DEPARTMENT OF ENVIRONMENTAL AFFAIRS

NO. 648 **10 MAY 2019**

NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998)

PROCEDURES TO BE FOLLOWED FOR THE ASSESSMENT AND MINIMUM CRITERIA FOR REPORTING OF IDENTIFIED ENVIRONMENTAL THEMES IN TERMS OF SECTION 24(5)(a) AND (h) OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998, WHEN APPLYING FOR ENVIRONMENTAL AUTHORISATION

I, Nomvula Paula Mokonyane, Minister of Environmental Affairs, hereby give notice of my intention to prescribe general requirements for undertaking an initial site sensitivity verification and for protocols for the assessment and minimum reporting requirements of environmental impacts **for environmental themes for activities requiring environmental authorisation, as contained in the Schedule hereto**. When the requirements of these protocols apply, the requirements of Appendix 6 of the Environmental Impact Assessment Regulations, promulgated under sections 24(5) and 44 of the National Environmental Management Act, 1998 (Act No. 107 of 1998), are replaced by these requirements.

Each protocol applies exclusively to the environmental theme identified within its scope. Multiple themes may apply and assessments for these themes must be undertaken in accordance with the relevant protocol, or, where no specific protocol has been prescribed, in accordance with the requirements of the Environmental Impact Assessment Regulations, as amended.

Members of the public are invited to submit written comments or inputs to the acting Minister, within 30 days of publication of this notice in the *Gazette*, to the following addresses:

By post to: The Director-General:
Department of Environmental Affairs
Attention: Ms D Fischer
Private Bag X447
PRETORIA
0001
By hand at: Reception, Environment House, 473 Steve Biko Road, Arcadia, Pretoria, 0083
By e-mail: DFischer@environment.gov.za

Any inquiries in connection with the Notice can be directed to (012) 399 9315.

Comments received after the closing date may not be considered.

NOMVULA PAULA MOKONYANE
MINISTER OF ENVIRONMENTAL AFFAIRS

SCHEDULE

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6(a) Protocol for the assessment and reporting of environmental impacts on civil aviation installations

PART A: GENERAL REQUIREMENTS FOR UNDERTAKING AN INITIAL SITE SENSITIVITY VERIFICATION WHERE NO SPECIFIC ASSESSMENT PROTOCOL HAS BEEN IDENTIFIED

1. SCOPE

These requirements must be applied when undertaking an Initial Site Sensitivity Verification for a site selected on the national web based environmental screening tool for which no specific assessment protocol related to any theme has been identified. The purpose of the Initial Site Sensitivity Verification is to confirm or dispute the current use of the land and the potential environmental sensitivity of the site as identified by the national web based environmental screening tool for the specific environmental theme being considered.

The national web based environmental screening tool can be accessed at:

https://screening.environment.gov.za/screeningtool

2. REQUIREMENTS FOR INITIAL SITE SENSITIVITY VERIFICATION

2.1 The Initial Site Sensitivity Verification must be undertaken by an environmental assessment practitioner or a registered specialist with expertise in the relevant environmental theme being considered.

2.2 The Initial Site Sensitivity Verification must be undertaken through the use of:

(a) a desk top analysis, using satellite imagery; and
(b) a preliminary on-site inspection to identify if there are any discrepancies with the current use of land and environmental status quo versus the environmental sensitivity as identified on the national web based environmental screening tool, such as new developments, infrastructure, indigenous/pristine vegetation, etc.

2.3 The outcome of the Initial 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 national web based environmental screening tool;
(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 reports prepared in accordance with the requirements of the Environmental Impact Assessment Regulations.

3. REQUIREMENTS FOR ENVIRONMENTAL ASSESSMENT

As no specific assessment protocol has been prescribed, the required level of assessment must be based on the findings of the Initial Site Sensitivity Verification and must comply with Appendix 6 of the Environmental Impact Assessment Regulations promulgated under sections 24(5) and 44 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (The Act), where a specialist assessment is required.

PART B: ENVIRONMENTAL THEMES

1. AGRICULTURE
1(a) - PROTOCOL FOR THE ASSESSMENT AND REPORTING OF ENVIRONMENTAL IMPACTS ON AGRICULTURAL RESOURCES

1. SCOPE

This Protocol provides the criteria for the assessment and reporting of impacts on agricultural resources for activities requiring environmental authorisation. The assessment requirements of this Protocol are associated with a level of environmental sensitivity identified by the national web based environmental screening tool for agricultural resources, which is based on the land capability evaluation values as provided by the Department of Agriculture, Forestry and Fisheries[1]. If any part of the proposed development falls within an area of "very high" sensitivity, the requirements prescribed for such sensitivity apply.

The national web based environmental screening tool can be accessed at: https://screening.environment.gov.za/screeningtool

2. DEVELOPMENT LIMITS

a. Renewable energy generation facilities generating electricity of 20 megawatts or more

For facilities generating renewable energy of 20 megawatts (MW) or more on land zoned for agriculture, development limits apply and are provided in the Table 1 below.

Table 1: Development limits for renewable energy developments generating electricity of 20 MW or more

Criteria (land capability evaluation value and category of crop boundary)	Allowable development footprint in hectares per MW of installed generation capacity (with sensitivity ratings from the national web based environmental screening tool shown in brackets)	
	Within field crop boundaries	Outside field crop boundaries
Land capability evaluation value 11 – 15; Irrigation, horticulture/viticulture, shadenet; high value agricultural areas with a priority rating A and/or B	0 (Very High Sensitivity)	0 (Very High Sensitivity)
Land capability evaluation value 8 – 10; all cultivated areas including sugarcane; high value agricultural areas with a priority rating C and/or D	0.20 (High Sensitivity)	0.35 (Medium Sensitivity)
Land capability evaluation value 6 - 7;	0.25 (High Sensitivity)	2.50 (Low Sensitivity)
Land capability evaluation value 1 - 5;	0.30 (High Sensitivity)	2.50 (Low Sensitivity)

[1] Refer to the land capability metadata sheet available on the national web based environmental screening tool.

The development limits are based on the pre-assessment work undertaken through the Strategic Environmental Assessment for Wind and Solar Photovoltaic Energy in South Africa, 2015, for the effective and efficient roll-out of large scale wind and solar development in South Africa. The pre-assessment was undertaken in specific areas referred to as the Renewable Energy Development Zones (REDZs) as published under Government Notice No. 114, Gazette No. 41445 on 16 February 2018 and extrapolated to cover the entire country. The sensitivities were refined through further public consultation and stakeholder interaction and have been captured in the national web based environmental screening tool.

Allowable development limits refer to the area of a particular land capability that can be directly impacted (i.e. taken up by the physical footprint) by a renewable energy development. Footprint in this context is the area that is directly occupied by all infrastructure, including roads, hard standing areas, buildings, substations, etc. that is associated with the renewable energy generation facility during its operational phase, and that result in the exclusion of that land from potential cultivation or grazing. It excludes all areas that were already occupied by roads and other infrastructure prior to the establishment of the renewable energy facility, but includes the surface area required for expanding existing infrastructure (e.g. widening existing roads). It excludes the corridor underneath overhead power lines, but includes the pylon footprints. It therefore represents the total land that is actually excluded from agricultural use as a result of the renewable energy facility.

The Strategic Environmental Assessment for Wind and Solar Photovoltaic Energy in South Africa, 2015 can be accessed at:
https://redzs.csir.co.za/?page_id=611 and https://egis.environment.gov.za/redz.

3. REQUIREMENTS FOR THE INITIAL SITE SENSITIVITY VERIFICATION

Requirements for the assessment and reporting of impacts on agricultural resources for all activities requiring environmental authorisation are set out in Table 2 below, and correlate to the sensitivity ratings contained in the national web based environmental screening tool. Prior to beginning the assessment, the current use of the land and the potential environmental sensitivity of the site as identified by the national web based environmental screening tool must be confirmed by undertaking an Initial Site Sensitivity Verification.

3.1 The Initial Site Sensitivity Verification must be undertaken by an environmental assessment practitioner or a registered specialist with expertise in the relevant environmental theme being considered.

