot be achieved.				
	74.	Notify adjacent residents (through ward councillors), schools and business premises before particularly noisy construction activities will take place.				
	75.	Maintain all generators, vehicles and other equipment in good working order to minimise exhaust fumes and excess noise.				
	76.	Inform construction personnel of the need to minimise noise levels and methods for reducing noise levels.				
	77.	Enclose diesel generators used for power supply on site to reduce unnecessary noise.				
	78.	Investigate and respond to complaints about construction noise.				
	79.	Apply wet suppression methods (watering) to prevent dust generation from all disturbed and exposed areas and main site roads. Do not generate excess water that can run off and cause erosion. <u>Only non-potable water to be used. If an alternative water source is not available, then investigate the use of approved chemical dust suppression methods.</u>	• Contractor	• Duration of construction activities	• Visual assessment of dust plumes • Visual assessment of dust control measures	• Visibility of dust coming off construction site • Dust mitigation measures in place • Number of days that dust plumes are visible • Number of registered complaints • Size of disturbed areas
	80.	Pre-water areas earmarked for disturbance, if possible.				
	81.	During dry and windy conditions, apply water frequently depending on the atmospheric conditions or as soon as a dust plume is visible. Alternatively, implement other dust suppression methods e.g. straw stabilisation/ use of chemical stabilisers.				
	82.	Retain existing vegetation for as long as possible and only clear areas when required.				
	83.	Reduce the extent of exposed areas in which wind-blown dust may be generated.				
	84.	Implement a speed limit of 30km/hr on all unpaved roads and non-vegetated areas on site.				
	85.	Give preference to access routes further from the eastern boundary of the site.				
	86.	Minimise travel distances on site through appropriate construction site layout and design.				
	87.	Cover trucks transporting loose material that may generate dust to or from site with tarpaulins, plastic or canvas.				

Construction Phase Measures						
Aspect	ID	Mitigation measure / Procedure	Responsible	Implementation Timeframe	Monitoring Methods ¹	Performance Indicators
	88.	Minimise material handling and the frequency of disturbance of stockpiles to minimise wind erosion.				
	89.	Minimise dust generated off stockpiles: - Locate stockpiles in sheltered areas where possible; - Place the stockpile lengthwise into the wind; - Minimise the slope of the stockpile (maximum slope of 2:1); - Limit stockpile sizes; - Use the last in – first out system of stockpile management; and - Cover stockpiles when not in active use for some time and / or use an environmentally friendly chemical spray to bind soil.				
	90.	Check weather reports daily and closely observe weather patterns to enable action to be taken immediately if conditions change.				
	91.	Do not commence or continue earthworks if weather conditions are deemed unsuitable, e.g. strong winds creating visible dust plumes, and dust suppression methods are unsuccessful.				
	92.	Sweep roads at site entrance and exit points regularly, to prevent the spread of mud / dust by construction vehicles onto public roads.				
	93.	Rehabilitate / revegetate exposed areas as soon as works are completed. Consider using hydro-seeding, ground-covering mesh, etc. to facilitate revegetation.				
	94.	If cleared areas cannot be rehabilitated immediately, use temporary grassing, jute mesh or straw mulching to prevent dust generation (soil cover must be made of breathable material).				
	95.	Obtain written permission from CoCT and Airports Company South Africa prior to controlled burning.	• Contractor	• Duration of construction activities	• Keep record of incidences and complaints	• Permission from CoCT • Permission from Airports Company South Africa • Complaints about smoke during controlled burns
	96.	Avoid controlled burning during periods of strong winds blowing towards the closest communities.				
	97.	Shape and grade construction roads to prevent excessive wearing of the road surface and consequent dust generation.	• Contractor	• Duration of construction activities if above	• Visual inspections	• Visibility of dust coming off construction site
	98.	Apply chemical dust suppressants on access roads if wet suppression does not provide the desired results.				

Construction Phase Measures						
Aspect	ID	Mitigation measure / Procedure	Responsible	Implementation Timeframe	Monitoring Methods ¹	Performance Indicators
	99.	Consider paving all permanent roads on site should alternative dust suppression methods be unsuccessful.		mitigation measures are insufficient		- Number of days that dust plumes are visible - Number of registered complaints
	100.	Consider installing wind speed reduction screens where required to manage high levels of dust.				
Traffic Management	101.	Manage construction sites and activities so as to minimise impacts on road traffic as far as possible, e.g.: - Attempt to arrange delivery of materials when it will least disrupt traffic; - Stagger deliveries if possible rather than concentrating them during "rush" hours; and - Keep construction materials and machinery at the construction site throughout the construction period, where possible.	Contractor	Duration of construction activities	- Keep record of vehicles entering the site and time they enter - Keep record of incidences and complaints - Visually inspect vehicles for any obvious faults or overloading	- Number of incidences and complaints - Condition of vehicles
	102.	Use appropriate road signage, in accordance with the South African Traffic Safety Manual, providing flagmen, barriers etc. at the various access points when necessary.				
	103.	Ensure that large construction vehicles are suitably marked to be visible to other road users and pedestrians.				
	104.	Ensure that all safety measures are observed and that drivers comply with the rules of the road.				
	105.	Ensure that vehicle axle loads do not exceed the technical design capacity of roads utilised by the project.				
	106.	Investigate and respond to complaints about traffic.				
Visual Aspects	107.	Implement an effective dust suppression/control management programme, such as regular wetting and/or chemical suppressants to reduce dust generation.	Contractor	Duration of construction activities	- Visual inspections - Programme for earthworks	- Visibility of dust coming off construction site - Number of registered complaints - Litter on site
	108.	Limit exposed areas (removal of vegetation) to the site. Rehabilitate disturbed areas incrementally and as soon as possible, not necessarily waiting until the end of the Construction Phase.				
	109.	Control litter and keep the construction site as clean and neat as possible.				
	110.	Consolidate the footprint of the construction camp to a functional minimum.				
	111.	Phase bulk earthwork activities (from west to east) to maintain the natural topography along Symphony Way as long as possible to act as natural visual screening to residents of Delft and Delft South.				

