CIVIL AVIATION SENSITIVITY VERIFICATION REPORT FOR A PROPOSED 125MEGAWATT SOLAR PHOTOVOLTAIC POWER GENERATION FACILITY AT THE KOLOMELA MINE, POSTMASBURG

PRESENTED BY

DRAFT 2

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03				

Core Review Team

NAME	DESIGNATION	COMPANY
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GLOSSARY OF TERMS AND ACRONYMS

This report makes frequent use of acronyms and terminology unique to the aviation industry and consistent with standard definitions applied by the International Civil Aviation Authority, a glossary of such terminology and definitions is presented below.

TERM	ACRONYM	DEFINITION
Aircraft Classification Number	ACN	An indication of runway pavement strength requirements of aircraft, which must match the corresponding Pavement Classification Number (PCN) of the runway.
Aerodrome Directory	AD	A standard publication issued from time to time by the South African Civil Aviation Authority recording the known technical status of aerodromes registered but not necessarily licensed by the Authority.
Airfield Ground Lighting	AGL	Lighting systems on runways, taxiways and aprons.
Aeronautical Information Publication	AIP	A standard Publication issued by the South African Civil Aviation Authority in which the classification status and technical data of aerodromes licensed by the SACAA is recorded.
Above Mean Sea Level	AMSL	Elevation of a particular topographical feature, referenced to mean sea level.
Air Traffic and Navigational Services Corporation	ATNS	A statutory body (State Owned Enterprise) formed in terms of an Act of Parliament to provide air traffic and navigational service oversight to major airports and airspace management within the Republic of South Africa.
Civil Aviation Regulations	CARS	Regulations published by the South African Civil Aviation Authority in accordance with international standards and recommended practices set by the International Civil Aviation Organisation (ICAO).
Civil Aviation Sensitivity Study	CASS	A Civil Aviation Sensitivity Study required on proposed development sites if the preliminary assessment of the site using the DFFE screening tool indicates a medium or higher sensitivity.
Fire and Rescue classification category	CAT	The minimum fire-fighting and rescue facility requirements at an aerodrome as required in terms of ICAO Annex 14, based generally on aircraft length and passenger cabin diameter.
Civil Aviation Technical Standards	CATS	Technical compliance standards applied by the SACAA, generally in parallel with ICAO Annex 14 requirements but in some cases adapted to local conditions.
Code	CODE	An alpha-numeric code e.g. 2B designating the classification of an aircraft by ICAO based on runway length (numeric code) required at mean sea level at standard temperature conditions for safe operations, and wingspan (alpha code).
Development	Development	The proposed development by Kolomela Mine (part of the Sishen Iron Ore Company) of a 125MW Solar Photovoltaic Power Generation Facility.
EXM	EXM	EXM Environmental Advisory (Pty) Ltd

Conical Surface	CS	An ICAO-defined Obstacle Limitation Surface that (for Code 2 aerodromes) commences at the outer edge of the Inner Horizontal Surface and slopes upwards at a grade of 5 % until a maximum elevation of 55m above the Inner Horizontal Surface.
Department	DFFE	The Department of Forestry, Fisheries and the Environment.
Tommy's Field Aerodrome	FATF	ICAO Abbreviation for Tommy's Field Aerodrome.
Postmasburg Aerodrome	FAPT	ICAO Abbreviation for Postmasburg Aerodrome.
General Aviation	GA	Private, recreational, pilot training and non-scheduled air services.
Global Navigational Satellite System	GNSS	Satellite based aircraft navigational systems relying on GPS technology, regarded by the SACAA as 'non-precision' approaches.
GWI Aviation Advisory	GWI	A specialist division of GWI Africa (Pty) Limited, a consultancy specialising in project and development management of infrastructure and built-environment projects.
International Civil Aviation Organisation	ICAO	The International Civil Aviation Organization, a specialized technical agency of the United Nations. It regulates international civil aviation and air navigation and fosters the planning and development of international air transport to ensure safe and orderly growth.
International Air Transport Association	IATA	The International Air Transport Association, a trade association of the world's airlines. Consisting of 290 airlines, primarily major carriers, representing 117 countries, IATA's member airlines account for approximately 82% of total available seat miles air traffic.
Inner Horizontal Surface	HIS	An ICAO defined Obstacle Limitation Surface that extends (for a Code 2 aerodrome) for a horizontal distance of 2 500m from any point on the runway, at a height of 45m above the maximum ground elevation of the runway.
Megawatt	MW	Unit of power, being 1 million watts.
Notice to Airmen	NOTAM	*Ad hoc* notices or publications issued from time to time by the SACAA, describing temporary conditions or situations at aerodromes that are likely to affect the safety of the operation of aircraft or the operational status of such aerodromes.
Obstacle Limitation Surface	OLS	An imaginary surface in the air that defines, in terms of ICAO standards, a boundary beyond which any land-based obstacles may not 'penetrate', to preserve the safety of aircraft. For different categories of aerodromes and aircraft ICAO document 'Annex 14' defines the requirements for various types of OLS.
Passengers	PAX	Number of passengers.
Performance Based Navigation	PBN	ICAO recommended methodology to improve air traffic management through increased reliance on satellite-based navigation systems and customised flight paths matched to aircraft performance capability, designed to reduce aircraft-based carbon footprint through reduction in approach and 'hold' times of arriving aircraft and reduce reliance on ground-based navigational infrastructure.
Photovoltaic	PV	A (generally) glass-covered panel comprising semiconductor components that generate electrical energy when exposed to sunlight.
Protocol	Protocol	The Protocol (see Appendix C) published by the Department of Forestry, Fisheries and the Environment in Government Notice 320 of March 2020, requiring Environmental

		Practitioners to undertake a Civil Aviation Sensitivity Study to determine or verify the site sensitivity of proposed developments that might adversely impact civil aviation infrastructure, particularly radar installations, located close by.
Reference Field Length	RFL	The runway length required for the safe arrival and departure of a fully-loaded 'critical aircraft' for which a runway is designed, referenced to sea level altitude and standard atmospheric and calm conditions.
Remote Navigation	RNAV	Satellite based navigation systems, substantially equivalent to GNSS.
Runway	RWY	A runway as defined by ICAO is a rectangular area of an aerodrome intended for the take-off and landing of aircraft. RWY's are designated according to their reciprocal approach headings at either threshold. Thus, for RWY 07/25, 07 refers to an approach heading of 70 and 25 to a heading of 250 degrees i.e. the reciprocal of 70 degrees.
South African Civil Aviation Authority	SACAA	The South African Civil Aviation Authority is the South African aviation regulating authority, established by an Act of Parliament to oversee civil aviation activities, licensing of aircraft and pilots and to conduct investigations into aviation accidents and incidents.
Standards and Recommended Practices	SARP's	Technical aviation and compliance standards and recommended practices, as set out by ICAO in various documents and publications, in particular Annex 14.
Safety Health and Environment	SHE	Safety Health and Environment
Sishen Iron Ore Company (Pty) Limited	SIOC	The company that owns and operates the Kolomela Iron Ore Mine near Postmasburg, Northern Cape Province.
Uncontrolled Airspace	UA	A class of air space as defined by ICAO (generally Class F or G) and implemented by ATNS in which no air traffic management or guidance services are available and no radar monitoring capability is provided by ATNS.
Visual Flight Rules	VFR	Visual flight rules are regulations under which a pilot operates an aircraft in weather conditions generally clear enough to allow the pilot navigate visually, within prescribed parameters.
Very-high frequency omnidirectional radio antenna	VOR/DME	Radio antenna that provides position and directional vectoring capability to aircraft. DME is the acronym for 'distance measuring equipment'.
Visual Meteorological Conditions	VMC	Meteorological conditions under which sight distances (per SACAA rules) allow flight operations to proceed under visual flight rules (VFR), without the necessity to resort to instrument procedures (IFR) under Instrument Meteorological Conditions (IMC).

1. EXECUTIVE SUMMARY

Appointment of GWI Aviation Advisory

In March 2020, the Department of Forestry, Fisheries and the Environment (DFFE) published a Protocol that requires Environmental Practitioners (EP's) to assess the environmental impact of proposed developments on nearby civil aviation facilities. While the South African Civil Aviation Authority (SACAA) is primarily concerned with civil aviation safety and security, the DFFE is mandated to ensure the overall environmental compliance of aviation infrastructure and the impact of proposed new developments on existing infrastructure, particularly radar, within distance limits set out in the Protocol. To this end, it has developed a screening tool (Screening Tool) to allow EP's to undertake a preliminary assessment of the potential sensitivity of proposed development sites. If the results of this assessment indicate medium or higher sensitivity, then a specialist Civil Aviation Sensitivity Study (CASS) is necessary to verify or revise the assigned sensitivity level. Should this study assess the sensitivity of proposed site as medium or higher, a Civil Aviation Compliance Statement to the satisfaction of the South African Civil Aviation Authority (SACAA) is then required.