3.2 The Initial Site Sensitivity Verification must be undertaken through the use of:

(a) a desk top analysis, using satellite imagery; and
(b) a preliminary on-site inspection to identify if there are any discrepancies with the current use of land and environmental status quo versus the environmental sensitivity as identified on the national web based environmental screening tool, such as new developments, infrastructure, indigenous/pristine vegetation, etc.

3.3 The outcome of the Initial 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 national web based environmental screening tool;
(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 reports prepared in accordance with the requirements of the Environmental Impact Assessment Regulations.

4. REQUIREMENTS FOR ENVIRONMENTAL ASSESSMENT

TABLE 2: REQUIREMENTS FOR THE ASSESSMENT AND REPORTING OF IMPACTS ON AGRICULTURAL RESOURCES FOR ACTIVITIES REQUIRING ENVIRONMENTAL AUTHORISATION

VERY HIGH SENSITIVITY RATING - Land capability evaluation values 11 – 15; all irrigated land; horticulture and viticulture; demarcated high value agricultural areas with a priority rating of A and/or B. These areas are potentially unsuitable for development owing to: - high agricultural value and preservation importance - high production capability - high capital investment made - unique agricultural land attributes.	**1 General Information** 1.1 An applicant intending to undertake an activity identified in the Scope of this Protocol on a site identified by the national web based environmental screening tool as being of "very high" or "high" sensitivity for agricultural resources must submit an **Agricultural Agro-Ecosystems Assessment,** unless the: 1.1.1 application is for a linear activity for which impacts to the agricultural resource are temporary and the land in the opinion of the soil scientist/agricultural specialist based on the mitigation and remedial measures, can be returned to the current land capability within two years of the completion of construction phase; or 1.1.2 impact on agricultural resources is from an electricity pylon which is self-supporting; or 1.1.3 information gathered from the Initial Site Sensitivity Verification contemplated in section 3 of this Protocol or the specialist assessment differs from the designation of "very high" or "high" agricultural sensitivity from the national web based environmental screening tool and it is found to be of a "medium" or "low" sensitivity. 1.2 Should either paragraphs 1.1.1, 1.1.2 or 1.1.3 apply, an **Agricultural Compliance Statement** is to be provided. In the case of paragraph 1.1.3, an environmental assessment practitioner or a registered soil scientist/agricultural specialist, as appropriate, must append to the **Agricultural Compliance Statement** a motivation and evidence (e.g. photographs) of the different agricultural resource sensitivity.
HIGH SENSITIVITY RATING - Land capability evaluation values 8 - 10 including all cultivated areas[2] including sugar cane areas and demarcated high value agricultural areas with a priority rating of C and/or D. High sensitivity areas are still preservation worthy since they include land with an agricultural production potential and suitability for specific crops.	**2 The Agricultural Agro-Ecosystems Assessment** 2.1 The assessment must be undertaken by a soil scientist/agricultural specialist registered with the South African Council for Natural Scientific Professions (SACNASP), on the site being submitted as the preferred development site. 2.2 The assessment must be undertaken based on a site inspection as well as an investigation of the current production figures, where the land is under cultivation or has been within the past 5 years, and must identify: 2.2.1 the extent of the impact of the proposed development on the agricultural resources; 2.2.2 whether or not the proposed development will have an unacceptable negative impact on the agricultural production capability of the site, and in the event

[2] The Field Crop boundary and Land Capability dataset has been provided by DAFF. For details of the datasets, click on the options button to the right of the Field Crop Boundary layer and Land Capability layer respectively, in the Agricultural Theme to view the metadata.

	where it does, whether such a negative impact is outweighed by the positive impact of the proposed development on agricultural resources. 2.3 Description of the status quo, including the following aspects which must be considered as a minimum in the baseline description of the agro-ecosystem: 2.3.1 The soil form/s, soil depth (effective and total soil depth), top and sub-soil clay percentage, terrain unit and slope; 2.3.2 Where applicable, the vegetation composition, available water sources as well as agro-climatic information; 2.3.3 The current productivity of the land based on production figures for all agricultural activities undertaken on the land for the past 3 years, expressed as an annual figure and broken down into production units; 2.3.4 The current employment figures (both permanent and casual) for the land for the past 3 years, expressed as an annual figure; 2.3.5 Existing impacts on the site, located on a map (e.g. erosion, alien vegetation, non-agricultural infrastructure, waste, etc.). 2.4 Assessment of impacts, including the following aspects which must be considered as a minimum in the predicted impact of the proposed development on the agro-ecosystem: 2.4.1 Change in productivity for all agricultural activities based on the figures of the past 3 years, expressed as an annual figure and broken down into production units; 2.4.2 Change in employment figures (both permanent and casual) expressed as an annual figure; 2.4.3 Any alternative development footprints within the preferred development site which would be of "medium" or "low" sensitivity for agricultural resources as identified by the national web based environmental screening tool and verified through the Initial Site Sensitivity Verification. 3 The findings of the **Agricultural Agro-Ecosystem Assessment** must be written up in an **Agricultural Agro-Ecosystem Report.** 3.1 This report must contain the findings of the Agro-Ecosystem Assessment and the following information: 3.1.1 Details and relevant experience as well as the SACNASP registration number of the soil scientist/agricultural specialist/s preparing the assessment including a curriculum vitae; 3.1.2 A signed statement of independence by the specialist; 3.1.3 The duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment; 3.1.4 A description of the methodology used to undertake the on-site assessment inclusive of the equipment and models used, as relevant; 3.1.5 A map showing the proposed development footprint (including supporting infrastructure) with a 50 m buffered development envelope, overlaid on the agricultural sensitivity map generated by the national web based environmental screening tool; 3.1.6 An indication of the potential losses in production and employment from the change of the agricultural land use as a result of the proposed development; 3.1.7 An indication of possible long term benefits that will be generated by the project in relation to the benefits of the agricultural activities on the affected land; 3.1.8 Additional environmental impacts expected from the proposed development based on the current status quo of the land including erosion, alien vegetation, waste, etc.;

	3.1.9 Information on the current agricultural activities being undertaken on adjacent land parcels; 3.1.10 A motivation must be provided if there were development footprints identified as per paragraph 2.4.3 above that were identified as having a "low" biodiversity sensitivity and that were not considered appropriate; 3.1.11 Confirmation from the soil scientist/agricultural specialist that all reasonable measures have been considered in the micro-siting of the development to minimise fragmentation and disturbance of agricultural activities; 3.1.12 A substantiated statement from the soil scientist/agricultural specialist with regards to agricultural resources on the acceptability or not of the development and a recommendation on the approval or not of the development; 3.1.13 Any conditions to which the statement is subjected; 3.1.14 Where identified, proposed impact management outcomes or any monitoring requirements for inclusion in the EMPr; and 3.1.15 A description of the assumptions made and any uncertainties or gaps in knowledge or data. 3.2 In addition, where the activity is related to the generation of renewable energy of 20 MW or more, the report must contain: 3.2.1 Calculations of the total development footprint area for each land parcel as well as the total footprint area of the development (including supporting infrastructure); 3.2.2 Confirmation whether the development footprint is in line with the development limits set in the Table 1 above, including where applicable any deviation from the set development limits and motivation to support the deviation, including; a. Where relevant, reasons why the proposed development footprint is required to exceed the limit; b. Where relevant, reasons why this exceedance will be in the national interest; c. Where relevant, reasons why there are no alternative options available including evidence in terms of alternatives assessed. 3.3 A map showing the renewable energy applications within a 50 km radius of the proposed development with valid Environmental Authorisations. 4 The findings of the **Agricultural Agro-Ecosystems Assessment** must be incorporated into the Basic Assessment Report, or the Environmental Impact Assessment Report, including the mitigation and monitoring measures as identified, which are to be contained in the EMPr. A signed copy of the full Agricultural Agro-Ecosystems Assessment must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.
MEDIUM SENSITIVITY RATING - Land capability evaluation values 6 – 7. Medium sensitivity areas are likely to be very marginal arable land.	1. **General Information** 1.1. An applicant intending to undertake an activity identified in the Scope of this Protocol proposed on a site identified by the national web based environmental screening tool as being of "medium" or "low" sensitivity for agricultural resources or where the activity is related to the generation of renewable energy of 20 MW or more and the development footprint complies with the development limits

