
ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

Assessment Report for the proposed Housing Development on Portion 38 of Farm 136, Tergniet, Mossel Bay

TERMS OF REFERENCE TO UNDERTAKE AN AGRICULTURE

1 Introduction

The Scope of Work for this specialist study includes an Impact Assessment for the development that will consist of 133 units (was originally 144 units) with four different typologies on either side of Robertson Avenue. The proposed development will also include the development and installation of associated structures and infrastructure, including engineering services. The total erven area covered in Site A will be approximately 3.13Ha and approximately 2.83Ha in Site B. The property is 10.1362 Ha in total, but not all is developable, due to the Robertson Avenue that separates the property and associated servitudes.

Please ensure your report conforms to the relevant DFFE Protocol and clearly state:

- If a Compliance Statement or a Full Assessment is required;
- Comparison between the Screening Tool Sensitivity rating vs the specialist sensitivity rating
- Supply a 2-pager Site Sensitive Verification Report as annexure to the specialist report.

2 Background

Mr. Pieter de Clerk would like to establish a residential development on Portion 38 of Farm No. 136 ("the property") in Tergniet, Western Cape. The property is located inside the urban edge and is bound by the railway line to the south and existing residential erven on the other boundaries. Robertson Avenue separates the property into two sections, the Western Site (herein after referred to as Site A) and the Eastern Site (herein after referred to as Site B). This property is located approximately 500 m east of the coastal settlement of Tergniet and approximately 660 m south of the N2 highway. The closest perennial water resource is the Great Brak River estuary, approximately 2.4 km east of the property. The property is 10.1362 Ha in total, but not all is developable, due to the Robertson Avenue that separates the property and associated servitudes.

3 Location

The project is proposed on a development area up to 10.1362 ha located on on Portion 38 of Farm No. 136 ("the property") in Tergniet, Western Cape. The site can be accessed from the existing Roberson Avenue.

Site location - Surveyor-general 21 digit site code:

C	0	5	1	0	0	0	0	0	0	0	0	0	1	3	6	0	0	0	3	8
1	2			3				4								5				



4 Desired Approach for a Specialist Study:

- Outline the study approach
- Identify and describe assumptions
- Identify sources of information
- Perform gap analysis
- Describe affected environment
- Describe nature of effects
- Perform sensitivity analysis
- Identify current and future risks
- Quantify and describe the potential impacts
- Assess and evaluate the potential impacts
- Identify and assess alternatives
- Propose and evaluate mitigation measures to decrease the proposed potential impacts
- Summarise impacts after mitigation
- Propose monitoring programme
- Make recommendations and mitigations for inclusion in an Environmental Management Programme (EMPr)

5 General Requirements for Specialist Reports:

The specialist reports should supply a non-technical summary of the studies, as many interested and/or affected



parties are not skilled. All writing should be done in an impartial, factual manner, using undemonstrative language. The specialist's language should indicate neither support of nor opposition to the proposal but should remain neutral at all times.

Compilation of the reports should be guided by the Environmental Impact Assessment Regulations (GG 33306, GN R. 543, dated 18 June 2010, in terms of the National Environmental Management Act (Act No 107 of 1998)) as well as the Protocols.

Reports should include the following:

- a) Executive summary;
- b) Definition of scope, including the purpose for which the report was prepared for;
- c) Relevant legislation and guidelines considered during the assessment;
- d) The date and season of the site investigation and the relevance of the season to the outcome of the assessment;
- e) Description of research methodology, including:
 - i. Review of available information
 - ii. Establishment of baseline conditions
 - iii. Field surveys and data collection
- f) Methodology adopted in preparing the report, including:
 - i. Description of assumptions;
 - ii. Uncertainties or knowledge gaps;
 - iii. Criteria used.
- g) Identification and prediction of impacts, including:
 - i. Description of findings;
 - ii. Potential implications of the impact of the proposed activity on the environment during construction, operation and decommissioning;
 - iii. Identification of alternatives;
 - iv. Identification of any areas to be avoided, including buffers;
 - v. Identification of cumulative impacts;
 - vi. Consideration of the no-go option;
 - vii. Identification of any fatal flaws in the proposed project or site.
- h) Results, recommendations, mitigation and monitoring requirements
 - i. Any mitigation measures for inclusion in the EMPr
 - ii. Any conditions for inclusion in the Environmental Authorisation
 - iii. Any monitoring requirements for inclusion in the EMPr or Environmental Authorisation
- i) Maps, figures, tables and graphs
 - i. Map superimposing the activity, including the associated structures and infrastructure on the environmental sensitivities of the site - including areas to be avoided, including buffers;
 - ii. All data files / kml / shape files need to be forwarded to DSA
 - iii. Maps must be properly referenced, with a north arrow and scale.
 - iv. Impact Assessment tables must be present in the format as indicated in Appendix 1: Risk Assessment Methodology
- j) Description of any assumptions made and any uncertainties or gaps in knowledge;
- k) A reasoned opinion:
 - i. As to whether the proposed activity or portions thereof should be authorised
 - ii. If the opinion is that the proposed activity or portion thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the Closure Plan
- l) Description of consultation processes undertaken during the course of preparing the Specialist Report;



- m) Summary and copies of comments received during consultation processes and, where applicable, responses thereto;
- n) Any other information requested by the competent authority or the EAP;
- o) Complete reference lists;
- p) Sources of information;
- q) Details of the specialist who prepared the reports;
- r) Curriculum Vitae, indicating expertise of the specialist to conduct the specialist studies;
- s) Declaration of the independence of the person compiling the reports on the required National or Provincial forms.
- t) Latest copy of proof of membership to SACNASP or any other Professional Association.

6 Specific Requirements for Impact Reports:

In addition to the requirements listed above, an agricultural impact report should include an agricultural potential study. Essential information for an agricultural potential study includes but is not limited to the following:

- a) A detailed soil survey/assessment, incorporating a radius of 50 m surrounding the site
 - Scale of 1:10 000 or finer
 - Soil profile
 - Identification of soil forms present on site
 - The size of the area where a particular soil form is found
 - GPS readings of soil survey points
 - Climatological information
 - Soil depth at each survey point
 - Soil colour
 - Clay content (percentage)
 - Slope of the site
 - Limiting factors
 - A detailed map indicating the locality of the soil forms within the specified area
 - The size of the site
- b) Exact locality of the site
 - Current activities, developments and buildings on the site
 - Surrounding developments/land uses and activities within a radius of 500 m of the site
 - Access routes and the condition thereof
 - Current status of the land (including erosion, vegetation and a degradation assessment)
 - Possible land use options for the site
 - Water availability, source and quality (if available)
 - Detailed descriptions of why agriculture should or should not be the land use of choice
 - Impact of the change of land use on the surrounding area
 - Discussion on the agricultural potential in terms of the soils, infrastructure available, water availability and climate
 - A shape file containing the soil forms and relevant attribute data as depicted on the map
 - All possible direct, indirect and cumulative agricultural impacts that could result from the proposed projects, indicating whether these impacts are related to the design, construction or operational phases of the proposed projects, and recommending measures aimed at avoiding and/or mitigating each potential impact
 - A table identifying all possible direct, indirect and cumulative agricultural impacts that could result from the proposed project, indicating whether these impacts are related to the design, construction or



operational phases of the proposed project, and recommending measures aimed at avoiding and/or mitigating each potential impact

- An assessment of the significance of the identified impacts both before and after mitigation, using the provided risk assessment matrix
- A statement declaring the specialist's level of confidence with regard to the recommendations and predictions made in respect of the mitigation and resulting intensity of each impact, depending on the specialist's knowledge as well as the availability of information

Agricultural potential studies should contain sufficient information to facilitate decision-making by the Department of Agriculture, Forestry and Fisheries with regard to long-term lease agreements on agricultural land under the Subdivision of Agricultural Land Act, 1970 (Act 70 of 1970).

Studies should contain sufficient information to facilitate decision-making by the Competent Authority.

7 Reporting

- Report on the identification of anticipated and cumulative impacts the operational units of the proposed project activity may have on the site for all 3 phases of the project:
 - Construction phase
 - Operation phase
 - Decommissioning phase
- Consider alternatives, should any significant sites be impacted adversely by the proposed project.
- Ensure that all studies and results comply with the relevant legislation.