Sishen Iron Ore Company (Pty) Limited (SIOC), part of Kumba Iron Ore Limited (Kumba), owns and operates Kolomela mine located approximately 8 km southwest of Postmasburg in the Tsantsabane Local Municipality, Northern Cape Province. SIOC proposes to develop a 125 Megawatt (MW) Solar Photovoltaic power generation facility (PV Facility) at the Kolomela Mine in the Northern Cape Province and EXM Environmental Advisory (Pty) Ltd (EXM) has been appointed to undertake an environmental impact study for the proposed development.

The distances from the proposed PV facility to the nearby Tommy's Field (FATF) and Postmasburg Municipal airfield (FAPT) are 13,0 and 12,2 km respectively, both less than the applicable 8 - 15 km minimum distance set out in the Protocol.

Power is currently supplied to Kolomela by Eskom, from the Kolomela substation (KSS), located adjacent to the proposed facility. SIOC intends for the proposed PV Facility to reduce its reliance on Eskom and reduce the mine's carbon footprint, in pursuit of SIOC's commitment to move towards carbon neutrality. The proposed facility will be located within the Mining Right Area of Kolomela and will supply power directly to the mine.

By using the DEA Screening Tool, a preliminary assessment conducted by EXM indicated a medium sensitivity. GWI Aviation Advisory (GWI) were thus appointed by EXM to undertake a CASS to verify or revise the EXM sensitivity assessment and to determine whether a Civil Aviation Compliance Statement is required. The scope of the GWI appointment is restricted to the CASS and associated recommendations. Should the CASS conclude that the site sensitivity is medium or higher, it may be necessary to extend GWI's appointment to include the preparation and approval by the SACAA of a Civil Aviation Compliance Statement.

Analysis Scope and Methodology

The analysis conducted by GWI was based on the requirements of the Protocol, but also included an assessment of potential safety impacts of the proposed PV Facility on FATF and FAPT, since these are close by. For this purpose, the analysis included the determination of the Obstacle Limitation and Approach (OLS) surfaces of FATF and FAPT and risk assessment, in accordance with the standards and recommended practices (SARP's) of

the International Civil Aviation Organisation (ICAO). ICAO is represented in South Africa by the SACAA, who also publish their own Civil Aviation Regulations and Technical Standards (CARS and CATS).

Findings

The findings of the CASS are summarized as follows:

- **Radar Installations**:
  There is no evidence of any ground-based civil radar installations closer than 15 km or within the 15-35 km distance limits of the preferred development site, as set out in the Screening Tool.

- **Navigational Infrastructure**:
  There is no evidence of any land-based navigational infrastructure within the same distance limits of the preferred development site; neither are FATF or FAPT equipped with any ground-based navigational infrastructure.

- **Aerodromes**
  There are no major civilian airports within 35 km of the preferred development site; however, FATF and FAPT are respectively approximately 13 km and 12,2 km away (Figure 1). This falls within the 8-15 km distance limit specified in the Screening Tool.

- **Upper-level Air Corridors and Routes**:
  The closest upper-level air corridor or major air service navigation route is 35 km to the west of the preferred development site (Figure 3).

- **Obstacle Limitation Surfaces**:
  - **Approach and Take-off/Climb surfaces**
    The preferred development site falls outside the approach and take-off/climb surfaces of FATF and FAPT (Figure 1) and the PV Facility is therefore expected to contribute minimal additional risk to safe operations at the aerodromes.

  - **Inner Horizontal Surface (IHS)**
    The preferred development site falls outside the IHS footprint of both FATF and FAPT (Figure 1). In any event, PV panel arrays and transmission lines are expected to be below the height limit (45 m) of the IHS and would therefore comply with the provisions of the ICAO SARP's.

  - **Conical Surface (CS)**
    The CS's of both FATF and FAPT are beyond the preferred development site and would not be influenced by the PV Facility.

- **Potential Reflections off Photovoltaic Panels**
  An analysis of the risk that reflections off PV panels might constitute to pilots of approaching aircraft has been undertaken, with the conclusion that minimal likelihood exists that reflections would pose additional

safety risks over the prevailing situation, where the sun itself might on rare occasions be in an unfavourable position relative to approaching aircraft.

Recommendations

It is recommended that the sensitivity level of the preferred PV facility be amended to 'low', in which case no Civil Aviation Compliance Statement will be required.

2. INTRODUCTION

EXM Environmental Advisory (Pty) Ltd (EXM) was appointed by Sishen Iron Ore Company (Pty) Ltd. (SIOC) to undertake an EIA for the proposed development of a 125MW Solar Photovoltaic (PV) Power Generation Facility at their Kolomela Mine (Kolomela) near Postmasburg in the Northern Cape Province.

Sishen Iron Ore Company (Pty) Limited (SIOC), part of Kumba Iron Ore Limited (hereafter Kumba), owns and operates Kolomela mine located approximately 8 km south west of Postmasburg in the Tsantsabane Local Municipality, Northern Cape Province. Power is currently supplied to Kolomela by Eskom, from the Kolomela substation (KSS), located adjacent to the proposed facility. SIOC is intending to develop a 30MW Solar Photovoltaic (PV) Power Generation Facility to reduce its reliance on Eskom and reduce the mine's carbon footprint, in pursuit of SIOC's commitment to move towards carbon neutrality. The proposed facility will be located within the Mining Right Area of Kolomela and will supply power directly to the mine.

Two airfields in the area are potentially affected by the proposed development, being Tommy's Field (FATF) and the Postmasburg Municipal Airfield (FAPT). The position of the preferred alternative 'solar farm' site and its location relative to these aerodromes is illustrated in Figs 1 and 2.

Figure1: Location of Solar Farm relative to nearby Aerodromes (Tommy's Field FATF and Postmasburg FAPT)

Fig 2: Relevant Obstacle Limitation Surfaces for Tommy's Field FATF

The solar power development will comprise pedestal mounted solar PV panels, access and maintenance roads, electrical cables to collect generated power at a central substation for distribution, as well as local power lines supported on suspension structures, to tie the generation facility into the distribution network at the Kolomela sub-station on the Southern corner of the site.

An Environmental Authorisation application is required in terms of the Environmental Impact Assessment Regulations (EIA Regulations, 2017) published in Government Notice (GN) No. 326 of 7 April 2017), in terms of Chapter 5 of the National Environmental Management Act, 1998 (NEMA, No. 108 of 1998).

The EIA Regulations, 2017 provide for control over certain listed activities. These listed activities are detailed in Listing Notice 1 (LN1) (GN No. 327 of 7 April 2017), Listing Notice 2 (LN2) (GN No. 325 of 7 April 2017) and Listing Notice 3 (LN3) (GN No. 324 of 7 April 2017). The undertaking of activities specified in the Listing Notices is prohibited until Environmental Authorisation has been obtained from the competent authority. The main listed activity triggered by the project is LN2 activity number 1: "*The development of facilities or infrastructure for the generation of electricity from a renewable resource where the electricity output is 20 megawatts or more, excluding where such development of facilities or infrastructure is for photovoltaic installations and occurs -(a) within an urban area; or (b) on existing infrastructure*."

In respect of these legal requirements, where a LN2 activity is triggered, the appropriate Environmental Authorisation application process is a Scoping and EIA process. However, the generation facility will be situated within the Springbok Renewable Energy Development Zone (REDZ) 8 as promulgated in terms of GN No. 114 of 16 February 2018 of NEMA. Therefore, based on the gazetted procedure to be followed in applying for Environmental Authorisation for large scale wind and solar PV energy development activities occurring in geographical areas of strategic importance, where the facility triggers LN 2 activity 1 and any other listed and specified activities necessary for the realisation of such facilities, a Basic Assessment process must be followed instead of the full Scoping and EIA process. However, the PV facility is included as part of the overall full EIA and Scoping process for the expansion of Kolomela.

3. CIVIL AVIATION SPECIALIST STUDY REQUIREMENTS

3.1 DFFE PROTOCOL OF MARCH 2020

A '*Protocol for the specialist assessment and minimum report content requirements for environmental impacts on civil aviation installations*' was gazetted by the DFFE as GN No.320 in the Government Gazette 43110 on 20th March 2020. The Protocol is attached as Appendix C.

In terms of the Protocol, the EP is required to undertake an initial review of the subject site, utilizing the Screening Tool developed by the DFFEEFF, to assess the potential impact of the proposed development on adjoining civil aviation installations.

The Screening Tool uses distance as an indicator of sensitivity. If the proposed site is:

1. Between 15 and 35 km from a civil aviation radar, or
2. Between 15 and 35 km from a major civil aviation aerodrome, or
3. Between 8 and 15 km of other civil aviation aerodrome (sic)

then a sensitivity rating of medium or high is assigned, which triggers a CASS.

In terms of the Protocol:

- ***If the outcome of (the Specialist's) site sensitivity verification justifies a sensitivity of medium or higher, then a Civil Aviation Compliance Statement is required***
- ***If the outcome of (the Specialist's) site sensitivity verification indicates low sensitivity then there are no further requirements.***

3.2 INITIAL ASSESSMENT

The preferred development site was assessed by EXM using the DFFE Screening Tool and a medium sensitivity assigned on account of its proximity to FATP and FAPT, which are both within the 8-15 km distance parameters laid out in the Protocol.