LOW SENSITIVITY RATING - Land capability evaluation values 1 – 5. Low sensitivity areas are likely to be non-arable land, and is therefore land onto which most development should be steered.	identified in the Table 1 above, must submit an **Agricultural Compliance Statement,** unless: 1.1.1. The information gathered from the Initial Site Sensitivity Verification contemplated in section 3 of this Protocol differs from that identified as having a "medium" or "low" agricultural sensitivity by the national web based environmental screening tool and it is found to be of a "very high" or "high" sensitivity; or 1.1.2. Where the activity is related to the generation of renewable energy of 20 MW or more, the development footprint deviates from any of the allowable development limits contained in Table 1 above. 1.2. Should paragraphs 1.1.1 or 1.1.2 apply, an **Agricultural Agro-Ecosystems Assessment** is to be undertaken and a report prepared in accordance with the requirements of an Agro-Ecosystems Assessment. **2. Agricultural Compliance Statement** The **Agricultural Compliance Statement** must be prepared by a soil scientist/agricultural specialist registered with the SACNASP, on the site being submitted as the preferred development site and must indicate whether or not the proposed development will have an unacceptable negative impact on the agricultural production capability of the site. 3. The **Agricultural Compliance Statement** must contain, as a minimum, the following information: 3.1. Details and relevant expertise as well as the SACNASP registration number of the soil scientist/agricultural specialist preparing the statement including a curriculum vitae; 3.2. A signed statement of independence by the specialist; 3.3. A map showing the proposed development footprint (including supporting infrastructure) with a 50 m buffered development envelope, overlaid on the agricultural sensitivity map generated by the national web based environmental screening tool; 3.4. Calculations of the total development footprint area for each land parcel as well as the total footprint area of the development (including supporting infrastructure); 3.5. Confirmation that the development footprint is in line with the development limits set in Table 1 above. 3.6. Confirmation from the specialist that all reasonable measures have been taken through micro-siting to avoid or minimise fragmentation and disturbance of agricultural activities; 3.7. A substantiated statement from the soil scientist/agricultural specialist on the acceptability of the development and a recommendation on the approval or not of the development; 3.8. Any conditions to which the statement is subjected; 3.9. Where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMPr; and 3.10. A description of the assumptions made and any uncertainties or gaps in knowledge or data. 4. The signed Agricultural Compliance Statement must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.

2. AVIFAUNA

2(a) - PROTOCOL FOR THE ASSESSMENT AND REPORTING OF ENVIRONMENTAL IMPACTS ON AVIFAUNA SPECIES BY ONSHORE WIND ENERGY GENERATION FACILITIES WHERE THE ELECTRICITY OUTPUT IS 20 MEGAWATTS OR MORE

1. SCOPE

This Protocol provides the criteria for the assessment and reporting of impacts on avifauna species associated with the development of onshore wind energy generation facilities where the electricity output is 20 megawatts or more which require environmental authorisation. This applies within and outside of the Renewable Energy Development Zones (REDZs) as published under Government Notice No. 114, Gazette No. 41445 on 16 February 2018. The assessment requirements of this Protocol are based on national and international best practice for the avoidance and mitigation of impacts on avifauna species.

2. REQUIREMENTS FOR THE ASSESSMENT AND REPORTING OF IMPACTS

Requirements for the assessment and reporting of impacts on avifauna species for onshore wind energy generation facilities are set out in Table 1 below and correlate to the sensitivity ratings contained in the national web based environmental screening tool.

TABLE 1: REQUIREMENTS FOR THE ASSESSMENT AND REPORTING OF IMPACTS ON AVIFAUNA FOR ONSHORE WIND ENERGY GENERATION FACILITIES WHERE THE OUTPUT IS 20 MW OR MORE REQUIRING ENVIRONMENTAL AUTHORISATION

VERY HIGH SENSITIVITY RATING – Very high sensitivity areas are likely to provide critical habitat for priority bird species[3] sensitive to wind energy development[4] and/or whose population is reliant on highly localized and unique roosting, nesting and/or foraging sites. These areas are potentially unsuitable for development owing to there being recent confirmed evidence that the priority bird species are present.	**1. General Information** 1.1 An applicant intending to undertake an activity as identified in the Scope of this Protocol must undertake an **Avifaunal Impact Assessment** based on the potential significance of the impact that the identified activity could have on bird species. 1.2 An **Avifaunal Impact Assessment** is to be undertaken irrespective of the sensitivity rating provided by the national web based environmental screening tool, as the present level of knowledge on bird behaviour and species population precludes confident predictions on the sustainability of priority or threatened species nationally. 1.3 The information provided by the national web based environmental screening tool includes known nests, roosts, vulture restaurants and areas likely to support priority bird species including threatened or rare species, especially those that may be susceptible to wind energy development. Precautionary buffers to these sensitivities as well as to the specific feature have been added. The data is,

[3] Priority bird species sensitive to wind energy developments include those identified by Birdlife South Africa as well as those listed on South Africa's National Red List website 42, 43 as Critical Endangered, Endangered, Vulnerable, Threatened or near Threatened according to the IUCN Red List 3.1

[4] https://www.birdlife.org.za/conservation/terrestrial-bird-conservation/birds-and-renewable-energy/wind-farm-map

	however, unverified and incomplete and therefore these features and buffers are to be used only as a guide to assist focus the **Avifaunal Impact Assessment.**
	1.4 The process for undertaking the **Avifaunal Impact Assessment** comprises three phases: 1.4.1 Reconnaissance Study 1.4.2 Pre-application Avifaunal Monitoring Plan 1.4.3 Avifaunal Impact Assessment and report.
HIGH SENSITIVITY RATING – High sensitivity areas include: (i) habitat likely to be of importance to priority bird species sensitive to wind energy developments, Critically Endangered, Endangered bird species and/or Vulnerable bird species; and (ii) habitat likely to be of importance to endemic and/or restricted-range bird species that are susceptible to impacts from wind energy facilities. These areas are potentially sensitive for development.	1.5 All tasks of the **Avifaunal Impact Assessment** must be undertaken by a SACNASP registered avifauna specialist. 1.6 All tasks are to be undertaken on the site being submitted as the preferred development site and at a control site located in accordance to the Birdlife South Africa (BLSA)/Endangered Wildlife Trust (EWT) *Bird and Wind-Energy Best-Practice Guideline*[5], and must identify: 1.6.1 the extent of impact of the facility on priority bird species; 1.6.2 whether the proposed development will have an unacceptable negative impact on priority or threatened bird species. 1.7 The **Avifaunal Impact Assessment** must be undertaken based on the results of a **site specific Pre-Application Avifaunal Monitoring Plan** that is informed by a **Reconnaissance Study**, as well as data collected over four seasons (i.e. summer, autumn, winter and spring) on the proposed development site and the control site.
MEDIUM SENSITIVITY RATING - Medium sensitivity areas have limited potential for supporting priority populations of threatened species that are susceptible to impacts from wind energy facilities.	**2 Reconnaissance Study** 2.1 The **Reconnaissance Study** is to be based on a desktop study of relevant information as well as a 2 to 4 day on-site inspection of both sites; 2.2 The occurrence of target species is to be identified; 2.3 The study must define the study area (avifaunal impact zone); and 2.4 The study is to produce a **site specific Pre-Application Avifaunal Monitoring Plan.**
LOW SENSITIVITY RATING– Low sensitivity areas possibly do not support priority populations of threatened species that are susceptible to impacts from wind energy facilities. These areas are probably suitable for development.	**3 Pre-application Avifaunal Monitoring Plan** 3.1 The plan as a minimum must include: 3.1.1 The study area and its characteristics which must be mapped including the extent, habitat, special features including topographical and water features, quarries, drainage lines, breeding sites, existing land uses, existing infrastructure such as power lines and roads, and existing wind energy facilities within 10 km of the proposed development site; 3.1.2 Target avifaunal species that are likely to occur on the proposed development site and for which monitoring is required; 3.1.3 Pre-application monitoring requirements for both the development site as well as the control site, that must include the following:[6] a. the monitoring intervals including the number and duration of monitoring events which must be based on the *Birdlife South Africa Bird and Wind-Energy Best-Practice Guideline* or a motivation provided for the deviation; b. the location of monitoring points; c. aspects to be monitored (for example, bird abundance and flight activity, presence of target species, proportion of flying time each target species

[5] The Best Practice Guidelines for assessing and monitoring the impact of wind energy facilities on birds in Southern Africa is available from: https://www.birdlife.org.za/documents/avian-wind-farm-sensitivity-map/804-birds-and-wind-bestpractice-guidelines-2015-final

[6] It is advisable to discuss the content of the plan with Birdlife South Africa before its implementation.

spends at turbine rotor height, preferred flight paths, risk of identified target species to collision, areas for specific monitoring if any, etc.);

d. equipment to be used;

e. monitoring methodology (for the abundance/activity monitoring and for direct observation/vantage point surveys, the *Birdlife South Africa Bird and Wind-Energy Best-Practice Guideline* must be followed or a motivation provided for the deviation);

f. numbers of observers to be used;

g. data to be captured including a pro-forma data capturing template.