8 Data provided

- The route and alternatives will be provided in .shp format as well as .kml format to the specialist by the applicant;
- Additional research and studies obtained by DSA will be provided to the specialist;
- DSA will introduce the specialist to the other appointed specialists for this study in order to assess cumulative effects.
- Technical information regarding the project will be provided to the specialist by DSA.

9 Project deliverables

The following deliverables are required:

- All shp and kml files relevant to the assessment.
- One draft and one final copy of the report – electronically (MS Word).
- A final report will be required approximately two weeks after submission of the draft report (once comments have been provided by the client and DSA).

10 Risk and Impact Assessment Phase

- The impacts identified must be assessed according to the EIA regulations, taking into account cumulative impacts of all sites, including alternative sites. Describe and assess the impacts (positive and negative) associated with the proposed development in order to be able to determine the risks posed by the activities associated with both the Construction and Operational Phases.
- Determine and rate the likely impacts associated with the proposed development as per **Appendix A**;



and

- c) Recommend mitigation measures and management actions, to reduce the severity of the negative impacts and to enhance the positive impacts.

APPENDIX A

Risk assessment methodology

Criteria by which impacts is to be assessed

ASPECT	IMPACT RATING										
Status of the impact: A statement of whether the impact is positive (a benefit), negative (a cost), or neutral.											
Direct impacts	Impacts that are caused directly by the activity and generally occur at the same time and at the place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally obvious and quantifiable.										
Indirect impacts	Impacts of an activity are indirect or induced changes that may occur as a result of the activity. These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken, or which occur at a different place as a result of the activity.										
Cumulative impacts	Impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities. Cumulative impacts can occur from the collective impacts of individual minor actions over a period of time and can include both direct and indirect impacts.										
Nature of the impact: The evaluation of the nature is impact specific. Most negative impacts will remain negative, however, after mitigation, significance should reduce: • Positive. • Negative.											
Extent: A description of whether the impact would occur on a scale limited to within the study area (local), limited to within 5 km of the study area (area); on a regional scale i.e. Local Municipality (region); or would occur at a national or international scale. <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>Local</td><td>1</td></tr> <tr><td>Area</td><td>2</td></tr> <tr><td>Region</td><td>3</td></tr> <tr><td>National</td><td>4</td></tr> <tr><td>International</td><td>5</td></tr> </table>		Local	1	Area	2	Region	3	National	4	International	5
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Area	2										
Region	3										
National	4										
International	5										
Duration: A prediction of whether the duration of the impact would be Immediate and once-off (less than one month), more than once, but short term (less than one year), regular, medium term (1 to 5 years), Long term (6 to 15 years), Project life/permanent (> 15 years, with the impact ceasing after the operational life of the development or should be considered as permanent). <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>Immediate</td><td>1</td></tr> <tr><td>Short term</td><td>2</td></tr> <tr><td>Medium term</td><td>3</td></tr> <tr><td>Long term</td><td>4</td></tr> <tr><td>Project life/permanent</td><td>5</td></tr> </table>		Immediate	1	Short term	2	Medium term	3	Long term	4	Project life/permanent	5
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Criteria by which impacts is to be assessed

ASPECT | IMPACT RATING

Severity(extent +duration + intensity)

Intensity: This provides an order of magnitude of whether or not the intensity (magnitude/size/frequency) of the impact would be negligible, low, medium, high or very high. This is based on the following aspects:

- an assessment of the reversibility of the impact (permanent loss of resources, or impact is reversible after project life);
- whether or not the aspect is controversial;
- an assessment of the irreplaceability of the resource loss caused by the activity (whether the project will destroy the resources which are easily replaceable, or the project will destroy resources which are irreplaceable and cannot be replaced);
- the level of alteration to the natural systems, processes or systems.