Construction Phase Measures						
Aspect	ID	Mitigation measure / Procedure	Responsible	Implementation Timeframe	Monitoring Methods ¹	Performance Indicators
Fire Control	112.	No fires are permitted on site except in areas approved by the ECO in consultation with Airports Company South Africa. Any such areas are to be situated as far as possible from vegetated areas, flammable material stores, etc.	Contractor	Duration of construction activities	- Visual inspections - Inspect attendance register for training sessions - Inspect fire extinguishers and certificates	Designated area for fires and smoking - Number of fire incidents - Certified fire-fighting equipment in appropriate locations - Fire Officer appointed
	113.	Ensure that no smoking is permitted on the site except for within a designated area in the site camp (to be included in the site camp Method Statement). Suitable firefighting equipment must be readily available in this area.				
	114.	Appoint a fire officer who shall be responsible for co-ordinating emergency response in the event of a fire.				
	115.	Ensure that all personnel on site are aware of the location of firefighting equipment on the site and how the equipment is operated.				
	116.	Suitably maintain firefighting equipment.				
Ablution Facilities	117.	Provide ablution facilities (i.e. chemical toilets) for all site staff at a ratio of 1 toilet per 15 workers (absolute minimum 1:25).	Contractor	Duration of construction activities	- Visual inspections - Records of waste disposal	- Suitable ablution facilities in place - Number of incidents of staff not using facilities - Number of pollution incidents
	118.	Secure all temporary / portable toilets to the ground within the site camp to the satisfaction of the RE/ECO to prevent them toppling due to wind or any other cause.				
	119.	Maintain toilets in a hygienic state (i.e. toilet paper to be provided, toilets to be cleaned and serviced regularly (at least "twice-monthly" by an appropriate waste contractor), and toilets to be emptied before long weekends and builders' holidays). The waste shall be disposed at a licensed waste disposal facility.				
	120.	Ensure that no spillages occur when the toilets are cleaned or emptied. Repeated incidents of spillage of chemicals and or waste (i.e. more than one incident), will require toilets to be placed on a solid base with a sump.				
	121.	Urination or defecation on site, other than at the designated ablution facilities, is strictly prohibited.				

Construction Phase Measures						
Aspect	ID	Mitigation measure / Procedure	Responsible	Implementation Timeframe	Monitoring Methods ¹	Performance Indicators
Environmental awareness training	122.	Provide environmental awareness training to all personnel on site. Training should include discussion of: - Potential impact of construction activities on the environment, on airport operations and on surrounding receptors; - The need to minimise such impacts to retain a 'social licence to operate'; - Key measures in the EMP relevant to worker's activities; - How incidences and suggestions for improvement can be reported; and - Response to environmental pollution. Ensure that all attendees remain for the duration of the training and on completion sign an attendance register that clearly indicates participants' names.	• Contractor	• Regularly, for the duration of construction activities • At regular toolbox talks • When new personnel come on site	• Monitor records of such training	• Training records • Awareness of staff • Compliance with EMP
	123.	Provide regular environmental awareness training during normal working hours, e.g. in toolbox talks.				
Response to Environmental Pollution	124.	In the event of environmental pollution, e.g. through spillages, immediately stop the activity causing the problem.	• Contractors	• Duration of construction activities	• Maintain register of pollution events and response. • Following resumption of activities, frequently inspect repaired equipment to ensure proper functioning.	• Number of incidents • Number of recurring incidents • Availability and completeness of register
	125.	Only resume activity once the problem has been stopped or (in the case of spillages) the pollutant can be captured.				
	126.	Repair faulty equipment as soon as possible.				
	127.	Install additional bunding / containment structures around the equipment that was the source of the leak / spillage to prevent pollution of surrounding environment.				
	128.	Treat hydrocarbon spills, e.g. during refuelling, with adequate absorbent material, which then needs to be disposed of at a hazardous landfill.				
	129.	Notify Airports Company South Africa and the relevant authorities within one day of a major environmental pollution event.				
Closure and Rehabilitation	130.	Revegetate disturbed areas with grass species which are unpalatable to birds and small mammals and indigenous to the region if possible.	• Contractor	• Once construction is complete • Duration of construction activities if it takes place in phases / different areas sequentially	• Visual inspections • Keep record of rehabilitation measures	• Records of waste disposal • State of areas on and surrounding the site
	131.	Stabilise slopes disturbed / cleared for construction with geofabric or another appropriate erosion stabilisation technique to prevent erosion.				
	132.	Remove all construction equipment, vehicles, equipment, waste and surplus materials, site office facilities, temporary fencing and other items from the site.				