Based on this preliminary sensitivity rating, GWI was appointed by EXM to undertake a CASS to verify or adjust the rating. The credentials of GWI and relevant CV's of resources deployed on the study are attached to this report as Appendix A.

If the CASS determines that a Compliance Statement is required, the mandate of GWI may need to be extended to prepare the Compliance Statement and engage with the SACAA to obtain their comments on and approval of the document.

3.3 SPECIALIST STUDY ELEMENTS

The CASS comprised the following elements:

3.3.1 Airspace Analysis

Using the SACAA Aerodrome Directory (AD) and the Aeronautical Information Publication (AIP) information on aerodromes and their license status, airspace classification sourced from the Air Traffic and Navigational Services Corporation (ATNS) and existing topographical data, the preferred development site was overlaid on the airspace classification map of the environs and risks posed to overflying civilian aircraft assessed.

3.3.2 Radar Installation Assessment

Using information available from the SACAA and ATNS, the location of civil aviation radar installations within the guideline distances (per the Protocol) from the proposed facility was determined and the risk posed to the operation of these installations by the proposed facility assessed.

3.3.3 Obstacle Assessment

Using the ICAO SARP's, the relevant OLS's were reviewed and any additional risk to these surfaces presented by the proposed PV facility and associated infrastructure (powerlines, for example) assessed.

3.3.4 Other Potential Impacts

Other potential impacts, for example additional risks to pilot visibility on approaches to the aerodromes, arising from possible solar reflections from the surfaces of PV panels to be erected, were assessed.

Based on the above studies, the sensitivity status of the proposed PV facility was determined and amended.

4. SPECIALIST STUDY OUTPUTS

4.1 AIRFIELD CLASSIFICATION

Based personal observation on site visits, SACAA AD and AIP information, the status of FATF and FAPT are summarised below:

- Both aerodromes are unmanned aerodromes.
- FATF is licensed as a SACAA Category 2 airfield.
- FAPT is currently unlicensed but was previously a Category 1 aerodrome.
- No aerodrome services exist at either i.e. no navigational aids or radar and no runway centreline or airfield lighting.
- Both aerodromes operate under Visual Flight Rules (VFR).
- Tommy's Field RWY 07/25 is 1 460x20m tar-surfaced and classified as ICAO Code 2B since the RFL (reference field length) slightly exceeds 1 200m under optimal conditions.
- Postmasburg RWY 06/24 is 1 200x30m un-surfaced runway, classified as ICAO Code 1B.

4.2 AIRSPACE ANALYSIS AND RADAR ASSESSMENT

From Fig 3, it was determined that:

- There are no civilian radar facilities within 35km of the proposed solar PV site.
- The airspace around FATF and FAPT is uncontrolled.
- The airspace classification of the environs around FATF and FAPT is indicated in Fig 3.
- The closest defined air corridor is an upper-level corridor between Upington and Sishen, located some 60km NW of the proposed site.
- There are no civilian radar facilities at either FATF or FAPT.
- The closest ground-based navigational equipment is a VOR/DME array 'SSV' at Sishen, some 82 km N of the proposed facility.
- There is a zone of restricted airspace for military operations centred around Lohatla Military Base (Airstrip FALH), the closest point of which, the SW corner, is 25km NE of the proposed facility.
- The closest commercial aerodrome is Sishen (FASS), some 82km to the north.

The risk of any impact of the facility on nearby civilian radar installations is thus **low**.

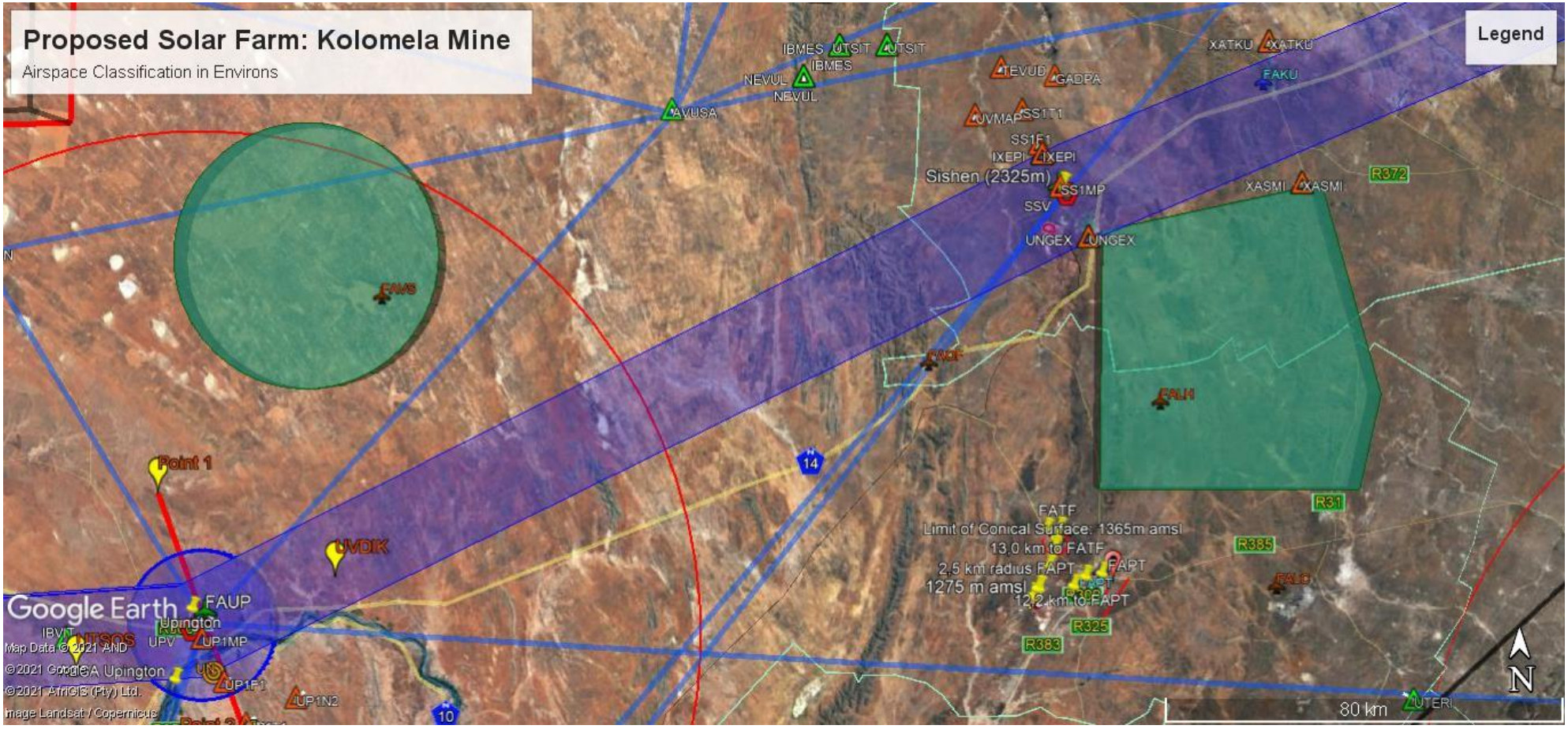


Fig 3: Airspace Classification

4.3 OBSTACLE LIMITATION SURFACES (OLS)

For airport planning purposes, ICAO Annex 14 requires the following OLS's to be determined for aerodromes with non-instrument runways:

- Conical surface
- Inner horizontal surface
- Approach and take-off/climb surfaces
- Transitional surfaces

Since this analysis is for environmental purposes and concerned with the potential impact of the proposed new Solar PV facility on operations at the aerodromes and/or on existing aviation infrastructure in the area, it is limited in scope by the provisions of the Protocol, and is thus based on Figures 2&3, ICAO Annex 14 Table 4.1 and the diagram below, extracted from ICAO Annex 14.