3.2 Implementation of **site specific Pre-Application Avifaunal Monitoring Plan**

3.2.1 The site specific Pre-Application Avifaunal Monitoring Plan is to be carried out according to its requirements for a period of not less than four seasons.

3.2.2 Data on pre-application monitoring must be captured on the national bird monitoring data base accessed at https://www.environment.gov.za/birddatabase

4. Avifaunal Impact Assessment

Based on the outcome of the Reconnaissance Study and the findings of the Pre-Application Avifaunal Monitoring, an **Avifaunal Impact Assessment** must be undertaken. The assessment as a minimum must consider the following aspects:

4.1 Discussion on bird abundance and movement within the site;

4.2 Discussion on presence of target/threatened species and their occurrence on the site at heights which could pose risks to collision;

4.3 Assessment of risk of identified target species to collision including the expected fatality rates based on a suitable model commonly used for risk determination, per species and for the site;

4.4 Identification and mapping where relevant, of any migratory or preferential bird routes/corridors;

4.5 Where relevant, discussion on the risk of displacement;

4.6 Where relevant, areas identified within the site as having a very high sensitivity for bird collision or displacement and in which the development of turbines should be avoided, with these areas to be mapped;

4.7 In areas where other wind farms have been identified within a 10 km radius, a cumulative impact assessment must be undertaken which includes:

4.7.1 the fatality rate at the adjacent wind farms;

4.7.2 the possible additional fatalities from the proposed wind farm development for target species as well as general avifaunal species;

4.7.3 a discussion on the possible cumulative impact of the facility on regional populations of targeted species;

4.8 The plan for post construction monitoring (on both the proposed development site as well as the control site) and reporting which must include:

4.8.1 timeframes and intervals for monitoring;

4.8.2 number of turbines to be monitored, including any specific area for monitoring;

4.8.3 methodology for searcher efficiency and scavenger removal;

4.8.4 method for monitoring, i.e. transects or radial as well as extent of monitoring area;

4.8.5 results of monitoring compared against expected fatality rates (per target species as well as general species);

4.8.6 reporting requirements, including organisations for submission of reports;

4.8.7 years and intervals for monitoring to occur; and

	4.8.8 all methods used to estimate bird numbers and movements during reconnaissance and pre-application monitoring, which should be applied in exactly the same order to ensure the comparability of these two data sets. 5. The findings of the **Avifaunal Impact Assessment** must be written up in an Avifaunal Impact Assessment Report which must contain, as a minimum, the following information: 5.1 The SACNASP registration number of the avifaunal specialist/s preparing the assessment and their curriculum vitae; 5.2 A signed statement of independence by the specialist; 5.3 A description of the study area including a map of all the aspects identified in the duration, dates and seasons of the site investigation and the relevance of the season to the outcome of the assessment; 5.4 A description of the methodology used to undertake the site specific pre-application avifaunal monitoring program inclusive of the equipment used; 5.5 A map showing the GPS coordinates for each of the monitoring points for both the development site as well as the control site; 5.6 The monitoring intervals for both sites; 5.7 Where relevant, a map showing the areas to be avoided; 5.8 Fatality predication for target species and general species on the sites; 5.9 A map showing the approved renewable energy applications within a 10 km radius of the proposed project; 5.10 Where relevant, the outcomes of the cumulative impact assessment; 5.11 A discussion based on the pre-application monitoring of the expected impact of the proposed development on avifaunal species; 5.12 A substantiated statement from the registered avifauna specialist, indicating the acceptability of the development and a recommendation on the approval or not of the development; 5.13 Any conditions to which the statement is subjected; 5.14 A detailed post construction monitoring programme; 5.15 The outcomes of the post-construction monitoring, including data and specialists reports, must be uploaded onto the national bird monitoring database, to be accessed at https://www.environment.gov.za/birddatabase ; 5.16 Where required, proposed mitigation measures or any monitoring requirements for inclusion in the EMPr; and 5.17 A description of the assumptions made and any uncertainties or gaps in knowledge or data. 6. The findings of the **Avifaunal Impact Assessment** must be incorporated into the Basic Assessment Report or the Environmental Impact Assessment Report, including the mitigation and monitoring measures as identified, which must be incorporated into the EMPr. A signed copy of the Avifaunal Impact Assessment must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.

3. BIODIVERSITY

3(a) - PROTOCOL FOR THE ASSESSMENT AND REPORTING OF ENVIRONMENTAL IMPACTS ON TERRESTRIAL BIODIVERSITY

1. SCOPE

This Protocol provides the criteria for the assessment and reporting of impacts on terrestrial biodiversity for activities requiring environmental authorisation. The assessment requirements of this Protocol are associated with a level of environmental sensitivity determined by the national web based environmental screening tool. For terrestrial biodiversity the requirements are for landscapes or sites which support various levels of biodiversity. The relevant terrestrial biodiversity data in the national web based environmental screening tool has been provided by the South African National Biodiversity Institute[7]. If any part of the proposed development falls within an area of "very high" sensitivity, the requirements prescribed for such sensitivity apply.

The national web based environmental screening tool can be accessed at: https://screening.environment.gov.za/screeningtool

2. REQUIREMENTS FOR THE ASSESSMENT AND REPORTING OF IMPACTS

Requirements for the assessment and reporting of impacts of development on terrestrial biodiversity are set out in Table 1 below, and correlate to the sensitivity ratings contained in the national web based environmental screening tool. Prior to beginning the assessment, the current use of the land and the potential environmental sensitivity of the site as identified by the national web based environmental screening tool must be confirmed by undertaking an Initial Site Sensitivity Verification.

2.1 The Initial Site Sensitivity Verification must be undertaken by an Environmental Assessment Practitioner or a registered specialist with expertise in the relevant environmental theme being considered.

2.2 The Initial Site Sensitivity Verification must be undertaken through the use of:

(a) a desk top analysis, using satellite imagery; and
(b) a preliminary on-site inspection to identify if there are any discrepancies with the current use of land and environmental status quo versus the environmental sensitivity as identified on the national web based environmental screening tool, such as new developments, infrastructure, indigenous/pristine vegetation, etc.

2.3 The outcome of the Initial 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 national web based environmental screening tool;
(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.

[7] The biodiversity dataset has been provided by the South African Biodiversity Institute. For details of the dataset, click on the options button to the right of the various biodiversity layers within the national web based environmental screening tool, in the Terrestrial Biodiversity theme, to view the metadata.