Construction Phase Measures						
Aspect	ID	Mitigation measure / Procedure	Responsible	Implementation Timeframe	Monitoring Methods ¹	Performance Indicators
	133.	Clean up and remove any spills and contaminated soil in the appropriate manner.				
	134.	Do not bury discarded materials on site or on any other land not designated for this purpose.				
	135.	Rehabilitate affected areas on the site as soon as construction activities in the relevant area are completed, rather than undertaking all rehabilitation at the end of the contract period.				
	136.	Rehabilitate areas adjacent to the site (if disturbance is unavoidable) to at least the same condition as was present prior to construction.				
	137.	Use harvested topsoil for rehabilitation.				

4 Measures Applicable to the Operations Phase

4.1 Roles and Responsibilities

The key role players during the Operations Phase of the Project are:

- Airports Company South Africa (the proponent); and
- Contractors responsible for maintenance at the airport.

Key roles and responsibilities during the Operations Phase with respect to the implementation of the EMP are outlined below.

General Manager (Airports Company South Africa):

- Ensure that all relevant managers are aware of the requirements of the EMP;
- Ensure that copies of the EMP are available at Airports Company South Africa offices at Cape Town International Airport;
- Review monthly reports on environmental performance of their operations;
- Ensure sufficient resources are made available to implement the requirements of the EMP;
- Implement and manage a programme of environmental inspection, monitoring and reporting;
- Implement a programme for follow-up and analysis of all environmental incidents or accidents; and

Environmental Representative (Airports Company South Africa):

- Check compliance with the applicable environmental commitments, procedures, restrictions and guidance specified in the EMP;
- Ensure that all supervisors and workers are familiar with and understand the requirements of the EMP that are relevant to their activities;
- Conduct environmental inspections, monitoring and reporting, as stipulated by Airports Company South Africa and in line with the EMP;
- Ensure that all environmental incidents or accidents are investigated and analysed, and that measures are implemented to prevent similar events from happening in the future;
- Review the environmental performance of contractors and service providers; and
- Compile monthly reports on environmental performance for submission to the General Manager.

Contractors and Service Providers:

- Comply with the applicable environmental commitments, procedures, restrictions and guidance specified in the EMP;
- Co-operate fully in implementing applicable environmental procedures;
- Ensure that all personnel on site, (including any sub-contractors and their staff) are familiar with and understand the requirements of the EMP relevant to their activities; and
- Ensure that any problems and non-conformances are remedied in a timely manner, to the satisfaction of the relevant management personnel at Airports Company South Africa.

4.2 Airports Company South Africa Environmental Procedures

Airports Company South Africa is committed to implementing and maintaining an Environmental Management System extending across all buildings, infrastructure and geographical areas within which Airports Company South Africa operates its aeronautical business. All Airports Company South Africa's departments are required to adhere to a number of environmental procedures relating to:

- Waste Management;
- Hazardous Substances Management;
- Spills and Oil Management;
- Wastewater Management;
- Washing, Refuelling and Maintenance of Equipment and Vehicles;
- Control of Invader Species; and
- Maintenance Contractors.

The Project will be operated and managed within the scope of these management procedures as well as according to project-specific management measures provided in Table 4-1. Where applicable, the existing management procedures for Cape Town International Airport will be updated to include relevant environmental management measures listed below.

4.3 Environmental Management Measures

The environmental management and mitigation measures that must be implemented during the Operations Phase, as well as responsibilities and timelines for the implementation of these measures, are laid out in Table 4-1 below.

Table 4-1: Environmental management and mitigation measures that must be implemented during the Operations Phase

Operations Phase Measures						
Aspect	ID	Mitigation measure / Procedure	Responsible	Implementation Timeframe	Monitoring Methods	Performance Indicators
<u>Environmental Documentation</u>	1.	<u>Keep the following documentation on site and make the documentation available for inspection to any relevant and competent authorities upon request:</u> - <u>Licences and permits;</u> - <u>EMP;</u> - <u>Environmental audit reports; and</u> - <u>Monitoring reports.</u>	• Airports Company South Africa	• <u>Throughout operations</u>	• <u>Visual inspections</u>	• <u>Documentation on site</u>
	2.	<u>Notify the Director: Compliance Monitoring (DEA) in writing and within 48 hours if any condition of the authorisation cannot be or is not adhered to.</u>	• Airports Company South Africa	• <u>Throughout operations</u>	• -	• <u>Written notification submitted to DEA</u>
Environmental Management Procedures	3.	Update the existing management procedures to incorporate the project-specific management measures. Develop additional management procedures if necessary.	• Airports Company South Africa	• Prior to the commissioning of Runway 18-36	• Airports Company South Africa to confirm inclusion of project-specific management measures on acceptance of procedures	• Updated environmental management procedures
Vegetation and Fauna Management	4.	Avoid insect infestations at the airport by spraying or managing habitats that may attract insects as necessary (to minimise the attraction of birds and bats to the area), in line with the Wildlife Management Plan.	• Airports Company South Africa	• Throughout operations	• Visual inspections	• Occurrences of insect infestations
	5.	If required, sweep the airport apron of insects in the early morning as insects are attracted to the apron lights and may attract animals to the area.	• Airports Company South Africa			
	6.	Assess the risk of bat strikes, and if necessary: - avoid using lighting wavelengths at the airport that attract insects; - prevent the re-establishment of bushes, shrubs and trees within the site; and - prevent bats from taking shelter in buildings by installing exclusion measures.	• Airports Company South Africa			
	7.	Prevent birds and bats from taking shelter in Airports Company South Africa buildings and hangars by installing anti-perching spikes, netting and panelling on ledges and in holes in buildings where appropriate.	• Airports Company South Africa		• Visual inspections of infrastructure	• Number of birds at the airport
	8.	Remove nests encountered at the airport to reduce problem bird populations.	• Airports Company South Africa			