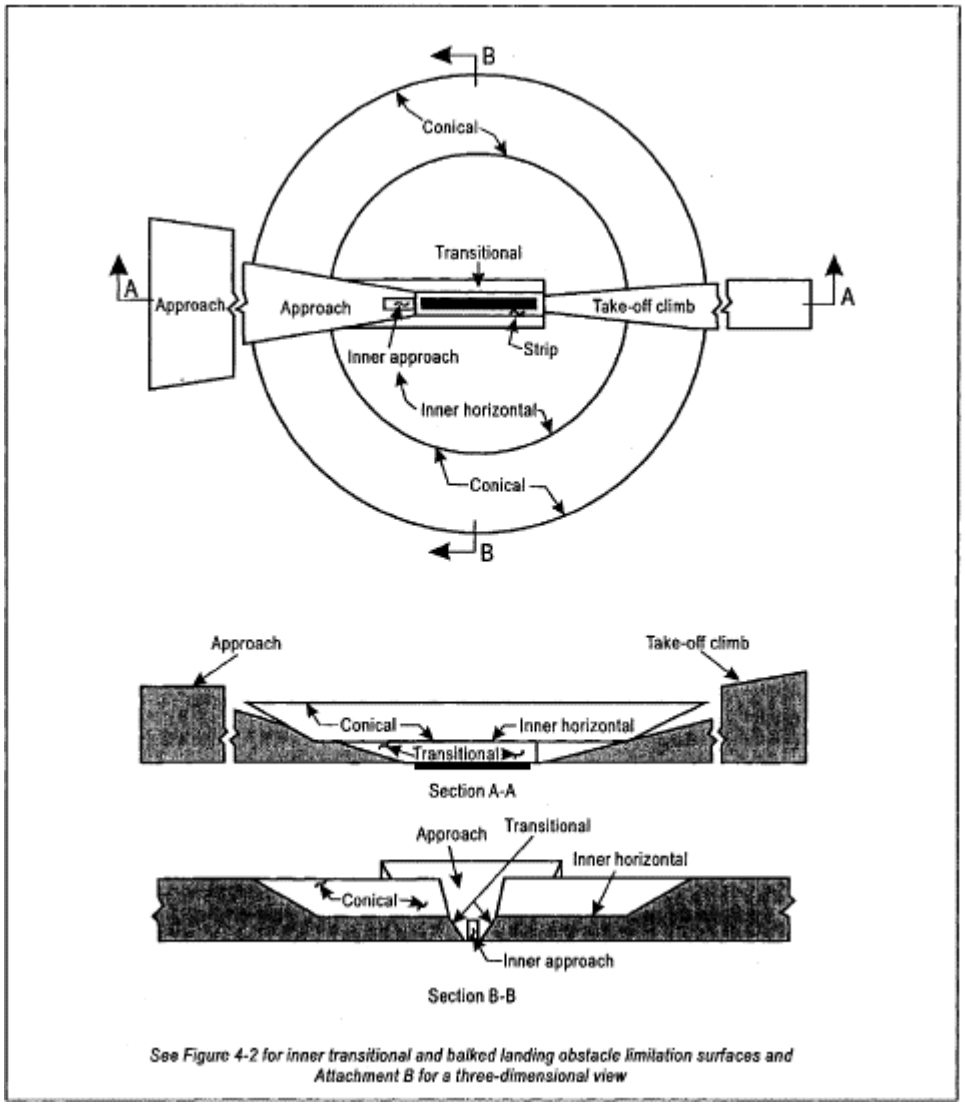


Fig 4: ICAO Obstacle Limitation Surfaces

4.4 INNER HORIZONTAL (IHS) AND CONICAL SURFACE

The IHS for a Code 2 aerodrome is a horizontal surface, 45m above ground level at the highest elevation of the runway and extends outwards, 2 500m from any point on the runway. The conical surface commences beyond the IHS and continues at an upward slope of 5% for another 200m, to a maximum elevation of 55m above the IHS.

The proposed facility is substantially further than 2 500m from both aerodromes and is not affected by either the IHS or conical surface. Thus, there will be no penetration of the conical or inner horizontal surfaces of either FATF or FAPT by any anticipated infrastructure at the proposed facility. In fact, the natural ground level at the closest boundary of the facility to the aerodromes is 1 275m, some 145m below the upper edge of the conical surface, which ends some 9 km away.

The transitional surfaces of the aerodromes are not relevant since the runway alignments are such that the proposed facility does not impact these surfaces. In any event, the distances to the respective thresholds from the proposed facility are over 12 km in both cases.

4.5 APPROACH SURFACES

The ICAO Annex 14 approach surface to RWY 03/21 at FATF is shown on Fig 2. This surface terminates 2 500m from the runway threshold and is also not affected by the proposed facility. The situation at FAPT is similar. Thus, approaches to neither aerodrome will be materially affected by the proposed solar facility and the risk to aircraft operations is therefore **low**.

It is remotely possible that aircraft departing FATF from RWY 21 might overfly the proposed facility, but only if they deviate substantially to the right of the extended centreline. If this does occur for some reason, applying the ICAO standard 4 % climb-out slope for Code 2 aerodromes would mean that aircraft would be at altitude 1 830m amsl by the time they cross the boundary of the facility. This gives a vertical safety margin of 555 m (1820 ft). Conversely, aircraft approaching FATF RWY 03 on a slightly deviated ‘straight-in long-final’ approach and thus overflying the facility, would have a similar safety margin (555m).

It should be noted that the highest structures within or adjacent to the proposed facility (powerlines) are expected to not exceed 20m high - the risk to possible overflying aircraft is thus **low**.

4.6 OTHER POTENTIAL IMPACTS

Solar PV facilities are sometimes associated with the potential for solar reflections, in which the reflected image of the sun on (reflective) PV panels may distract pilots-in-charge (PIC) when the sun is in an unfavourable position relative to the PV array and approaching aircraft. This risk would be in addition to the direct impact of the sun itself and be most severe when both the sun and the reflection of the sun off the PV panels impact simultaneously on pilots.

Given the runway orientations at FATF and FAPT and the long distance of the facility (over 12 km) from the airfields, the potential additional risk to pilot visibility (direct sun and reflections) would generally

be **low**. Two scenarios are considered, on the assumption that the PV panels are orientated northwards, at an angle of 23,5 deg from the horizontal:

Approach to FATF RWY 03 (dominant approach given prevailing winds):

Because the facility will be some distance south and west of FATF and given the '03' runway orientation, there is minimal chance that direct impacts of the sun and reflection off PV panels would affect pilots simultaneously, because the sun azimuth would be too high when the bearing of the sun is the same as the aircraft heading on approach. The additional risk over the *status quo* is therefore **low**.

Reflections from PV panels might possibly occur when aircraft are approaching from the south in the late afternoon when the sun azimuth is low (between 10 and 35 deg), but because of the substantial displacement of the approach heading of aircraft and the bearing of the sun at such times, the only impact is possibly that the aircraft may 'cross' the reflected 'beam' off the PV array at certain approach angles. This will however only happen when the aircraft is still over 13 000 m from the threshold and at altitudes of over 2000 ft, thus constituting **low** risk.

Approach to FAPT RWY 06

Because the facility will be some distance west of FAPT and given the '06' runway orientation, there is minimal chance that direct impacts of the sun and reflection off PV panels would affect pilots simultaneously, for similar reasons to those at FATF, and the additional risk over the *status quo* is therefore **low**.

Reflections off PV panels might possibly occur when aircraft are approaching from the west in the late morning when the sun azimuth is moderate (between 30 and 60 deg), but because of the substantial displacement of the approach heading of aircraft and the bearing of the sun at such times, the only impact is likely to be that the aircraft may 'cross' the reflected beam off the PV array, coming from their left. This will however only happen when the aircraft is over 12 000 m from the threshold and at altitudes of over 2000 ft, thus constituting **low** risk. Early morning and afternoon sun are not likely to create any 'reflection' issues because the combination of solar azimuth and solar bearing relative to aircraft headings on approach would not place the sun in a position to produce reflections.

4.7 RECOMMENDATIONS

In light of the analysis conducted as part of this report, it is concluded that the proposed solar PV array and associated ground-based and powerline infrastructure will not materially impact either radar/navigation infrastructure in the vicinity, nor present any material additional risks to operations at either Tommy's Field (FATF) of Postmasburg (FAPT) aerodromes, within the scope of the *2020 Protocol*.

On this basis, it is thus recommended that the Sensitivity Classification of the proposed facility be amended to '**low**', meaning that no further actions are required in terms of Compliance Statement.

APPENDICES

Appendix A: GWI Aviation Advisory – Capability and CVs

CURRICULUM VITAE: Jonathan Barry Clive Heeger

1. **Personal particulars:**

   a. **Name: Jonathan Barry Clive Heeger**
   b. **Date of birth: 2 May 1955**
   c. **Place of birth: Johannesburg**
   d. **Places of tertiary education and dates:**

Institution	Year of Graduation
University of the Witwatersrand: BSc (Eng) (Civ)	1977
University of the Witwatersrand: (GDE, Construction Mgt)	1985
University of the Witwatersrand: (MBA)	1985

2. **Qualifications:**

- MBA (1985); GDE (1985); BSc (Eng) (Civ), 1977
- Pr Eng (Reg 820365): 1982-2008
- MSAICE: 1982-1996

3. **Current position:**

- GWI Aviation Advisory: Principal Airport Precinct Advisor/Development Manager

4. **Employment history:**

Year	Organisation	Position
1978-1983	SA Railways and Harbours	Assistant Engineer
1983-1987	Retail Property Projects (Pty) Ltd	Development Manager
1988-1996	RMB Properties (Pty) Ltd	GM Property Development
1996-2000	Airports Company SA	Group Manager, Development and Planning
2000 – 2021	GWI Aviation Advisory	Aviation, Infrastructure and Commercial Property Specialist, Project Manager

Please refer to the next page for item 5

5. **Professional experience:** selected projects/experience relevant to the scope of work