Negligible	The impact does not affect physical, biophysical or socio-economic functions and processes.	1
Low/potential harmful	The impact has limited impacts on physical, biophysical or socio-economic functions and processes.	2
Medium/slightly harmful	The impact has an effect on physical, biophysical and socio-economic functions and processes, but in such a way that these processes can still continue to function albeit in a modified fashion.	3
High/Harmful	Where the physical, bio-physical and socio-economic functions and processes are impacted on in such a way as to cause them to temporarily or permanently cease.	4
Very high/Disastrous	Where the physical, bio-physical and socio-economic functions and processes are highly impacted on in such a way as to cause them to permanently cease.	5

Incidence (frequency + probability)

Frequency: This provides a description of any repetitive, continuous or time-linked characteristics of the impact: Once Off (occurring any time during construction or operation); Intermittent (occurring from time to time, without specific periodicity); Periodic (occurring at more or less regular intervals); Continuous (without interruption).

Once Off	Once	1
Rare	1/5 to 1/10 years	2
Frequent	Once a year	3
Very frequent	Once a month	4
Continuous	≥ Once a day/ per shift	5

Criteria by which impacts is to be assessed

ASPECT	IMPACT RATING												
Probability of occurrence: A description of the chance that consequences of that selected level of severity could occur during the exposure.													
Highly unlikely	The probability of the impact occurring is highly unlikely due to its design or historic experience. 1												
Improbable	The probability of the impact occurring is low due to its design or historic experience. 2												
Probable	There is a distinct probability of the impact occurring 3												
Almost certain	It is most likely that the impact will occur 4												
Definite	The impact will occur regardless of any prevention measures 5												
Risk rating	The risk rating is calculated based on input from the above assessments. The incidence of occurrence is calculated by adding the Extent of the impact to the duration of the impact. The Severity of the impact is calculated based on input from the extent of the impact, the duration and the intensity. Risk = Severity (extent +duration + intensity) x Incidence (frequency + probability) Significance: The significance of the risk based on the identified impacts has been expressed qualitatively as follows: ○ low – the impact is of little importance/insignificant, but may/may not require minimal management ○ medium - the impact is important, management is required to reduce negative impacts to acceptable levels. ○ high - the impact is of great importance, negative impacts could render development options or the entire project unacceptable if they cannot be reduced to acceptable levels and/or if they are not balanced by significant positive impacts, management of negative impacts is essential. <table border="1"> <tr> <td>Low risk</td><td>0 – 50</td></tr> <tr> <td>Medium risk</td><td>51 – 100</td></tr> <tr> <td>High risk</td><td>101 – 150</td></tr> <tr> <td>Low positive</td><td>0 – 50</td></tr> <tr> <td>Medium positive</td><td>51 – 100</td></tr> <tr> <td>High positive</td><td>101 – 150</td></tr> </table>	Low risk	0 – 50	Medium risk	51 – 100	High risk	101 – 150	Low positive	0 – 50	Medium positive	51 – 100	High positive	101 – 150
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ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

**Assessment Report for the proposed Housing Development on
Portion 38 of Farm 136, Tergniet, Mossel Bay**

TERMS OF REFERENCE TO UNDERTAKE AN AQUATIC ASSESSMENT

1 Introduction

The Scope of Work for this specialist study includes an Impact Assessment for the development that will consist of 133 units (was originally 144 units) with four different typologies on either side of Robertson Avenue. The proposed development will also include the development and installation of associated structures and infrastructure, including engineering services. The total erven area covered in Site A will be approximately 3.13Ha and approximately 2.83Ha in Site B. The property is 10.1362 Ha in total, but not all is developable, due to the Robertson Avenue that separates the property and associated servitudes.

Please ensure your report conforms to the relevant DFFE Protocol and clearly state:

- If a Compliance Statement or a Full Assessment is required;
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Mr. Pieter de Clerk would like to establish a residential development on Portion 38 of Farm No. 136 ("the property") in Tergniet, Western Cape. The property is located inside the urban edge and is bound by the railway line to the south and existing residential erven on the other boundaries. Robertson Avenue separates the property into two sections, the Western Site (herein after referred to as Site A) and the Eastern Site (herein after referred to as Site B). This property is located approximately 500 m east of the coastal settlement of Tergniet and approximately 660 m south of the N2 highway. The closest perennial water resource is the Great Brak River estuary, approximately 2.4 km east of the property. The property is 10.1362 Ha in total, but not all is developable, due to the Robertson Avenue that separates the property and associated servitudes.