Operations Phase Measures						
Aspect	ID	Mitigation measure / Procedure	Responsible	Implementation Timeframe	Monitoring Methods	Performance Indicators
	9.	Maintain grass height on the airport property as per the Airport Wildlife Management Plan and remove cut grass after mowing.	• Airports Company South Africa		• Mowing schedule • Visual inspection of grass areas	• Presence of animals on airport property
	10.	Limit pooling water on the airport property as far as possible to deter birds and insects from the airport property.	• Airports Company South Africa		• Visual inspections after rainfall	• Presence of standing water • Presence of birds on airport property
	11.	Use dispersal techniques such as scaring, sirens, pyrotechnics, distress calls, predator models and border collies to deter animals from the airport property.	• Airports Company South Africa		• Visual inspections	• Presence of animals on airport property
	12.	Rescue and relocate animals unable to migrate from the airport to suitable areas off site (e.g. Driftsands Nature Reserve). - Rescue and relocate individuals of <i>Bathyrgerus suillus</i> (Cape dune mole rat) encountered on site to surrounding open veld areas. - A suitably qualified professional must endorse rescue and relocation procedures of wild fauna.	• Airports Company South Africa		• Visual inspections • Appointment of specialist • Keep record of permits and relocated animals	• Permits on file • Presence of animals on airport property
	13.	Maintain mole proof fencing along the airport boundary to prevent <i>Bathyrgerus suillus</i> (Cape dune mole rat) from entering the airport property.	• Airports Company South Africa		• Maintenance schedule • Visual inspections	• Presence of <i>Bathyrgerus suillus</i> on airport property
	14.	Remove alien plants and weed species from the airport property to comply with the Conservation of Agricultural Resources Act 43 of 1983.	• Airports Company South Africa		• Maintenance schedule • Visual inspections	• Removal of alien vegetation
	15.	<i>Use indigenous vegetation to landscape gardens surrounding any current buildings and future buildings which are to be developed.</i>	• Airports Company South Africa		• Visual inspections	• Only indigenous vegetation used on airport property
Air Emissions	16.	Investigate and, where possible, implement the following recommendations for the reduction in air emissions and provide evidence to the authorities that the recommended measures to mitigate air emissions were investigated, and why they are not considered feasible, where applicable:	• Airports Company South Africa, Airlines, Air Traffic Navigation Services (ATNS)	• Throughout operations	• Communication with airlines • Reports to airport stakeholders, authorities and the public	• Proof of communication with airlines and/or ATNS • Proof of implementation or motivation for not implementing

Operations Phase Measures						
Aspect	ID	Mitigation measure / Procedure	Responsible	Implementation Timeframe	Monitoring Methods	Performance Indicators
	17.	- Encourage pilots to shut down as many engines as possible when idling and taxiing, thus reducing both air pollution and fuel consumption; - Encourage controllers to limit the length of the course of taxiing, where feasible; - Minimise congestion and therefore the waiting times in aircraft queues by e.g. allowing small aircraft to leave the take-off area earlier, or join up in the middle of the corridor and take-off, while bigger aircraft are lining up for take-off at the beginning of the corridor; - Minimise the waiting time for aircraft parking as far as possible; - Encourage a program for the active conversion of vehicle fleets and other aircraft-serving equipment to newer "cleaner" technology, as well as utilisation of alternative, less polluting fuels with emission reduction targets; - Use battery powered ground support vehicles and luggage handling vehicles where possible; - Investigate the reduction of reverse thrust use during landing, reducing both noise and aircraft engine emissions; and - Introduce measures and policies to reduce high levels of car dependency by staff and encourage the use of public transport to and from the airport.				
Noise Management	18.	Establish and maintain effective communication channels with the public e.g. social media and internet systems that provide information on incoming and outgoing flights and their evolving noise footprints.	• Airports Company South Africa	• Throughout operations	• Complaints register • Noise Monitoring Reports • Real-time noise monitoring system • Appointment of noise specialist	• Availability of register • Designated person/department to maintain register • Designated person/department to undertake monitoring • Complaints followed up and closed out • Records of communication with stakeholders • Communication with CoCT
	19.	Maintain a noise complaints register (Grievance Mechanism) for all complaints. The register must list: - Complainant name and contact details; - Date complaint was lodged; - Person who recorded the complaint; - Nature of the complaint; - Actions taken to investigate the complaint and outcome of the investigation; - Action taken to remedy the situation; and - Date on which feedback was provided to complainant. Communicate the Grievance Management Procedure to stakeholders on a regular basis.				
	20.	Implement noise monitoring plan and report on noise and corrective actions (see Section 5).				