Designation	Name	Employer, contact person & telephone number	Description of work (service)	Current Development Value of projects	Date completed
Aviation/Logistics Specialist	BDO Consortium	Mpumalanga Provincial Government	Development of Provincial Aviation Strategy	N/A	July 2019
Aviation/Commercial Specialist	SMEC Consortium	Kumba Mining Corp. Mr H Sifeni 076 6487185	Feasibility Study for new airport at Postmasburg, N Cape	R 500 mil	Ongoing
Infrastructural Expert	Grant Thornton Consortium	Ministry of Tourism, Republic of Kenya Cabinet Secretary (Tourism)	Infrastructural analysis and support for development of National Tourism Master Plan, Republic of Kenya	Multi-million US$	December 2017
Independent Consultant	GWI Africa	Mr P Serote	Master Planning and Concept Study for re-development of Grand Central AIrport, Midrand.	>R 10 bil	Ongoing
Development Expert	J Heeger (for GWI Project Managers)	KZN Treasury: Dr C Coetzee 082 796 4500	Institutional, Business and Technical advice – KZN Technohubs at Pietermaritzburg, Newcastle, Richards Bay and Port Shepstone – Infrastructure and Institutional arrangements within the structures of the MFMA and MSA.	R 500 mil	2018
Team Leader	Zululand District Municipality	Ms T Hadebi; Airport Manager	Commercial development planning and Feasibility Study for surplus property adjacent Ulundi Airport	>R 500 mil	2018
Commercial Advisor	ACSA	Mr L Tilana 082 3055855	Precinct commercialization and office development proposals for Port Elizabeth and East London Airport property precincts	>R 500 mil	July 2020
Commercial Advisor	PLD Developments/Matlosana Municipality	Mr AK Khuzwayo, Mr P Letlhage	Precinct commercialization and office/commercial development proposals for Matlosana Airport Precinct	>R 500 mil	Ongoing
Team Leader	Umhlathuse Municipality	Ms B Strachan strachanb@umhlathuse.gov.za	Pre-Feasibility Study for New Richards Bay Airport and Commercial Precinct	R 500mil	2018
Team Leader, Development Expert	J Heeger (for Royal HaskoningDHV)	City Manager: Mr S Sithole; Dr Mimi Ndokweni c/o: denny.thaver@durban.gov.za	Technical and Business analysis, Virginia Airport, Durban - redevelopment. Analysis of alternative sites for General Aviation airport to replace Virginia Airport and deal structure options compliant with the MFMA/MSA.	R 6 bil	May 2014

Development/Aviation Expert	J Heeger (for Grant Thornton)	ECSECC (Provincial Govt) Mr B Mhlaba 083 477 3372	Mthatha Airport Strategy – providing technical and business support to ECSECC developing a comprehensive Development Strategy for Mthatha Airport Business Precinct	R 800 mil	August 2014
Development Expert	J Heeger (for Treasury Crack Team)	Airport Exec: Mr D Gengan david.gengan@msundusi.gov.za	Strategic/ technical support to Umsunduzi Municipality in Master Planning, upgrading infrastructure and commercial precinct development at Pietermaritzburg airport. Options development for establishment of Municipal Entity in terms of MSA s 73-78	R 1 bil (est)	March 2014
Development/Aviation Expert	J Heeger (KZN Treasury Crack Team)	KZN Treasury: Dr C Coetzee 082 796 4500 Municipal Manager: Mr M Mbili maxwell.mbili@hcm.gov.za	Strategic and technical Master Plan support to the Margate Municipality - planning for upgraded airport precinct and Business models, negotiating the introduction of scheduled services and SLA for provision of a Municipal Service.	R 350 000 (fee)	Dec 2013
Development Expert	J Heeger (for Treasury Crack Team)	KZN Treasury: Mr T Madgwick	Technical and business support to Ladysmith Municipality in Master Planning and investigating airport precinct - infrastructure and Institutional arrangements.	R 40 000 (fee)	December 2013
Business Unit leader	EC Harris	Mafikeng IDZ Company	Condition Assessment and redevelopment strategy, proposed Mafikeng IDZ	R 2 mil (fee)	2004
Dept Head	J Heeger	ACSA GM Planning: Mr S Huckwell 082 572 0945	Chairman, Airport Steering Committee (Ministry of Transport). Feasibility study for La Mercy Airport (King Shaka)	R 8,7 bil	1996-1998
Dept Head – Commercial Development	J Heeger	ACSA CEO: Mr D Ackerman 083 326 1856	Capital budgeting, operational and business models for all ACSA airports, including retail and commercial project directorship and PM. Design of internal audit and revenue reconciliation systems.	R 5 bil	1996 – 2000
Development Expert	J Heeger (for Treasury Crack Team)	KZN Treasury: Mr T Madgwick	Audit of Concession models and assessment of sustainability. Investigating airport precinct infrastructure and Institutional arrangements.	R 50 000 (fee)	December 2013
Team Leader, Commercial/Aviation Expert	J Heeger (for NACO SSI Joint Venture)	Botswana Civil Aviation Authority Mr K Ayyar +267 (365) 5100; +267 71558983	Developing strategies for growing non-aeronautical income at Sir Seretse Khama Airport, preparation of Tender Documents for tenants/concessionaires and negotiation with successful bidders.	R 500 000	June 2010
Team Leader, Aviation Expert	J Heeger (for SSI Engineers)	Aeroporto du Mocambique Mr A Tuendue	Design and construction supervision consultant for new Domestic and International Terminals at Maputo International Airport. Review of	R 1 bil +	2012

		+258 82 327 0140	traffic forecast, design brief and design proposals. Compliance assessment and business and commercialisation review.		
Commercial/Aviation Expert	J Heeger (for NACO SSI Joint Venture)	Botswana Civil Aviation Authority Mr K Ayyar +267 (365) 5100; +267 71558983	Design brief and concept for new terminal and landside precinct at Sir Seretse Khama Airport, Gaborone, including Master Planning, cost-benefit analysis and value engineering.	R 500 000 (fee)	2006-2008
GM Developments	RMB Properties	Warren Schultze, CEO 082 8000031	Responsibility for Group property developments including RMB Head Office and associated Merchant Place precinct developments and property due diligence and condition assessment surveys, West Rand Consolidated Mine village.	R 2 bill	October 1996

I, the undersigned, warrant that the contents of this schedule are within my personal knowledge and are to the best of my belief both true and correct.

Signed

Name: **JBC Heeger** Date: 6 April 2021

Position: Commercial/Aviation/Infrastructure Specialist

TO BE AFRICA'S PROFESSIONAL SERVICE PROVIDER OF CHOICE

SCHEDULE OF EXPERIENCE WITH AIRPORT RELATED PROJECTS

Project Name	Project location	Description of Project	Name of Client	Project Values	No. of profess. staff	Duration	Name of associated firm	Start Date	End Date	Staff involved and functions performed	Description of the services provided
CJWE Robinson Deep	Gauteng	Proposed development of an incinerator	EScience & Associates	TBC	2	6 Months	GWI	Nov 2020	May 2021	J Heeger - Aviation Advisor B Karstadt - Project Director	Specialist Aviation Study & Report
Black Mountain Mine - Aggeneys	Northern Cape	Proposed development of PV Plant	Uwuna Sustainability	TBC	2	6 Months	GWI	Dec 2020	Jun 2021	J Heeger - Aviation Advisor B Karstadt - Project Director	Specialist Aviation Study & Report
Eagle Creek	Gauteng	Proposed development of Green Energy Waste Facility	EScience & Associates	TBC	2	6 Months	GWI	Aug 2020	Feb 2021	J Heeger - Aviation Advisor B Karstadt - Project Director	Specialist Aviation Study & Report
ACSA Airports revitalization strategy	Port Elizabeth & East London	Evaluation and re-design of the landside precinct at these two airports. Proposal to advise on the utilization of the land with the airport precinct.	ACSA	TBC	4	30 Months	RHDHV & GWI	May 2018	Dec 2020	J Heeger - Aviation Advisor P Serote - Exec Director B Karstadt - Project Director A Martens - Urban Planner RHDHV Team	Commercial analysis, planning, design, evaluation and development proposals
Tommy's Airfield / Kolomela	Northern Cape	Planning & Design of a new airport	Anglo	TBC	2	30 Months	SMEC & GWI	Aug 2019	Jan 2022	J Heeger - Aviation Advisor B Karstadt - Project Director	Planning & Design of a new airport. Aviation compliance for the airport
Matlosana Airport Precinct Development	Klerksdorp	Master planning, evaluation and development proposals for the Matlosana airport precinct	Developer & Matlosana Municipality	TBC	3	Ongoing	GWI	Mar 2019	Ongoing	J Heeger - Aviation Advisor P Serote - Exec Director B Karstadt - Project Director	Development proposal options for the airport precinct
Grand Central Airport	Midrand	Airport Urbanism concept that will create a Transport Oriented Development (TOD) for the existing airport and surrounding area	Old Mutual	TBC	3	Ongoing	GWI / Ivora Capital / RHDHV	Oct 2017	Ongoing	J Heeger - Aviation Advisor P Serote - Exec Director B Karstadt - Project Director	Master planning and development proposal for a TOD with the integration of the Gautrain
Revitalization of the Prince Mangosuthu Buthelezi Airport	Ulundi	Review Prince Mangosuthu airport in Ulundi to introduce scheduled air services and development opportunities to sustain the operation of the airport	Zululand District Municipality	TBC	3	Ongoing	N/A	Jan 2018	Ongoing	B Karstadt - Project Director J Heeger - Aviation Advisor B Ndayi - Project Manager	Professional advice, guidance and support to the Municipality
KZN Regional Technology Hubs	Four (4) Techno Hubs in KZN, Port Shepstone Pietermaritzburg Newcastle Richards Bay	Development of 4 Technology Hubs at these locations. Project will attract investors with innovative and technology driven businesses	KZN Treasury and Department of Science and Technology	R120 Mil	19	36 Months	N/A	Mar 2015	Mar 2018	B Karstadt - Project Director R Best - Project Manager E Agnew - Project Manager J Heeger - Strategic Planner R Smorfitt - Business / Investment G le Roux - Architect A Adebayo - Architect / Urban Design V Davies - Electrical Engineer T Chetty - Civil / Structural Engineer M Sibeko - Supply Chain Management P Serote - Financial Services G Oldham - Economist	Project Management, Strategic Planning, Operations and Maintenance, Investment Advice, Professional Technical Services for the Built Environment Urban Design and Architectural Concepts