3 Location

The project is proposed on a development area up to 10.1362 ha located on on Portion 38 of Farm No. 136 ("the property") in Tergniet, Western Cape. The site can be accessed from the existing Roberson Avenue.

Site location - Surveyor-general 21 digit site code:

C	0	5	1	0	0	0	0	0	0	0	0	0	1	3	6	0	0	0	3	8
1	2			3				4								5				



4 Desired Approach for a Specialist Study:

- Outline the study approach
- Identify and describe assumptions
- Identify sources of information
- Perform gap analysis
- Describe affected environment
- Describe nature of effects
- Perform sensitivity analysis
- Identify current and future risks
- Quantify and describe the potential impacts
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- e) Description of research methodology, including:
 - i. Review of available information
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 - iii. Field surveys and data collection
- f) Methodology adopted in preparing the report, including:
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- h) Results, recommendations, mitigation and monitoring requirements
 - i. Any mitigation measures for inclusion in the EMPr
 - ii. Any conditions for inclusion in the Environmental Authorisation
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- i) Maps, figures, tables and graphs
 - i. Map superimposing the activity, including the associated structures and infrastructure on the environmental sensitivities of the site - including areas to be avoided, including buffers;
 - ii. All data files / kml / shape files need to be forwarded to DSA
 - iii. Maps must be properly referenced, with a north arrow and scale.
 - iv. Impact Assessment tables must be present in the format as indicated in Appendix 1: Risk Assessment Methodology
- j) Description of any assumptions made and any uncertainties or gaps in knowledge;
- k) A reasoned opinion:
 - i. As to whether the proposed activity or portions thereof should be authorised
 - ii. If the opinion is that the proposed activity or portion thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the Closure Plan
- l) Description of consultation processes undertaken during the course of preparing the Specialist Report;



- m) Summary and copies of comments received during consultation processes and, where applicable, responses thereto;
- n) Any other information requested by the competent authority or the EAP;
- o) Complete reference lists;
- p) Sources of information;
- q) Details of the specialist who prepared the reports;
- r) Curriculum Vitae, indicating expertise of the specialist to conduct the specialist studies;
- s) Declaration of the independence of the person compiling the reports on the required National or Provincial forms.
- t) Latest copy of proof of membership to SACNASP or any other Professional Association.

6 Specific Requirements for Impact Reports:

Essential information for the assessment includes but is not limited to the following:

- a) A detailed quality survey/assessment, incorporating the legal required surrounding areas;
- b) Current baseline surroundings / state;
- c) A table identifying all possible direct, indirect and cumulative impacts that could result from the proposed project, indicating whether these impacts are related to the design, construction or operational phases of the proposed project, and recommending measures aimed at avoiding and/or mitigating each potential impact;
- d) An assessment of the significance of the identified impacts both before and after mitigation, using the provided risk assessment matrix (**Appendix A**);
- e) A statement declaring the specialist's level of confidence with regard to the recommendations and predictions made in respect of the mitigation and resulting intensity of each impact, depending on the specialist's knowledge as well as the availability of information.
- f) Ensure that relevant fieldwork is conducted within the prescribed season (summer) as per the required biodiversity guidelines.
- g) Conduct a desktop survey of observed and expected threatened, near-threatened plant species, including plant species of conservation concern (e.g. protected species) on the study site;
- h) In addition to the requirements listed above, essential information for an aquatic biodiversity study should include but is not limited to the following:
 - i) To characterize the biotic integrity of the aquatic ecosystems at selected aquatic assessment sites associated with the proposed project; including macro-invertebrates, fish, diatoms, riparian vegetation and surface water quality;
 - j) To evaluate the extent of site-related effects in terms of selected ecological indicators;
 - k) To identify impacts (whether positive and/or negative), associated with the proposed project;
 - l) To provide mitigation measures and recommendations;
- m) Providing advice on where monitoring points should be located to monitor potential impacts for the life of the operation.
- n) shape file containing the Aquatic biodiversity assessed and relevant attribute data as depicted on the maps
- o) All possible direct, indirect and cumulative aquatic impacts that could result from the proposed projects, indicating whether these impacts are related to the design, construction or operational phases of the proposed projects, and recommending measures aimed at avoiding and/or mitigating each potential impact
- p) Sensitivity Map of all areas to be avoided with appropriate buffers, if necessary.