Operations Phase Measures						
Aspect	ID	Mitigation measure / Procedure	Responsible	Implementation Timeframe	Monitoring Methods	Performance Indicators
	21.	Link the existing noise complaints registry to the noise monitoring system and implement a system to correlate complaints with the actual measured levels and aircraft-related operational data. Incorporate complaints (and responses) in the quarterly report to the authorities.				
	22.	Appoint a noise specialist to model anticipated airport related noise every 5 years, taking into account actual noise levels (established through the monitoring programme), changes in technology and any mitigation measures implemented.				
	23.	Provide the CoCT with updated noise contours to inform land use planning.				
	24.	Broaden the database of CoCT stakeholders who receive updated information about the noise contours, and ensure that they are regularly updated and informed of changes.				
	25.	Where possible, implement noise preferential routes to assist aircraft in avoiding noise-sensitive areas on departure and arrival.	Airports Company South Africa, ATNS, Airlines	Throughout operations	- Internal Audit - Noise monitoring - Quarterly noise results - Communication with CoCT - Communication with national government	- Implementation Plan/procedures - Number of noise complaints received - Constitution and minutes of noise monitoring committee
	26.	Use specific take-off and approach procedures (such as Continuous Descent Operations, or steeper landing trajectories) to minimise and optimise the distribution of noise on the ground.				
	27.	Implement a shorter and steeper descent profile of 3.2 degrees, allowing aircraft to fly at higher altitudes for longer before descending to land.				
	28.	Implement Noise Abatement Departure Procedure (NADP) 2, unless it can be shown that another NADP will reduce noise impacts more and will be implemented.				
	29.	Restrict the use of reverse thrust for landing between 22:00 and 06:00 unless required for safety reasons.				
	30.	Restrict the use of engine ground run-ups between 22:00 and 06:00 unless required for safety reasons.				
	31.	Restrict take-offs from the runway intersection between 22:00 and 06:00, forcing aircraft to make use of the entire runway, enabling them to reach higher altitudes more quickly.				
	32.	Formally engage with the City of Cape Town and/or relevant departments of the Provincial Government to encourage airport-compatible land use planning around the airport.				
	33.	Establish a noise monitoring committee to monitor the effect of mitigation measures and to facilitate the realisation of the Joint Statement of Intent.				

Operations Phase Measures						
Aspect	ID	Mitigation measure / Procedure	Responsible	Implementation Timeframe	Monitoring Methods	Performance Indicators
	34.	<i>Investigate the use of preferential runways as a means of reducing noise; for example, encourage the take-off on Runway 18, as the flight paths pass over large areas with no population. However, caution should be exercised, as some of the adjacent areas towards the south are densely populated</i>				
	35.	<i>Investigate, and if feasible, implement a displaced threshold i.e. moving the point at which aircraft land on the runway (threshold) further along the runway length, allowing aircraft to approach at a higher altitude</i>				
	36.	<i>Establish and promote a noise compliance framework for Cape Town International Airport.</i>				
	37.	<i>Consider noise insulation where practically feasible for community facilities (schools and hospitals) that will experience increased levels of noise above guideline levels within the ambit of the Joint Statement of Intent, together with Industry, the Department of Transport, and local authority.</i>				
Stormwater Management	38.	Ensure that runoff drains from the operations area without overflowing drainage systems.	Airports Company South Africa	Throughout operations	Visually inspect stormwater system	Visible pollution of stormwater
	39.	Curtail sheet runoff from paved surfaces and access roads.				
	40.	Attenuate stormwater in order to prevent erosion.				
	41.	Maintain stormwater infrastructure.				
	42.	Regularly inspect all Airports Company South Africa vehicles for leaks. Re-fuelling must take place in a designated area or off site.				
	43.	Immediately clean up and treat spills and pollution accordingly to minimise the potential of further polluting stormwater.				
	44.	Use energy dissipating structures (e.g. gabions) at stormwater discharge points from the operations area into existing stormwater infrastructure.				
	45.	Keep the operational area clean to minimise the potential of polluting stormwater.				
Visual Aspects	46.	Keep all areas neat, clean and organised in order to portray a general tidy appearance.	Airports Company South Africa	Throughout operations	Visually inspect airport property	- Presence of litter, rubble, stockpiles etc. - Regular vegetation maintenance

Operations Phase Measures						
Aspect	ID	Mitigation measure / Procedure	Responsible	Implementation Timeframe	Monitoring Methods	Performance Indicators
Economic Development	47.	Comply with all relevant South African employment legislation.	• Airports Company South Africa	• Throughout operations	• -	• Development around the airport
	48.	Prioritise the employment of local people with appropriate skills.				• Local employment targets met
	49.	<i>Establish a working group with the relevant CoCT authorities to discuss land use planning in the areas surrounding the airport.</i>				• <i>Clear objectives for working group</i> • <i>Records of meetings and discussions</i>
<u>Hazardous Materials</u>	50.	<u>Develop (or adapt and implement) procedures for the safe transport, handling and storage of potential pollutants.</u>	• <u>Airports Company South Africa</u>	• <u>Throughout operations</u>	• <u>Visual inspections</u>	• <u>Management and monitoring procedures</u>
	51.	<u>Develop (or adapt and implement) a monitoring procedure for the identification of spills and/or leaks.</u>				• <u>MSDS on site</u> • <u>Register of hazardous substances on site</u> • <u>Suitable storage facility in place</u> • <u>No disposal on site</u>

5 Monitoring

The objective of implementing an inspection and monitoring programme is to ensure long-term compliance with mitigation measures, approved plans and permit conditions. The monitoring programme also provides transparent assurance to Airports Company South Africa (and external parties) that specified standards are being set so as to reduce (negative) impacts to tolerable levels, and that target performance levels are being met.