Appendix B

Aerodrome Directory Data

FATF

AD 2.1 AERODROME LOCATION INDICATOR AND NAME

FATF - TOMMY'S FIELD

AD 2.2 AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	*ARP co-ordinates and site at AD*	281600.00S 0230000.00E Mid-point of aerodrome
2	*Direction and distance from city*	5 NM NW Postmasburg
3	*Reference elevation/Reference temperature*	4360 FT
4	*Geoid undulation at aerodrome elevation position*	NIL INFO AVBL
5	*MAG VAR* *annual change*	20°W
6	*AD operator, address, TEL, FAX, SITA, AFS*	Authority Supervising the Aerodrome and Remarks: PUB AD CHF: ASSMANG LIMITED P.O MANCORP MINE, BEESHOEK, 8423 TEL: Mancorp Mine: (053) 311 6547 FAX: 086 731 7921 Contact person: Ronel van Rensburg E-mail: Ronel.vanRensburg@assmang.co.za
7	*Types of traffic permitted (IFR / VFR)*	NIL INFO AVBL
8	*Remarks*	NIL

AD 2.3 OPERATIONAL HOURS

1	*AD Operator*	AD Operational hours: MON-FRI 0445-0545, 0930-1030 and 1500-1545
2	*Customs and immigration*	NIL INFO AVBL
3	*Health and sanitation*	NIL INFO AVBL
4	*AIS briefing office*	NIL INFO AVBL
5	*ATS reporting office (ARO)*	NIL INFO AVBL
6	*MET briefing office*	NIL INFO AVBL
7	*ATS*	NIL INFO AVBL
8	*Fuelling*	NIL INFO AVBL
9	*Handling*	NIL INFO AVBL
10	*Security*	NIL INFO AVBL
11	*De-icing*	NIL INFO AVBL
12	*Remarks*	NIL

AD 2.4 HANDLING SERVICES AND FACILITIES

1	*Cargo-handling facilities*	NIL INFO AVBL
2	*Fuel and Oil types*	Jet A1 AVBL
3	*Fuelling facilities and capacity*	NIL INFO AVBL
4	*De-icing facilities*	NIL INFO AVBL
5	*Hangar space for visiting aircraft*	NIL INFO AVBL
6	*Repair facilities for visiting aircraft*	NIL INFO AVBL
7	*Remarks*	NIL

AD 2.5 PASSENGER FACILITIES

1	*Hotels*	Limited lounge facility available at airport
2	*Restaurants*	NIL INFO AVBL
3	*Transportation*	AVIS Car Rental Service AVBL at the Airport
4	*Medical facilities*	NIL INFO AVBL
5	*Bank and Post Office*	NIL INFO AVBL
6	*Tourist office*	NIL INFO AVBL
7	*Remarks*	NIL Baggage Handling Services

AD 2.6 RESCUE AND FIRE FIGHTING SERVICES

1	*Aerodrome category for fire fighting*	CAT 3
2	*Rescue equipment*	Standard rescue equipment carried on fire tenders
3	*Capability for removal of disabled aircraft*	Contracted in as per AEMS Mutual Aid Agreement, Policies and Procedures
4	*Remarks*	Rescue and Fire Fighting Services are provided at Tommy's Field Airport only during the following times: 4.1 MON-FRI 0445-0545 and 1400-1500 MON and FRI: 1000-1100 4.2 Tommy's Field Airport does not and cannot guarantee that Rescue & Fire Fighting Services will be available outside of the above operational times. 4.3 Not AVBL outside operational hours indicated above

AD 2.7 SEASONAL AVAILABILITY - CLEARING

1	*Types of clearing equipment*	NIL INFO AVBL
2	*Clearance priorities*	NIL INFO AVBL
3	*Remarks*	NIL INFO AVBL

AD 2.8 APRONS, TAXIWAYS AND CHECK LOCATIONS/POSITIONS DATA

1	*Designation, surface and strength of aprons*	NIL INFO AVBL
2	*Designation, width, surface and strength of taxiways*	NIL INFO AVBL
3	*ACL location and elevation*	NIL INFO AVBL
4	*VOR checkpoints*	NIL INFO AVBL
5	*INS checkpoints*	NIL INFO AVBL
6	*Remarks*	Pilots and operators utilizing Tommy's field airport shall ensure that aircraft are parked within designated parking bays and are manoeuvred in an orderly and safe manner.

AD 2.9 SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS

1	*Use of aircraft stand ID signs, TWY guide lines and visual docking / parking guidance system of aircraft stands.*	Tommy's field airport has two (2) parking Power-in / Power- out self parking aircraft stands on the apron. Due to no marshalling service available a yellow lead-in line, alignment bar and stop bar/ line is provided on the left side of the aircraft to be aligned with the left shoulder of the captain of the aircraft is safely positioned on stand
2	*RWY and TWY markings and LGT*	Threshold, End & Edge Lights Available
3	*Stop bar*	NIL INFO AVBL
4	*Remark*	Pilots and operators utilizing Tommy's field airport are responsible for and shall ensure the safe management and movement of their aircraft and respective passengers flown or to be flown on their aircraft to/from Tommy's field airport, especially during embarkation and disembarkation.

AD 2.10 AERODROME OBSTACLES

In Area 2					
OBST ID/ Designation	*OBST type*	*OBST position*	*ELEV/HGT*	*Markings/type, colour*	*Remarks*
a	*b*	*c*	*d*	*e*	*f*
NIL INFO AVBL	NIL INFO AVBL	NIL INFO AVBL	NIL INFO AVBL	NIL INFO AVBL	NIL INFO AVBL

In Area 3					
OBST ID/ Designation	*OBST Type*	*OBST position*	*ELEV/HGT*	*Markings/type, colour*	*Remarks*
a	*b*	*c*	*d*	*e*	*f*
NIL INFO AVBL	NIL INFO AVBL	NIL INFO AVBL	NIL INFO AVBL	NIL INFO AVBL	NIL INFO AVBL

AD 2.11 METEOROLOGICAL INFORMATION PROVIDED

1	*Associated MET office*	NIL INFO AVBL
2	*Hours of service* *MET office responsible outside hours*	NIL INFO AVBL
3	*Office responsible for TAF preparation and periods of validity*	NIL INFO AVBL
4	*Type of trend forecast and interval of issuance*	NIL INFO AVBL
5	*Briefing / consultation provide*	NIL INFO AVBL
6	*Flight documentation / language(s) used*	NIL INFO AVBL
7	*Charts and other information available for briefing or consultation*	NIL INFO AVBL
8	*Supplementary equipment available for providing information*	NIL INFO AVBL
9	*ATS units provided with information*	NIL INFO AVBL
10	*Additional information (limitation of service, e.t.c.)*	NIL INFO AVBL

AD 2.12 RUNWAY PHYSICAL CHARACTERISTICS

Designations RWY NR	*TRUE &MAG BRG*	*Dimensions of RWY (M)*	*Strength (PCN) and surface of RWY and SWY*	*THR coordinates RWY end coordinates THR geoid undulation*	*THR elevation and highest elevation of TDZ of precision APP RWY*	*Slope of RWY-SWY*
1	*2*	*3*	*4*	*5*	*6*	*7*
03	010°T/030°M	1460 x 15	ASPH LCN 14	281559.50S 0225930.81E	4324FT	NIL INFO AVBL
21	190°T/210°M	1460 x 15	ASPH LCN 14	281512.75S 0225940.01E	4329FT	NIL INFO AVBL
SWY dimensions (M)	*CWY dimensions (M)*	*Strip dimensions (M)*	*RESA dimensions (M)*	*Location (which runway end) and description of arresting system (if any);*	*OFZ*	*Remarks*
8	*9*	*10*	*11*	*12*	*13*	*14*
41	83	NIL INFO AVBL	NIL INFO AVBL	NIL INFO AVBL	NIL INFO AVBL	NIL
26	107	NIL INFO AVBL	NIL INFO AVBL	NIL INFO AVBL	NIL INFO AVBL	NIL
RWY 03/21 is 1460 x 15M with Inner 10M Asphalt Circuit Procedures: RWY 03 - Left hand circuit RWY 21 - Right hand circuit RWY 03/21 - Slope1:500 (0.2)						