- q) Identify and record the main species that occur within the project area;
- r) Where possible identify any species of specific concern (SSC);
- s) Record any species encountered through opportunistic sightings and active searching;
- t) Assess the extent of alien species over the site, and associated risks of alien invasion as a result of any proposed development;
- u) Identify any significant landscape features or rare or important ecological associations such as wetlands or rocky areas that might support rare or important ecological associations;
- v) Place the project area within the biodiversity context of the wider area in terms of animals, conservation areas and Critical Biodiversity Areas as mapped by existing guidelines both nationally and provincially;
- w) Determine and map the sensitivity of the site
- x) Include recommendations to ensure that potential impacts on the ecology of the area is reduced.
- y) Discuss any other sensitivities and important issues from your specialist perspective that are not identified in these terms of reference.
- z) Provide mitigation measures to avoiding or mitigate negative impacts and risks, for inclusion in an Environmental Management Programme
- aa) provide an indication on the relative ecological importance and function of the habitat types found within the study site (to be incorporated into a sensitivity map).
- bb) Identify the possible risks, impacts and cumulative impacts and their significance on terrestrial communities within the area during the construction and operation phases of the proposed development. Please use the assessment conventions provided.

Studies should contain sufficient information to facilitate decision-making by the Competent Authority.

7 Reporting

- a) Report on the identification of anticipated and cumulative impacts the operational units of the proposed project activity may have on the site for all 3 phases of the project:
 - Construction phase
 - Operation phase
 - Decommissioning phase
- b) Consider alternatives, should any significant sites be impacted adversely by the proposed project.
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8 Data provided

- The route and alternatives will be provided in .shp format as well as .kml format to the specialist by the applicant;
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10 Risk and Impact Assessment Phase

- a) The impacts identified must be assessed according to the EIA regulations, taking into account cumulative impacts of all sites, including alternative sites. Describe and assess the impacts (positive and negative) associated with the proposed development in order to be able to determine the risks posed by the activities associated with both the Construction and Operational Phases.
- b) Determine and rate the likely impacts associated with the proposed development as per **Appendix A**; and
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APPENDIX A

Risk assessment methodology

Criteria by which impacts is to be assessed

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- an assessment of the reversibility of the impact (permanent loss of resources, or impact is reversible after project life);
- whether or not the aspect is controversial;
- an assessment of the irreplaceability of the resource loss caused by the activity (whether the project will destroy the resources which are easily replaceable, or the project will destroy resources which are irreplaceable and cannot be replaced);
- the level of alteration to the natural systems, processes or systems.

Negligible	The impact does not affect physical, biophysical or socio-economic functions and processes.	1
Low/potential harmful	The impact has limited impacts on physical, biophysical or socio-economic functions and processes.	2
Medium/slightly harmful	The impact has an effect on physical, biophysical and socio-economic functions and processes, but in such a way that these processes can still continue to function albeit in a modified fashion.	3
High/Harmful	Where the physical, bio-physical and socio-economic functions and processes are impacted on in such a way as to cause them to temporarily or permanently cease.	4
Very high/Disastrous	Where the physical, bio-physical and socio-economic functions and processes are highly impacted on in such a way as to cause them to permanently cease.	5

Incidence (frequency + probability)

Frequency: This provides a description of any repetitive, continuous or time-linked characteristics of the impact: Once Off (occurring any time during construction or operation); Intermittent (occurring from time to time, without specific periodicity); Periodic (occurring at more or less regular intervals); Continuous (without interruption).