The inspection and monitoring programme must be designed to measure environmental performance against applicable standards, guidelines and expectations, and to provide early detection of undesirable impacts to the environment. Such information is used to ensure that project standards are being met, and to demonstrate compliance with regulatory requirements. The monitoring programme is amended as and when necessary in order to ensure safe operation and optimal environmental protection.

Airports Company South Africa will be responsible for the collection and monitoring of environmental data during the Construction Phase and Operations Phase.

Monitoring should commence prior to the commencement of construction activities to establish an adequate baseline against which impacts of construction activities can be monitored. Monitoring will continue throughout the Construction and Operations Phases, and the duration and frequency of monitoring may be modified to best characterise any affected environmental aspect. Monitoring Plans / Programmes required during the Construction and Operations Phases are indicated in Table 5-1.

Table 5-1: Monitoring

Monitoring						
Aspect	ID	Mitigation measure / Procedure	Responsible	Implementation Timeframe	Monitoring Methods	Performance Indicators
Construction Phase						
Air Quality Monitoring	1.	Install seven dust monitoring points (to be determined in consultation with the relevant authorities), including the existing permanent air quality monitoring station (MP 01), as indicated in Appendix C.	• Airports Company South Africa	• Prior to construction	• Keep records of measurement times and results • Review reports for adequacy of monitoring and results • Authorities to monitor compliance	• Regular sampling, no gaps • Regular reporting
	2.	Operate the monitoring stations in an accredited manner adhering to recognised quality assurance methods and run by a competent entity.		Throughout construction		
	3.	Undertake dust deposition and PM ₁₀ monitoring in accordance with the National Dust Control Regulations.		• Monthly		
	4.	Set performance targets: - Maximum total daily dust outfall (calculated from the monthly dust fallout) of less than 600 mg/m ² /day for residential areas; - Maximum annual average dust fallout of less than 1,200 mg/m ² /day within the airport site.		• -		
	5.	Submit quarterly report to the CoCT Air Quality Management Unit and the South African Air Quality Information System unless results indicate dust levels exceeding the performance targets for residential areas, in which case this should be reported immediately and appropriate mitigation measures identified. Data must be made available in the event of public complaints or to DEA&DP if requested.		• Quarterly		
Noise Monitoring	6.	Install three noise monitoring points, located inside the airport boundary at the locations in the region of the points indicated in Appendix D.	• Airports Company South Africa	• Prior to construction	• Keep records of measurement times and results • Review reports for adequacy of monitoring and results • Authorities to monitor compliance	• Regular sampling, no gaps • Regular reporting
	7.	Undertake noise monitoring using methods in accordance with the SANS 10103:2008 Code of Practice and the Western Cape Noise Control Regulations.		• Quarterly during construction • Monthly during night construction		
	8.	Submit quarterly reports to the local authorities providing construction-specific noise levels compared to baseline noise levels and SANS District Guidelines.		• Quarterly		
	9.	In the event of noise guideline exceedances, implement appropriate site- and operation-specific noise mitigation measures.		• Immediately as required		
Operations Phase						
Air Quality Monitoring	10.	Continue monitoring SO ₂ , NO ₂ , O ₃ , CO and PM ₁₀ at the existing monitoring point.	• Airports Company South Africa	• Continuously during operations		

Monitoring						
Aspect	ID	Mitigation measure / Procedure	Responsible	Implementation Timeframe	Monitoring Methods	Performance Indicators
	11.	Submit quarterly reports to the local authorities and South African Air Quality Information Systems		Quarterly	- Keep records of measurement times and results - Review reports for adequacy of monitoring and results - Authorities to monitor compliance	- Regular sampling, no gaps - Regular reporting
Noise Monitoring	12.	Monitor noise at the eight existing monitoring locations around the airport until commencement of the operation of Runway 18-36.	Airports Company South Africa	Prior to commissioning of runway	- Keep records of measurement results - Review reports for adequacy of monitoring and results - Authorities to monitor compliance	- Regular sampling, no gaps - Regular reporting
	13.	Where necessary, relocate existing noise monitors to cover newly affected areas due to changes in flight paths.		Continuously during operations		
	14.	Submit quarterly noise monitoring reports to the local authorities including: 24-hour equivalent continuous A-weighted sound pressure level, $L_{Aeq,T}$; - Equivalent continuous day-night rating level, L_{Rdn}; - Equivalent continuous day and night rating levels, L_{Rd} and L_{Rn}; - Maximum A-weighted level, L_{Amax}; - Percentile levels L_n; - Number of noise events above 70 dB(A) and 60 dB(A) of the L_{Amax} and Sound Exposure Level; - Report aircraft related infringements and record aircraft type and operator; <i>Noise complaints received and responses</i>; and - Records of aircraft movements, aircraft types, cargo movements, new routes scheduled, runway split of aircraft movement, day/night ratio of movements and average hourly movements.		Quarterly		

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Sharon Jones

Principal Environmental Consultant

Reviewed by

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Chris Dalgliesh

Partner

Appendix A:

Method Statement Pro Forma

METHOD STATEMENT PRO FORMA

CONTRACT:.....