3. REQUIREMENTS FOR ENVIRONMENTAL ASSESSMENT

TABLE 1: REQUIREMENTS FOR THE ASSESSMENT AND REPORTING OF IMPACTS ON TERRESTRIAL BIODIVERSITY FOR ACTIVITIES REQUIRING ENVIRONMENTAL AUTHORISATION

VERY HIGH SENSITIVITY RATING - for terrestrial biodiversity features	**1 General Information** 1.1 An applicant intending to undertake an activity identified in the Scope of this Protocol, on a site identified as being of "very high sensitivity" for terrestrial biodiversity on the national web based environmental screening tool must submit a **Terrestrial Biodiversity Impact Assessment.** 1.2 However, where the information gathered from the Initial Site Sensitivity Verification identified in section 2.1 of this Protocol or the specialist assessment differs from the designation of "very high" terrestrial biodiversity sensitivity from the national web based environmental screening tool and it is found to be of a "low" sensitivity, then a terrestrial biodiversity impact assessment is not required. 1.3 Should paragraph 1.2 apply, a **Terrestrial Biodiversity Compliance Statement** is to be provided. An Environmental Assessment Practitioner or a suitably qualified and SACNASP registered specialist, must append to the **Terrestrial Biodiversity Compliance Statement** a motivation and evidence (e.g. photographs) of the changed Terrestrial Biodiversity sensitivity. 2 The **Terrestrial Biodiversity Impact Assessment** 2.1 The assessment must be undertaken by a SACNASP registered specialist, on the preferred development site. 2.2 Description of the preferred site - the following aspects, as a minimum, must be considered in the baseline description: 2.2.1 A description of the ecological drivers/processes of the system and how the proposed development will impact these; 2.2.2 Ecological functioning and ecological processes (e.g. fire, migration, pollination, etc.) that operate within the proposed development site; 2.2.3 The ecological corridors that the development would impede including migration and movement of flora and fauna; 2.2.4 The description of any significant landscape features (including rare or important flora/faunal associations, presence of Strategic Water Source Areas (SWSAs) or Freshwater Ecosystem Priority Areas (FEPA) sub catchments; 2.2.5 A description of terrestrial biodiversity and ecosystems on the proposed development site, including – a) Main vegetation types; b) Threatened ecosystems, including Listed Ecosystems as well as locally important habitat types identified; c) Ecological connectivity, habitat fragmentation, ecological processes and fine-scale habitats; and d) Species, distribution, important habitats (e.g. feeding grounds, nesting sites, etc.) and movement patterns identified. 2.3 Identify any alternative development footprints within the preferred development site which would be of a "low" sensitivity as identified by the national web based environmental screening tool and verified through the Initial Site Sensitivity Verification; 2.4 The Terrestrial Biodiversity Impact Assessment must be based on the results of a site inspection undertaken on the preferred development site and must identify: 2.5 Terrestrial Critical Biodiversity Areas (CBAs), including: 2.5.1 The reasons why an area has been identified as a CBA;

	2.5.2 An indication of whether or not the development is consistent with maintaining the CBA in a natural or near natural state or in achieving the goal of rehabilitation; 2.5.3 The impact on species composition and structure of vegetation with an indication of the extent of clearing activities; 2.5.4 The impact on ecosystem threat status; 2.5.5 The impact on explicit subtypes in the vegetation; 2.5.6 The impact on overall species and ecosystem diversity of the site; and 2.5.7 The impact on populations of species of special concern in the CBA. 2.6 Terrestrial Ecological Support Areas, including; 2.6.1 The impact on the ecological processes that operate within or across the site; 2.6.2 The extent the development will impact on the functionality of the ESA; and 2.6.3 Loss of ecological connectivity (on site, and in relation to the broader landscape) due to the degradation and severing of ecological corridors or introducing barriers that impede migration and movement of flora and fauna. 2.7 Protected Areas as defined by the National Environmental Management: Protected Areas Act, 2004 including: 2.7.1 An opinion on whether the proposed development aligns with the objectives/purpose of the Protected Area and the zoning as per the Protected Area Management Plan; 2.8 Priority Areas for Protected Area Expansion, including: 2.8.1 The way in which in which the development will compromise or contribute to the expansion of the protected area network. 2.9 Strategic Water Source Areas (SWSA) including: 2.9.1 The impact(s) on the terrestrial habitat of a Strategic Water Source Area, and 2.9.2 The impacts of the development on the SWSA water quality and quantity (e.g. describing potential increased runoff leading to increased sediment load in water courses). 2.10Freshwater Ecosystem Priority Area (FEPA) sub catchments, including: 2.10.1 The impacts of the development on habitat condition and/or species in the FEPA sub catchment. 2.11Indigenous Forests, including: 2.11.1 Impact on the ecological integrity of the forest; 2.11.2 Extent of natural or near natural indigenous forest area lost. 3 The findings of the **Terrestrial Biodiversity Impact Assessment** must be written up in a Terrestrial Biodiversity Impact Assessment Report. This report must include as a minimum the following information: 3.1 Contact details and curriculum vitae of the specialist including SACNASP registration number and field of expertise and their curriculum vitae; 3.2 A signed statement of independence by the specialist; 3.3 Duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment; 3.4 A description of the methodology used to undertake the impact assessment and site inspection, including equipment and modelling used where relevant; 3.5 A description of the assumptions made and any uncertainties or gaps in knowledge or data as well as a statement of the timing and intensity of site inspection observations; 3.6 Areas not suitable for development, to be avoided during construction and operation (where relevant); 3.7 Additional environmental impacts expected from the proposed development based on those already evident on the site and a discussion on the cumulative impacts; 3.8 Impact management actions and impact management outcomes proposed by the specialist for inclusion in the EMPr; and 3.9 A motivation where the development footprint identified as per section 2.3 in this Table were not considered stating reasons why these were not being not considered.

	3.10A reasoned opinion, based on the findings of the specialist assessment, regarding the acceptability or not of the development and if the development should receive approval or not, and any conditions to which the statement is subjected. 4 The findings of the **Terrestrial Biodiversity Impact Assessment** must be incorporated into the Basic Assessment Report or the Environmental Impact Assessment Report, including the mitigation and monitoring measures as identified, which must be incorporated into the EMPr. A signed copy of the Assessment must be appended to the Basic Assessment Report or Environmental Assessment Report.
LOW SENSITIVITY RATING – for terrestrial biodiversity features	**1 General Information** 1.1 An applicant, intending to undertake an activity identified in the Scope of this Protocol, on a site identified as being of "low sensitivity" for terrestrial biodiversity on the national web based environmental screening tool must submit a **Terrestrial Biodiversity Compliance Statement** to the competent authority, unless: 1.1.1 The information gathered from the Initial Site Sensitivity Verification differs from that identified as having a "low" terrestrial biodiversity sensitivity by the national web based environmental screening tool and it is found to be of a "very high" sensitivity. 1.2 Should paragraph 1.1.1 apply, a **Terrestrial Biodiversity Impact Assessment** is to be undertaken and a report should be prepared in accordance with the requirements of a Terrestrial Biodiversity Impact Assessment. **2 Terrestrial Biodiversity Compliance Statement** 2.1 The **Terrestrial Biodiversity Compliance Statement**, must be prepared by a suitably qualified specialist in the field of ecological sciences, on the site being submitted as the preferred development site and must verify: 2.1.1 That the site is of "low" sensitivity for terrestrial biodiversity; and 2.1.2 Whether or not the proposed development will have any impact on the biodiversity feature. 3 The **Terrestrial Biodiversity Compliance Statement**, must contain, as a minimum, the following information: 3.1 Contact details and curriculum vitae of the specialist including SACNASP registration number and field of expertise; 3.2 A signed statement of independence by the specialist; 3.3 Baseline profile description of biodiversity and ecosystems, including the duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment; 3.4 Methodology used to verify the sensitivities of the terrestrial biodiversity on the national web based environmental screening; 3.5 Methodology used to undertake the site survey and prepare the Compliance Statement, including equipment and modelling used where relevant; 3.6 Where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMPr; 3.7 A description of the assumptions made and any uncertainties or gaps in knowledge or data as well as a statement of the timing and intensity of site inspection observations; and 3.8 Any conditions to which the statement is subjected.

	4 A signed copy of the full **Terrestrial Biodiversity Compliance Statement** must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.

3. BIODIVERSITY

3(b) - PROTOCOL FOR THE ASSESSMENT AND REPORTING OF ENVIRONMENTAL IMPACTS ON AQUATIC BIODIVERSITY

1. SCOPE

This protocol provides the criteria for the assessment and reporting of impacts on aquatic biodiversity for activities requiring environmental authorisation. The assessment requirements of this protocol are associated with a level of environmental sensitivity determined by the national web based environmental screening tool. For aquatic biodiversity the requirements are for landscapes or sites which support various levels of biodiversity. The relevant aquatic biodiversity data in the national web based environmental screening tool has been provided by the South African National Biodiversity Institute[8]. If any part of the proposed development falls within an area of "very high" sensitivity, the requirements prescribed for such sensitivity apply.