Once Off	Once	1
Rare	1/5 to 1/10 years	2
Frequent	Once a year	3
Very frequent	Once a month	4
Continuous	≥ Once a day/ per shift	5

Criteria by which impacts is to be assessed

ASPECT	IMPACT RATING												
Probability of occurrence: A description of the chance that consequences of that selected level of severity could occur during the exposure.													
Highly unlikely	The probability of the impact occurring is highly unlikely due to its design or historic experience. 1												
Improbable	The probability of the impact occurring is low due to its design or historic experience. 2												
Probable	There is a distinct probability of the impact occurring 3												
Almost certain	It is most likely that the impact will occur 4												
Definite	The impact will occur regardless of any prevention measures 5												
Risk rating	The risk rating is calculated based on input from the above assessments. The incidence of occurrence is calculated by adding the Extent of the impact to the duration of the impact. The Severity of the impact is calculated based on input from the extent of the impact, the duration and the intensity. Risk = Severity (extent +duration + intensity) x Incidence (frequency + probability) Significance: The significance of the risk based on the identified impacts has been expressed qualitatively as follows: ○ low – the impact is of little importance/insignificant, but may/may not require minimal management ○ medium - the impact is important, management is required to reduce negative impacts to acceptable levels. ○ high - the impact is of great importance, negative impacts could render development options or the entire project unacceptable if they cannot be reduced to acceptable levels and/or if they are not balanced by significant positive impacts, management of negative impacts is essential. <table border="1"> <tr> <td>Low risk</td><td>0 – 50</td></tr> <tr> <td>Medium risk</td><td>51 – 100</td></tr> <tr> <td>High risk</td><td>101 – 150</td></tr> <tr> <td>Low positive</td><td>0 – 50</td></tr> <tr> <td>Medium positive</td><td>51 – 100</td></tr> <tr> <td>High positive</td><td>101 – 150</td></tr> </table>	Low risk	0 – 50	Medium risk	51 – 100	High risk	101 – 150	Low positive	0 – 50	Medium positive	51 – 100	High positive	101 – 150
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ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

**Assessment Report for the proposed Housing Development on
Portion 38 of Farm 136, Tergniet, Mossel Bay**

TERMS OF REFERENCE TO UNDERTAKE A HERITAGE

1 Introduction

The Scope of Work for this specialist study includes an Impact Assessment for the development that will consist of 133 units (was originally 144 units) with four different typologies on either side of Robertson Avenue. The proposed development will also include the development and installation of associated structures and infrastructure, including engineering services. The total erven area covered in Site A will be approximately 3.13Ha and approximately 2.83Ha in Site B. The property is 10.1362 Ha in total, but not all is developable, due to the Robertson Avenue that separates the property and associated servitudes.

Please ensure your report conforms to the relevant DFFE Protocol and clearly state:

- If a Compliance Statement or a Full Assessment is required;
- Comparison between the Screening Tool Sensitivity rating vs the specialist sensitivity rating
- Supply a 2-pager Site Sensitive Verification Report as annexure to the specialist report.

2 Background

Mr. Pieter de Clerk would like to establish a residential development on Portion 38 of Farm No. 136 ("the property") in Tergniet, Western Cape. The property is located inside the urban edge and is bound by the railway line to the south and existing residential erven on the other boundaries. Robertson Avenue separates the property into two sections, the Western Site (herein after referred to as Site A) and the Eastern Site (herein after referred to as Site B). This property is located approximately 500 m east of the coastal settlement of Tergniet and approximately 660 m south of the N2 highway. The closest perennial water resource is the Great Brak River estuary, approximately 2.4 km east of the property. The property is 10.1362 Ha in total, but not all is developable, due to the Robertson Avenue that separates the property and associated servitudes.

3 Location

The project is proposed on a development area up to 10.1362 ha located on on Portion 38 of Farm No. 136 ("the property") in Tergniet, Western Cape. The site can be accessed from the existing Roberson Avenue.