AD 2.13 DECLARED DISTANCES

RWY	*TORA (M)*	*TODA (M)*	*ASDA (M)*	*LDA (M)*	*Remarks*
1	*2*	*3*	*4*	*5*	*6*
03	1460	1543	1501	1460	NIL
21	1460	1567	1486	1460	NIL

AD 2.14 APPROACH AND RUNWAY LIGHTING

RWY	APCH LGT Type and LEN INST	THR LGT Colour WBAR	VASIS (MEHT) PAPI	TDZ, LGT LEN	RWY Centre Line LGT, Spacing, colour INTST	RWY Edge LGT, LEN, Spacing, Colour, WBAR	RWY End LGT Colour WBAR	SWY LGT LEN (m) Colour	Remarks
1	2	3	4	5	6	7	8	9	10
03	NIL INFO AVBL	Green W/Bar	NIL INFO AVBL	NIL INFO AVBL	NIL INFO AVBL	1500M, 50M white	Red	NIL INFO AVBL	NIL
21	NIL INFO AVBL	Green W/Bar	NIL INFO AVBL	NIL INFO AVBL	NIL INFO AVBL	1500M, 50M white	Red	NIL INFO AVBL	NIL
RWY lighting AVBL.									

AD 2.15 OTHER LIGHTING, SECONDARY POWER SUPPLY

1	ABN/IBN location, characteristics and hours of operation	NIL INFO AVBL
2	LDI location & LGT and anemometer location and LGT	NIL INFO AVBL
3	TWY edge and centre line lighting	NIL INFO AVBL
4	Secondary power supply and switch-over time	NIL INFO AVBL
5	Remarks	NIL

AD 2.16 HELICOPTER LANDING AREA

1	Coordinates TLOF or THR of FATO / Geoid undulation	NIL INFO AVBL
2	TLOF / FATO elevation (m/ft)	NIL INFO AVBL
3	TLOF and FATO area dimensions, surface, strength, marking	NIL INFO AVBL
4	True BRG of FATO	NIL INFO AVBL
5	Declared distance available	NIL INFO AVBL
6	APP and FATO lighting	NIL INFO AVBL
7	Remarks	NIL

AD 2.17 ATS AIRSPACE

1	Designation and lateral limits	NIL INFO AVBL
2	Vertical limits	NIL INFO AVBL
3	Airspace classification	NIL INFO AVBL
4	ATS unit call sign Language(s)	NIL INFO AVBL
5	Transition altitude	NIL INFO AVBL
6	Remarks	NIL

AD 2.18 ATS COMMUNICATION FACILITIES

Service designation	Call sign	Channel(s)	Hours of operation	Remarks
1	2	3	4	5
NIL INFO AVBL	NIL INFO AVBL	NIL INFO AVBL	NIL INFO AVBL	NIL

AD 2.19 RADIO NAVIGATION AND LANDING AIDS

Type of aid, MAG VAR, Type of supported OPS (for VOR/ILS/ MLS, give declination)	ID	Frequency	Hours of operation	Position of transmitting antenna coordinates	Elevation of DME transmitting antenna	Remarks
1	2	3	4	5	6	7
NIL INFO AVBL	NIL INFO AVBL	NIL INFO AVBL	NIL INFO AVBL	NIL INFO AVBL	NIL INFO AVBL	NIL

AD 2.20 LOCAL AERODROME REGULATIONS

NIL INFO AVBL

AD 2.21 NOISE ABATEMENT PROCEDURES

NIL INFO AVBL

AD 2.22 FLIGHT PROCEDURES

NIL INFO AVBL

AD 2.23 ADDITIONAL INFORMATION

WARNING: Blasting takes place WEST, 10 NM SOUTH of RWY 03/21 and 8 NM NW of Postmasburg
MON-FRI: 0500 - 1800
see AIC 007/2018

Pilots & Operators wanting to make use of Tommy's Field Airport shall apply with the Tommy's Field APM for permission and approval at least 24 hours before estimated time of intended movement by E-Mail to:
Ronel van Rensburg (Ronel.vanRensburg@assmang.co.za)
Mduduzi Malinga (Mduduzi.Malinga@assmang.co.za)

Also providing the following flight information:
1. Date of intended movement;
2. Type on intended movement (landing, landing & night stop or departure);
3. Name and contact details of the Operator;
4. Type of Aircraft
5. Aircraft Registration, and
6. Souls onboard (Crew & Pax)

Failure to obtain the required permission and approval from the Tommy's Field APM shall result in the following penalties:
7. A fine to the amount of R5 000-00 shall be imposed upon the Operator or Registered Owner of the Aircraft.
8. Tommy's Field Airport Shall report the Operator, Pilot and Registered Owner of the Aircraft to the SACAA, and
9. Note that unauthorized movement at Tommy's Field Airport may jeopardise insurance cover over the aircraft and/or occupants.

FATF Airport Manager reserves the right to:
10. Decline approval to/from FATF where the ETA /ETD is outside of the operational hours reflected above;
11. When the landing slots are fully booked, and/or
12. When the apron parking space is fully booked.

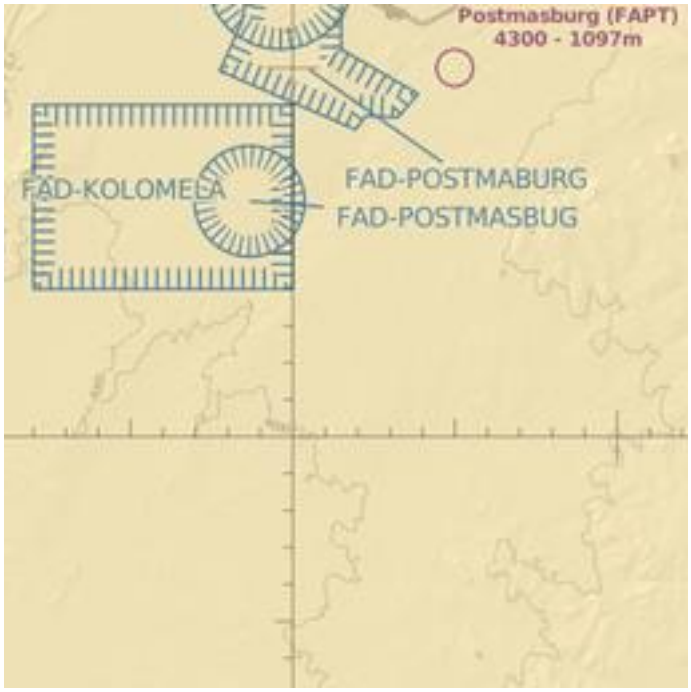
Access to the airfield property is restricted after hours (MON - FRI and SAT - SUN between 1430 - 0500). The AD is AVBL for aircraft related emergencies at own discretion but must be reported to the Airport Manager & SACAA.