The national web based environmental screening tool can be accessed at: https://screening.environment.gov.za/screeningtool

2. REQUIREMENTS FOR THE ASSESSMENT AND REPORTING OF IMPACTS

Requirements for the assessment and reporting of impacts of development on aquatic biodiversity are set out in Table 1 below, and correlate to the sensitivity ratings contained in the national web based environmental screening tool. Prior to beginning the assessment, the current land use and the potential environmental sensitivity of the site as identified by the national web based environmental screening tool must be confirmed by undertaking an Initial Site Sensitivity Verification.

2.1 The Initial Site Sensitivity Verification must be undertaken by an environmental assessment practitioner or a registered specialist with expertise in the relevant environmental theme being considered.

2.2 The Initial Site Sensitivity Verification must be undertaken through the use of:

(a) a desk top analysis, using satellite imagery; and
(b) a preliminary on-site inspection to identify if there are any discrepancies with the current use of land and environmental status quo versus the environmental sensitivity as identified on the national web based environmental screening tool, such as new developments, infrastructure, indigenous/pristine vegetation, etc.

2.3 The outcome of the Initial 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 national web based environmental screening tool;
(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.

[8] The biodiversity dataset has been provided by the South African Biodiversity Institute. For details of the dataset, click on the options button to the right of the various biodiversity layers within the national web based environmental screening tool, in the Aquatic Biodiversity theme to view the metadata.

3. REQUIREMENTS FOR ENVIRONMENTAL ASSESSMENT

TABLE 1: REQUIREMENTS FOR THE ASSESSMENT AND REPORTING OF IMPACTS ON AQUATIC BIODIVERSITY FOR ACTIVITIES REQUIRING ENVIRONMENTAL AUTHORISATION

	1 General Information 1.1 An applicant intending to undertake an activity identified in the Scope of this Protocol on a site identified as being of "very high sensitivity" for aquatic biodiversity on the national web based environmental screening tool must submit an **Aquatic Biodiversity Impact Assessment**. 1.2 However, where the information gathered from the Initial Site Sensitivity Verification identified in section 2.1 of this Protocol or the specialist assessment differs from the designation of "very high" aquatic biodiversity sensitivity from the national web based environmental screening tool, and it is found to be of a "low" sensitivity, an aquatic biodiversity impact assessment is not required. 1.3 Should paragraph 1.2 apply, an **Aquatic Biodiversity Compliance Statement** is to be provided. An Environmental Assessment Practitioner or a suitably qualified and SACNASP registered specialist, as appropriate, must append to the **Aquatic Biodiversity Compliance Statement** a motivation and evidence (e.g. photographs) of the changed Aquatic Biodiversity sensitivity. **2 The Aquatic Biodiversity Impact Assessment** 2.1 The assessment must be undertaken by a suitably qualified and SACNASP registered specialist, within the preferred development site and on the preferred development[9] footprint. 2.2 Description of the preferred development site - The following aspects as a minimum must be considered in the baseline description: 2.2.1 A description of the aquatic biodiversity and ecosystems on the site, including: a. Aquatic ecosystem types; b. Presence of aquatic species and composition of aquatic species communities, their habitat, distribution and movement patterns; 2.2.2 Threat status, according to the national web based environmental screening tool of the species and ecosystems, including Listed Ecosystems, as well as locally important habitat types identified; 2.2.3 National and Provincial priority status of the aquatic ecosystem (i.e. is this a wetland or river Freshwater Ecosystem Priority Area (FEPA), a FEPA sub catchment, a Strategic Water Source Area (SWSA), a priority estuary, whether or not they are free-flowing rivers, wetland clusters, etc., a CBA or an ESA; including for all a description of the criteria for their given status; and
VERY HIGH SENSITIVITY RATING – For aquatic biodiversity features	

[9] Development footprint means the area within the site on which the development will take place and includes all ancillary developments for example roads and power lines which require vegetation clearance or which will be disturbed and for which the application has been submitted.

	2.2.4 A description of the Ecological Importance and Sensitivity of the aquatic ecosystem including: a. The description (spatially, if possible) of the ecosystem processes that operate in relation to the aquatic ecosystems on and immediately adjacent to the site (e.g. movement of surface and subsurface water, recharge, discharge, sediment transport, etc.); b. The historic ecological condition (reference) as well as Present Ecological State (PES) of rivers (in-stream, riparian and floodplain habitat), wetlands and/or estuaries in terms of possible changes to the channel, flow regime (surface and groundwater). 2.3 Identify any alternative development footprints within the preferred development site which would be of a "low" sensitivity as identified by the national web based environmental screening tool and verified through the Initial Site Sensitivity Verification; 2.4 Assessment of impacts - a detailed assessment of the potential impact(s) of the proposed development on the following very high sensitivity areas/ features: 2.4.1 Is the development consistent with maintaining the priority aquatic ecosystem in its current state and according to the stated goal? 2.4.2 Is the development consistent with maintaining the Resource Quality Objectives for the aquatic ecosystems present? 2.4.3 How will the development impact on fixed and dynamic ecological processes that operate within or across the site, including: a. Impacts on hydrological functioning at a landscape level and across the site which can arise from changes to flood regimes (e.g. suppression of floods, loss of flood attenuation capacity, unseasonal flooding or destruction of floodplain processes); and b. Change in the sediment regime (e.g. sand movement, meandering river mouth/estuary, changing flooding or sedimentation patterns) of the aquatic ecosystem and its sub-catchment; c. The extent of the modification in relation to the overall aquatic ecosystem (i.e. at the source, upstream or downstream portion, in the temporary / seasonal / permanent zone of a wetland, in the riparian zone or within the channel of a watercourse, etc.). d. Assessment of the risks associated with water use/s and related activities. 2.4.4 How will the development impact on the functionality of the aquatic feature, including: a. Base flows (e.g. too little/too much water in terms of characteristics and requirements of system); b. Quantity of water including change in the hydrological regime or hydroperiod of the aquatic ecosystem (e.g. seasonal to temporary or permanent; impact of over-abstraction or instream or off-stream impoundment of a wetland or river) c. Change in the hydrogeomorphic typing of the aquatic ecosystem (e.g. change from an unchannelled valley-bottom wetland to a channelled valley-bottom wetland). d. Quality of water (e.g. due to increased sediment load, contamination by chemical and/or organic effluent, and/or eutrophication) e. Fragmentation (e.g. road or pipeline crossing a wetland) and loss of ecological connectivity (lateral and longitudinal).

f. The loss or degradation of all or part of any unique or important features (e.g. waterfalls, springs, oxbow lakes, meandering or braided channels, peat soils, etc.) associated with or within the aquatic ecosystem.

2.4.5 How will the development impact on the functionality of the aquatic feature, including:

a. water including change in the hydrological regime or hydroperiod of the aquatic ecosystem (e.g. seasonal to temporary or permanent; impact of over-abstraction or instream or off-stream impoundment of a wetland or river)
b. Change in the hydrogeomorphic typing of the aquatic ecosystem (e.g. change from an unchannelled valley-bottom wetland to a channelled valley-bottom wetland).
c. Quality of water (e.g. due to increased sediment load, contamination by chemical and/or organic effluent, and/or eutrophication)
d. Fragmentation (e.g. road or pipeline crossing a wetland) and loss of ecological connectivity (lateral and longitudinal).
e. The loss or degradation of all or part of any unique or important features (e.g. waterfalls, springs, oxbow lakes, meandering or braided channels, peat soils, etc.) associated with or within the aquatic ecosystem.

2.4.6 How will the development impact on key ecosystem regulating and supporting services especially:

a. Flood attenuation;
b. Streamflow regulation;
c. Sediment trapping;
d. Phosphate assimilation;
e. Nitrate assimilation
f. Toxicant assimilation;
g. Erosion control; and
h. Carbon storage.

2.4.7 How will the development impact community composition (numbers and density of species) and integrity (condition, viability, predator-prey ratios, dispersal rates, etc.) of the faunal and vegetation communities inhabiting the site?

2.4.8 In addition to the above, where applicable, impacts to the frequency of estuary mouth closure should be considered, in relation to:

a. Size of the estuary;
b. Availability of sediment;
c. Wave action in the mouth;
d. Protection of the mouth;
e. Beach slope;
f. Volume of mean annual runoff (MAR);
g. Extent of saline intrusion (especially relevant to permanently open systems).

2.4.9 A motivation must be provided if there were development footprints identified as per paragraph 2.3 above that were identified as having a "low" biodiversity sensitivity and were not considered appropriate.