DATE:.....

PROPOSED ACTIVITY (give title of method statement):

WHAT WORK IS TO BE UNDERTAKEN (give a brief description of the works):

WHERE ARE THE WORKS TO BE UNDERTAKEN (where possible, provide an annotated plan and a full description of the extent of the works):

--

START AND END DATE OF WORKS FOR WHICH METHOD STATEMENT IS REQUIRED:

Start Date:

End Date:

--

HOW ARE THE WORKS TO BE UNDERTAKEN (provide as much detail as possible, including annotated maps and plans where possible):

Note: please attach extra pages if more space is required

Appendix B:

Declaration by Parties

[Proponent]

I, _____, representing [Proponent], record as follows:

I/we have read and understood this Environmental Management Programme.

I am aware of [Proponent's] responsibilities in terms of complying with, enforcing and implementing the provisions of the Environmental Management Programme and all of its constituent documents.

I undertake to comply with those requirements of the applicable environmental laws, approvals and obligations arising out of the Environmental Management Programme in the discharging of my obligations.

Signed: _____ Name: _____

Position: _____ Date: _____

[Contractor]

I/we, _____ record as follows:

I/ we, the undersigned, do hereby declare that I/ we am/ are aware of the requirement by [Proponent] that construction activities will be carried out with due regard to their impact on the environment.

In view of this requirement, I/ we will, in addition to complying with the letter of the terms of the Contract dealing with protection of the environment, also take into consideration the spirit of such requirements and will, in selecting appropriate sub-contractors, employees, plant, materials and methods of construction, in-so-far as I/ we have the choice, include in the analysis not only the technical and economic (both financial and with regard to time) aspects but also the impact on the environment of the options. In this regard, I/ we recognise and accept the need to abide by the "precautionary principle" which aims to ensure the protection of the environment by the adoption of the most environmentally sensitive construction approach in the face of uncertainty with regard to the environmental implications of construction.

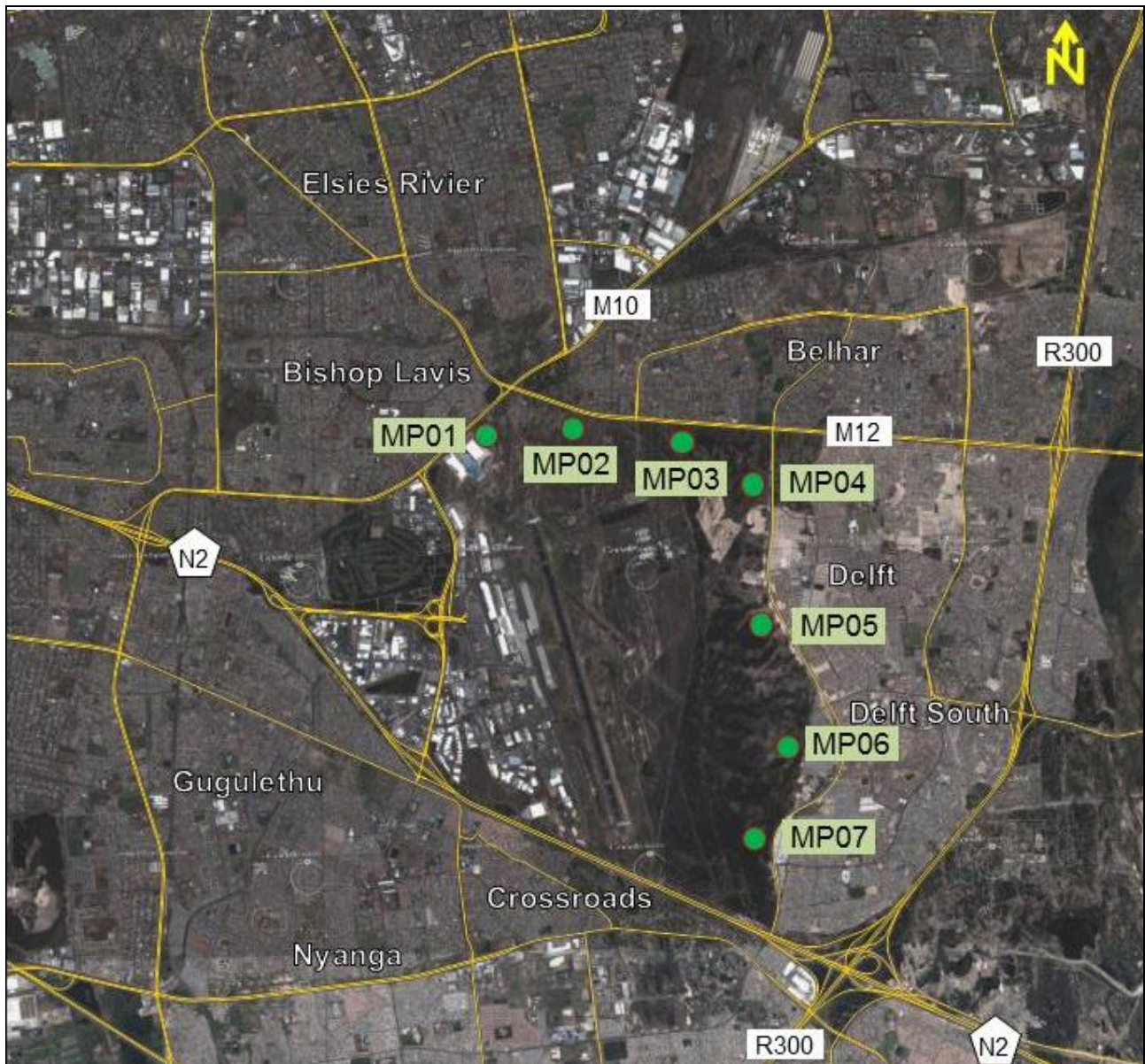
I/we have signed the Declaration of Understanding with respect to the Environmental Management Programme.