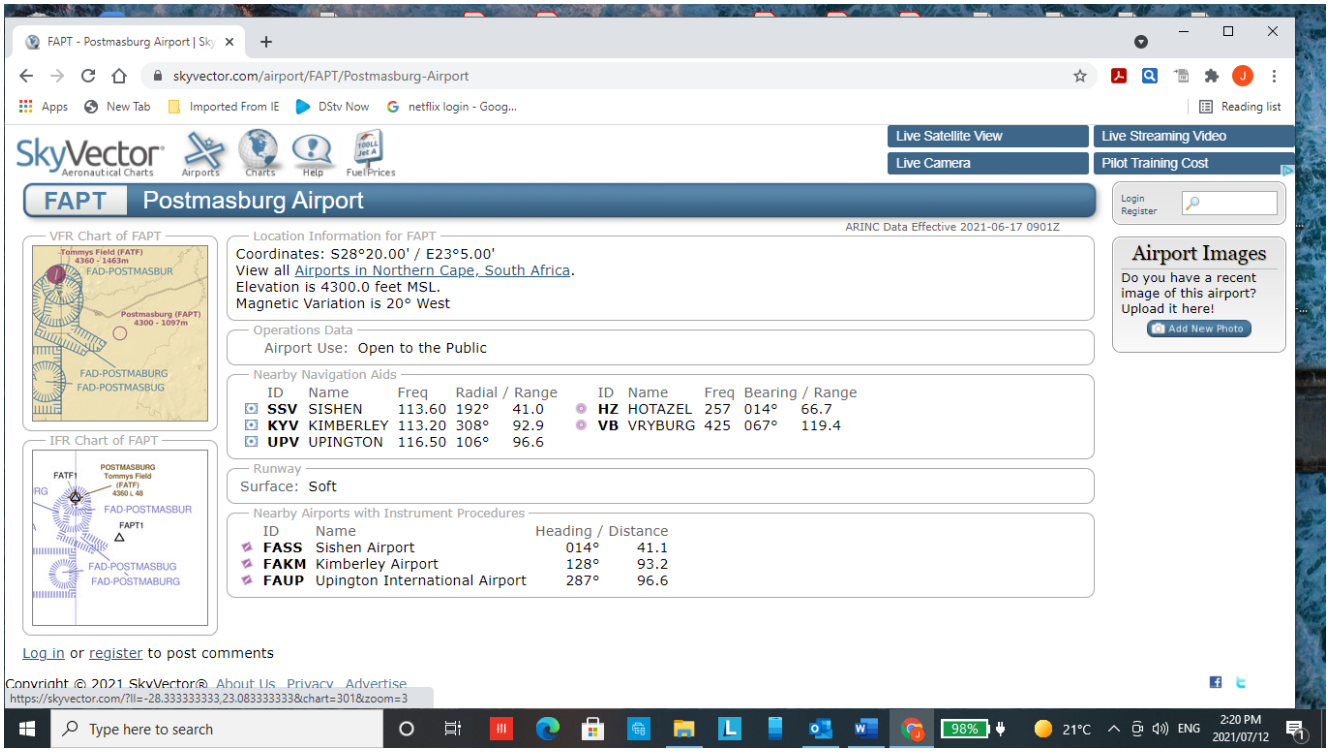
WARNING:
Blasting in vicinity of Airport Area MON – SUN sunset to sunrise within 1 NM radius.

Suggested Minimum safe altitude as per AIC 007/2018 is 5000 FT AGL.

AD 2.24 CHARTS RELATED TO AN AERODROME

NIL


Postmasburg (FAPT)
4300 - 1097m
FAD-KOLOMELA
FAD-POSTMABURG
FAD-POSTMASBUG


FAPT - Postmasburg Airport | Sky
skyvector.com/airport/FAPT/Postmasburg-Airport
SkyVector
Aeronautical Charts
Live Satellite View
Live Streaming Video
Live Camera
Pilot Training Cost
FAPT Postmasburg Airport
ARINC Data Effective 2021-06-17 0901Z
VFR Chart of FAPT
IFR Chart of FAPT
Location Information for FAPT
Coordinates: S28°20.00' / E23°5.00'
View all Airports in Northern Cape, South Africa.
Elevation is 4300.0 feet MSL.
Magnetic Variation is 20° West
Operations Data
Airport Use: Open to the Public
Nearby Navigation Aids
ID Name Freq Radial / Range
SSV SISHEN 113.60 192° 41.0
KYV KIMBERLEY 113.20 308° 92.9
UPV UPINGTON 116.50 106° 96.6
ID Name Freq Bearing / Range
HZ HOTAZEL 257 014° 66.7
VB VRYBURG 425 067° 119.4
Runway
Surface: Soft
Nearby Airports with Instrument Procedures
ID Name Heading / Distance
FASS Sishen Airport 014° 41.1
FAKM Kimberley Airport 128° 93.2
FAUP Upington International Airport 287° 96.6
Airport Images
Do you have a recent image of this airport? Upload it here!
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Appendix C: Government Notice No 320 of March 2020.

Published in Government Notice No. 320 GOVERNMENT GAZETTE 43110 20 MARCH 2020

GAZETTED FOR IMPLEMENTATION

CIVIL AVIATION

PROTOCOL FOR THE SPECIALIST ASSESSMENT AND MINIMUM REPORT CONTENT REQUIREMENTS FOR ENVIRONMENTAL IMPACTS ON CIVIL AVIATION INSTALLATIONS

1. SCOPE

This protocol provides the criteria for the specialist assessment and minimum report content requirements for impacts on civil aviation installations for activities requiring environmental authorisation. This protocol replaces the requirements of Appendix 6 of the Environmental Impact Assessment Regulations[1].

The assessment and reporting requirements of this protocol are associated with the level of sensitivity identified by the national web based environmental screening tool (screening tool).

The screening tool can be accessed at: https://screening.environment.gov.za/screeningtool.

2. SITE SENSITIVITY VERIFICATION AND MINIMUM REPORT CONTENT REQUIREMENTS

Prior to commencing with a specialist assessment, the current use of the land and the potential environmental sensitivity of the site under consideration as identified by the screening tool must be confirmed by undertaking a site sensitivity verification.

2.1. The site sensitivity verification must be undertaken by an environmental assessment practitioner or specialist with expertise in radar.

2.2. The site sensitivity verification must be undertaken through the use of:
- (a) a desk top analysis, using satellite imagery;
- (b) a preliminary on-site inspection; and
- (c) any other available and relevant information.

2.3. The outcome of the site sensitivity verification must be recorded in the form of a report that:
- (a) confirms or disputes the current use of the land and environmental sensitivity as identified by the screening tool, such as new developments or infrastructure etc.;
- (b) contains a motivation and evidence (e.g. photographs) of either the verified or different use of the land and environmental sensitivity; and
- (c) is submitted together with the relevant assessment report prepared in accordance with the requirements of the Environmental Impact Assessment Regulations.

3. SPECIALIST ASSESSMENT AND MINIMUM REPORT CONTENT REQUIREMENTS

TABLE 1: ASSESSMENT AND REPORTING OF IMPACTS ON CIVIL AVIATION INSTALLATIONS
1. General Information
1.1. An applicant intending to undertake an activity identified in the scope of this protocol for which a specialist assessment has been identified on the screening tool: 1.1.1. on a site identified as being of:

[1] The Environmental Impact Assessment Regulations, as promulgated in terms of Section 24 (5) of the National Environmental Management Act, 1998 (Act No. 107 of 1998).

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GAZETTED FOR IMPLEMENTATION

1.1.1.1. "very high", "high" or "medium" sensitivity for civil aviation, must submit a Civil Aviation Compliance Statement; or

1.1.1.2. "low" sensitivity, no further assessment requirements are identified.

1.1.2. on a site where the information gathered from the site sensitivity verification differs from the designation of "very high", "high" or "medium" sensitivity on the screening tool and it is found to be of a "low" sensitivity, no further assessment requirements are identified;

1.1.3. similarly, on a site where the information gathered from the initial site sensitivity verification differs from the designation of "low" sensitivity on the screening tool and it is found to be of a "very high", "high" or "medium" sensitivity, a Civil Aviation Compliance Statement must be submitted; and

1.1.4. If any part of the proposed development footprint falls within an area of "very high", "high" or "medium" sensitivity, the assessment and reporting requirements prescribed for the "very high", "high" and "medium" sensitivity apply to the entire footprint. In the context of this protocol, development footprint means the area on which the proposed development will take place and includes any area that will be disturbed.

VERY HIGH SENSITIVITY RATING - high likelihood for significant negative impacts on the civil aviation installation that cannot be mitigated. In-depth assessment of the potential impacts are likely to be required before development can be considered in these areas.	2. Civil Aviation Compliance Statement 2.1. The compliance statement must be prepared by an environmental assessment practitioner or a specialist with expertise in radar. 2.2. The compliance statement must: 2.2.1. be applicable to the preferred site and the proposed development footprint; 2.2.2. confirm the sensitivity rating for the site; and 2.2.3. indicate whether or not the proposed development will have an unacceptable impact on civil aviation installations. 2.3. The compliance statement must contain, as a minimum, the following information: 2.3.1. contact details of the environmental assessment practitioner or the specialist, their relevant qualifications and expertise in preparing the statement, and a curriculum vitae; 2.3.2. a signed statement of independence by the environmental assessment practitioner or specialist; 2.3.3. a map showing the proposed development footprint (including supporting infrastructure) overlaid on the civil aviation sensitivity map generated by the screening tool; 2.3.4. a comment, in writing, from the South African Civil Aviation Authority (SACAA), which may include inputs from the Obstacle Evaluation Committee (OEC), if appropriate, confirming no unacceptable impact on civil aviation installations; and 2.3.5. should the comment from the SACAA indicate the need for further assessment, a copy of the assessment report and mitigation measures is to be attached to the compliance statement and incorporated into the Basic Assessment Report or Environmental Impact Assessment Report with mitigation and monitoring measures identified included in the EMPr. The assessment must be in accordance with the requirements stipulated by the SACAA.
HIGH SENSITIVITY RATING – potential for negative impacts on the civil aviation installation that can potentially be mitigated. Further assessment may be required to investigate potential impacts and mitigation measures.	
MEDIUM SENSITIVITY RATING - low potential for negative impacts on the civil aviation installation, and if there are impacts there is a high likelihood of mitigation. Further assessment of the potential impacts may not be required.	

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	2.4. A signed copy of the compliance statement must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.
LOW SENSITIVITY RATING - No significant impacts on the civil aviation installation are expected in low sensitivity areas. It is unlikely for further assessment and mitigation measures to be required.	No requirement identified.