3 The findings of the **Aquatic Biodiversity Impact Assessment** must be written up in an Aquatic Biodiversity Impact Assessment Report.

This report must contain as a minimum the following information:

	3.1 Contact details and curriculum vitae of the specialist including SACNASP registration number and field of expertise and their curriculum vitae; 3.2 A signed statement of independence by the specialist; 3.3 The duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment; 3.4 The methodology used to undertake the impact assessment and site inspection, including equipment and modelling used, where relevant; 3.5 A description of the assumptions made and any uncertainties or gaps in knowledge or data as well as a statement of the timing and intensity of site inspection observations; 3.6 Areas not suitable for development, to be avoided during construction and operation (where relevant); 3.7 Additional environmental impacts expected from the proposed development based on those already evident on the site and a discussion on the cumulative impacts; 3.8 A suitable construction and operational buffer for the aquatic ecosystem, using the accepted protocol; 3.9 Impact management actions and impact management outcomes proposed by the specialist for inclusion in the EMPr; 3.10A motivation where the development footprint identified as per 2.3 were not considered stating reasons why these were not being not considered; and 3.11A reasoned opinion, based on the finding of the specialist assessment, regarding the acceptability or not, of the development and if the development should receive approval, and any conditions to which the statement is subjected. 4 The findings of the **Aquatic Biodiversity Impact Assessment** must be incorporated into the Basic Assessment Report or the Environmental Impact Assessment Report, including the mitigation and monitoring measures as identified, which must be incorporated into the EMPr. A signed copy of the Assessment must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.
LOW SENSITIVITY RATING – For aquatic biodiversity features	**1 General Information** 1.1 An applicant, intending to undertake an activity identified in the Scope of this Protocol, on a site identified as being of "low sensitivity" for aquatic biodiversity on the national web based environmental screening tool must submit an **Aquatic Biodiversity Compliance Statement** to the competent authority. 1.2 Where the information gathered from the Initial Site Sensitivity Verification differs from that identified as having a "low" aquatic biodiversity sensitivity by the national web based environmental screening tool and it is found to be of a "very high" sensitivity an Aquatic Biodiversity Compliance Statement is not required. 1.3 Should paragraph 1.2 apply, an **Aquatic Biodiversity Impact Assessment** is to be undertaken and a report prepared in accordance with the requirements of an Aquatic Biodiversity Impact Assessment.

	2 Aquatic Biodiversity Compliance Statement 2.1 The **Aquatic Biodiversity Compliance Statement**, must be prepared by a suitably qualified specialist in the field of aquatic sciences and must verify: 2.1.1 That the site is of "low" sensitivity for aquatic biodiversity; and 2.1.2 Whether or not the proposed development will have an impact on the aquatic features. 3 The **Aquatic Biodiversity Compliance Statement**, must contain, as a minimum, the following information: 3.1 Contact details and curriculum vitae of the specialist including SACNASP registration number and field of expertise; 3.2 A signed statement of independence by the specialist; 3.3 Baseline profile description of biodiversity and ecosystems, including the duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment; 3.4 Methodology used to verify the sensitivities of the aquatic biodiversity features on the national web based environmental screening tool; 3.5 Methodology used to undertake the Initial Site Sensitivity Verification and preparation of the Compliance Statement, including equipment and modelling used, where relevant; 3.6 Where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMPr; 3.7 A description of the assumptions made and any uncertainties or gaps in knowledge or data as well as a statement of the timing and intensity of site inspection observations; and 3.8 Any conditions to which the statement is subjected. 4 A signed copy of the full Aquatic Biodiversity Compliance Statement must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.

4. NOISE

4(a) - PROTOCOL FOR THE ASSESSMENT AND REPORTING OF NOISE IMPACTS

1. SCOPE

This protocol provides the criteria for the assessment and reporting of noise impacts for activities requiring environmental authorisation. These requirements are set out in the Table 1 below, which shows how these requirements correlate with the sensitivity ratings as contained in the national web based environmental screening tool. If any part of the proposed development falls within an area of "very high" sensitivity, the requirements prescribed for such sensitivity apply.

The national web based environmental screening tool can be accessed at: https://screening.environment.gov.za/screeningtool

2. REQUIREMENTS FOR THE INITIAL SITE SENSITIVITY VERIFICATION

Requirements for the assessment and reporting of noise impacts are set out in the Table 1 below and correlate with the sensitivity ratings contained in the national web based environmental screening tool. Prior to the assessment, the current use of the land and the potential environmental sensitivity of the site as identified by the national web based environmental screening tool must be confirmed by undertaking an Initial Site Sensitivity Verification.

2.1 The Initial Site Sensitivity Verification must be undertaken by an environmental assessment practitioner or a registered specialist with expertise in the relevant environmental theme being considered.

2.2 The Initial Site Sensitivity Verification must be undertaken through the use of:

(a) a desk top analysis, using satellite imagery; and
(b) a preliminary on-site inspection to identify if there are any discrepancies with the current use of land and environmental status quo versus the environmental sensitivity as identified on the national web based environmental screening tool, such as new developments, infrastructure, indigenous/pristine vegetation, etc.

2.3 The outcome of the Initial 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 national web based environmental screening tool;
(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. REQUIREMENTS FOR ENVIRONMENTAL ASSESSMENT

TABLE 1: REQUIREMENTS FOR THE ASSESSMENT AND REPORTING OF NOISE IMPACTS FOR ACTIVITIES REQUIRING ENVIRONMENTAL AUTHORISATION

VERY HIGH SENSITIVITY RATING – High likelihood of a high negative noise impact (10 dBA or more above ambient) **HIGH SENSITIVITY RATING** - High likelihood of a medium negative noise impact (5 to 10 dBA above ambient) **MEDIUM SENSITIVITY RATING** – Potential for low negative noise impact (0 to 5 dBA above ambient)	**1. General Information** 1.1 An applicant intending to undertake an activity identified in the Scope of this Protocol for a site identified by the national web based environmental screening tool as being of "very high", "high" or "medium" sensitivity for noise must submit a **Noise Assessment.** 1.2 Where the information gathered from the Initial Site Sensitivity Verification contemplated in section 2.1 of this Protocol or the specialist assessment differs from the designation of "very high", "high" or "medium" sensitivity from the national web based environmental screening tool and it is found to be of a "low" sensitivity a Noise Assessment is not required. 1.3 Should 1.2 apply, a **Noise Compliance Statement** is to be provided. An Environmental Assessment Practitioner or a noise specialist, must append to the **Noise Compliance Statement** a motivation and evidence (e.g. photographs of no buildings near the proposed development footprint) of the different noise sensitivity. **2. The Noise Assessment** 2.1 The assessment must be undertaken by a suitably qualified noise specialist on the site being submitted as the preferred development site. 2.2 The assessment must be undertaken based on a site inspection as well as applying the noise standards and methodologies stipulated in SANS 10103:2008 and SANS 10328:2008 for residential and non-residential areas as defined in these standards. 2.3 A baseline description must be provided of the potential receptors and existing ambient noise levels. As a minimum, this description must include the following: a. Current ambient sound levels recorded at relevant locations (e.g. receptors and proposed new noise sources) over a minimum of two nights and that provide a representative measurement of the ambient noise climate, with each sample being a minimum of ten minutes, and the approximate wind speed at the time of the measurement must be recorded. b. Mapped distance of the receiver from the proposed development that is the noise source. c. Calculation of noise impact from the noise source. 2.4 Assessment of impacts done in accordance to SANS 10103:2008 and SANS 10328:2008 including the following aspects which must be considered as a minimum in the predicted impact of the proposed development: a. Projected changes in noise levels as a result of the construction, operation and decommissioning of the development to the nearest receptors using industry accepted models and forecasts. 3 The findings of the **Noise Assessment** must be written up in a **Noise Report.** 3.1 This report must contain, as a minimum, the following information:

	3.1.1 Details and relevant qualifications and experience of the noise specialist/s preparing the assessment including a curriculum vitae; 3.1.2 A signed statement of independence by the specialist; 3.1.3 The duration and date of the site inspection and the relevance of the season and weather conditions to the outcome of the assessment; 3.1.4 A description of the methodology used to undertake the on-site assessment inclusive of the equipment and models used, as relevant, together with results of the noise assessment; 3.1.5 A map showing the proposed development footprint (including supporting infrastructure) with a 50 m buffered development envelope; 3.1.6 Confirmation or not from the specialist that all reasonable measures have been considered in the micro-siting of the development to minimise disturbance of receptors; 3.1.7 A substantiated statement from the specialist on the acceptability of the development and a recommendation on the approval or not of the development; 3.1.8 Identify any alternative development footprints within the preferred site and where any of these alternative development footprints are located in a "low" sensitivity as identified by the national web based environmental screening tool, and motivate as to why these potential development footprints were not considered appropriate; 3.1.9 Any conditions to which the statement is subjected; 3.1.10 Where identified, proposed impact management outcomes or any monitoring requirements for inclusion in the EMPr; and 3.1.11 A description of the assumptions made and any uncertainties or gaps in knowledge or data. 4 The findings of the **Noise Assessment** must be incorporated into the Basic Assessment Report or the Environmental Impact Assessment Report including the mitigation and monitoring measures as identified for inclusion in the EMPr. A signed copy of the full Noise Assessment must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.
LOW SENSITIVITY RATING - No significant noise impact expected	**1. General Information** 1.1 An applicant intending to undertake an activity identified in the Scope of this Protocol proposed on a site identified by the national web based environmental screening tool as being of "low" sensitivity for Noise must submit a **Noise Compliance Statement.** 1.2 Where the information gathered from the Initial Site Sensitivity Verification contemplated in section 2.1 of this Protocol differs from that identified as having a "low" Noise sensitivity by the national web based environmental screening tool and it is found to be of a "very high", "high" or "medium" sensitivity, then a Noise Compliance Statement is not required. 1.3 Should paragraph 1.2 apply, a **Noise Assessment** is to be undertaken and a report prepared in accordance with the requirements of a Noise Assessment. **2. Noise Compliance Statement** 2.1 The **Noise Compliance Statement** must be prepared by an Environmental Assessment Practitioner or a suitably qualified noise specialist, on the site being submitted as the preferred development site and the preferred development footprint and must indicate whether or not the proposed development will have an unacceptable negative impact on the noise receptors of the site or not.

	2.2 Identify any alternative development footprints within the proposed development site which would be of "low" sensitivity as identified by the national web based environmental screening tool and motivate as to why these potential development footprints were not considered appropriate. 3. **The Noise Compliance Statement** must contain, as a minimum, the following information: 3.1 Details and relevant qualifications and expertise of the noise specialist preparing the statement including a curriculum vitae; 3.2 A signed statement of independence by the specialist; 3.3 A map showing the proposed development footprint (including supporting infrastructure) with a 50 m buffered development envelope, overlaid on the sensitivity map generated by the national web based environmental screening tool; 3.4 Confirmation from the specialist that all reasonable measures have been taken through micro-siting to minimize disturbance to receptors; 3.5 A substantiated statement from the noise specialist/environmental assessment practitioner on the acceptability of the development and a recommendation on the approval or not of the development; 3.6 Any conditions to which the statement is subjected; 3.7 Where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMPr; and 3.8 A description of the assumptions made and any uncertainties or gaps in knowledge or data as well as a statement of the timing and intensity of site inspection observations. 4. A signed copy of the **Noise Compliance Statement** must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.

5. DEFENCE

5(a) - PROTOCOL FOR THE ASSESSMENT AND REPORTING OF ENVIRONMENTAL IMPACTS ON DEFENCE INSTALLATIONS

1. SCOPE

This protocol provides the criteria for the assessment and reporting of impacts on defence installations for activities requiring environmental authorisation. Requirements for the assessment and reporting of impacts on defence installations are set out in the Table 1 below, which shows how these requirements correlate with the sensitivity ratings as contained in the national web based environmental screening tool.

The national web based environmental screening tool can be accessed at: https://screening.environment.gov.za/screeningtool

2. REQUIREMENTS FOR ENVIRONMENTAL ASSESSMENT

TABLE 1: REQUIREMENTS FOR THE ASSESSMENT AND REPORTING OF IMPACTS ON DEFENCE INSTALLATIONS FOR ACTIVITIES REQUIRING ENVIRONMENTAL AUTHORISATION

VERY HIGH SENSITIVITY RATING - high likelihood for negative impacts on the defence installation. In-depth assessment of the potential impacts and mitigation measures are likely to be required before development can be considered in these areas.	**1. General Information** 1.1 An applicant intending to undertake an activity identified in the Scope of this Protocol proposed on a site identified by the national web based environmental screening tool as being of "very high", "high", "medium" or "low" sensitivity for defence must submit a **Defence Compliance Statement**. **2. Defence Compliance Statement** The **Defence Compliance Statement** must be prepared by an Environmental Assessment Practitioner on the site being submitted as the preferred development site and must indicate whether or not the proposed development will have an unacceptable negative impact on defence installations. 3. The **Defence Compliance Statement** must contain, as a minimum, the following information:
HIGH SENSITIVITY RATING - potential for negative impacts on the defence 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 defence installation, and if there are impacts there is a high likelihood of mitigation. Further assessment of the potential impacts may not be required.	3.1 A comment, in writing, from the Obstacle Evaluation Committee (OEC) confirming no unacceptable impact on military areas of interest. 3.2 Should the comment from the OEC require further assessment, a copy of the assessment report and mitigation measures is to be attached with the Compliance Statement as part of the Basic Assessment Report or Environmental Impact Assessment Report. The assessment must be in accordance with the requirements stipulated by the OEC. 4. Inputs from the OEC, if provided within prescribed timeframes in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, will be considered by the relevant competent authority for decision making. If no inputs are provided by the OEC within the prescribed timeframes, then the EAP must provide evidence of engagement with the relevant officials at the OEC and timeous requests for inputs. 5. A signed copy of the full Defence Compliance Statement must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.
LOW SENSITIVITY RATING - No negative impacts on the defence installation are expected in low sensitivity areas. It is unlikely for further assessment and mitigation measures to be required.	

6. CIVIL AVIATION

6(a) - PROTOCOL FOR THE ASSESSMENT AND REPORTING OF ENVIRONMENTAL IMPACTS ON CIVIL AVIATION INSTALLATIONS

1. SCOPE

This protocol provides the criteria for the assessment and reporting of impacts on civil aviation installations for activities requiring environmental authorisation. Requirements for the assessment and reporting of impacts on civil aviation installations are set out below, which shows how these requirements correlate with the sensitivity ratings as contained in the national web based environmental screening tool.

The national web based environmental screening tool can be accessed at: https://screening.environment.gov.za/screeningtool

2. REQUIREMENTS FOR ENVIRONMENTAL ASSESSMENT

TABLE 1: REQUIREMENTS FOR THE ASSESSMENT AND REPORTING OF IMPACTS ON CIVIL AVIATION FACILITIES FOR ACTIVITIES REQUIRING ENVIRONMENTAL AUTHORISATION

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. **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.	**1. General Information** 1.1 An applicant intending to undertake an activity identified in the Scope of this Protocol, proposed on a site identified by the national web based environmental screening tool as being of "very high", "high", "medium" or "low" sensitivity for civil aviation must submit a Civil **Aviation Compliance Statement.** **2. Civil Aviation Compliance Statement** The **Civil Aviation Compliance Statement** must be prepared by an Environmental Assessment Practitioner for the site being submitted as the preferred development site and must indicate whether or not the proposed development will have an unacceptable negative impact on civil aviation installations. 3. The **Civil Aviation Compliance Statement** must contain, as a minimum, the following information: 3.1 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.

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.	3.2 Should comment from the SACAA require further assessment, a copy of the assessment report and mitigation measures is to be attached with the Compliance Statement as part of the Basic Assessment Report (BAR) or Environmental Impact Assessment Report (EIAR). The assessment must be in accordance with the requirements stipulated by the SACAA. 4. Inputs from the SACAA, if provided within prescribed timeframes in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), will be considered by the relevant competent authority for decision making. If no inputs are provided by the SACAA within the prescribed timeframes, then the EAP must provide evidence of engagement with the relevant officials at SACAA and timeous requests for inputs. 5. A signed copy of the **Civil Aviation 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.	