Signed: _____ Date: _____

[Contractor]

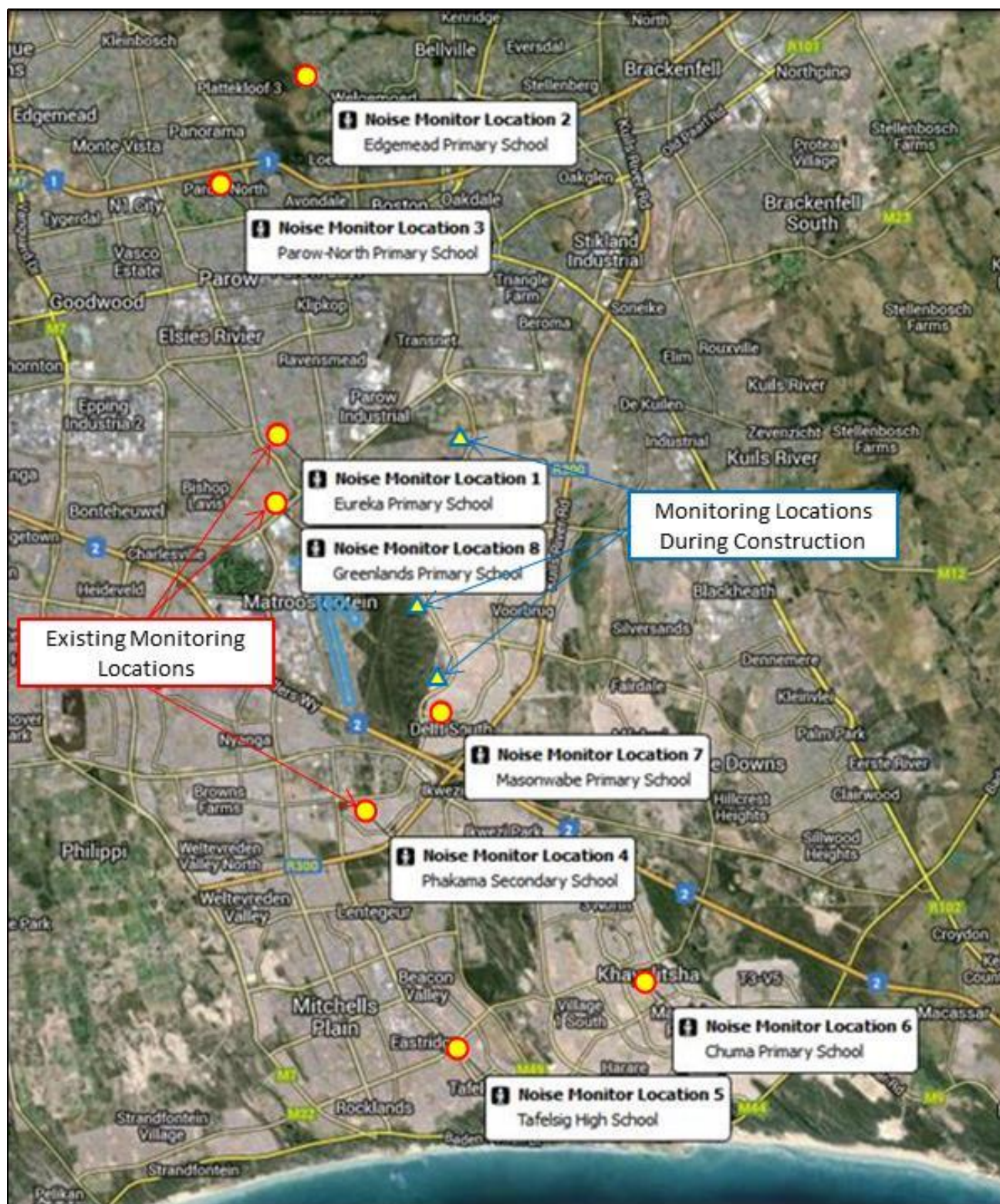
Appendix C:

Dust Monitoring Points



Appendix D:

Noise Monitoring Points



NOISE IMPACT ASSESSMENT FOR THE PROPOSED RUNWAY RE-ALIGNMENT AT THE CAPE TOWN INTERNATIONAL AIRPORT



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