Site location - Surveyor-general 21 digit site code:

C	0	5	1	0	0	0	0	0	0	0	0	0	1	3	6	0	0	0	3	8
1	2			3				4								5				



4 Desired Approach for a Specialist Study:

- Outline the study approach
- Identify and describe assumptions
- Identify sources of information
- Perform gap analysis
- Describe affected environment
- Describe nature of effects
- Perform sensitivity analysis
- Identify current and future risks
- Quantify and describe the potential impacts
- Assess and evaluate the potential impacts
- Identify and assess alternatives
- Propose and evaluate mitigation measures to decrease the proposed potential impacts
- Summarise impacts after mitigation
- Propose monitoring programme
- Make recommendations and mitigations for inclusion in an Environmental Management Programme (EMPr)

5 General Requirements for Specialist Reports:

The specialist reports should supply a non-technical summary of the studies, as many interested and/or affected



parties are not skilled. All writing should be done in an impartial, factual manner, using undemonstrative language. The specialist's language should indicate neither support of nor opposition to the proposal but should remain neutral at all times.

Compilation of the reports should be guided by the Environmental Impact Assessment Regulations (GG 33306, GN R. 543, dated 18 June 2010, in terms of the National Environmental Management Act (Act No 107 of 1998)) as well as the Protocols.

Reports should include the following:

- a) Executive summary;
- b) Definition of scope, including the purpose for which the report was prepared for;
- c) Relevant legislation and guidelines considered during the assessment;
- d) The date and season of the site investigation and the relevance of the season to the outcome of the assessment;
- e) Description of research methodology, including:
 - i. Review of available information
 - ii. Establishment of baseline conditions
 - iii. Field surveys and data collection
- f) Methodology adopted in preparing the report, including:
 - i. Description of assumptions;
 - ii. Uncertainties or knowledge gaps;
 - iii. Criteria used.
- g) Identification and prediction of impacts, including:
 - i. Description of findings;
 - ii. Potential implications of the impact of the proposed activity on the environment during construction, operation and decommissioning;
 - iii. Identification of alternatives;
 - iv. Identification of any areas to be avoided, including buffers;
 - v. Identification of cumulative impacts;
 - vi. Consideration of the no-go option;
 - vii. Identification of any fatal flaws in the proposed project or site.
- h) Results, recommendations, mitigation and monitoring requirements
 - i. Any mitigation measures for inclusion in the EMPr
 - ii. Any conditions for inclusion in the Environmental Authorisation
 - iii. Any monitoring requirements for inclusion in the EMPr or Environmental Authorisation
- i) Maps, figures, tables and graphs
 - i. Map superimposing the activity, including the associated structures and infrastructure on the environmental sensitivities of the site - including areas to be avoided, including buffers;
 - ii. All data files / kml / shape files need to be forwarded to DSA
 - iii. Maps must be properly referenced, with a north arrow and scale.
 - iv. Impact Assessment tables must be present in the format as indicated in Appendix 1: Risk Assessment Methodology
- j) Description of any assumptions made and any uncertainties or gaps in knowledge;
- k) A reasoned opinion:
 - i. As to whether the proposed activity or portions thereof should be authorised
 - ii. If the opinion is that the proposed activity or portion thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the Closure Plan
- l) Description of consultation processes undertaken during the course of preparing the Specialist Report;



- m) Summary and copies of comments received during consultation processes and, where applicable, responses thereto;
- n) Any other information requested by the competent authority or the EAP;
- o) Complete reference lists;
- p) Sources of information;
- q) Details of the specialist who prepared the reports;
- r) Curriculum Vitae, indicating expertise of the specialist to conduct the specialist studies;
- s) Declaration of the independence of the person compiling the reports on the required National or Provincial forms.
- t) Latest copy of proof of membership to SACNASP or any other Professional Association.

6 Specific Requirements for Impact Reports:

The scope of work comprises of a background study and a Phase 1 Paleontological and Heritage Assessment of the proposed study area. The objectives of the study includes, but is not limited to the following:

- a) Obtain a good understanding of the overall paleontological conditions of the area through a brief desktop study;
- b) Inform about the paleontological sensitivities of the Project Area and the probability of fossils being uncovered in the subsurface and being disturbed or destroyed during the Construction Phase of the proposed development;
- c) Should any sites be identified to propose a study method going forward;
- d) Provide a map showing the location of all the sensitive paleontological and heritage artefacts found within the project area
- e) Report on the results of the archaeological and cultural heritage survey adhering to minimum standards as prescribed by the SAHRA and approved by the Association for Southern African Professional Archaeologist (ASAPA).

Studies should contain sufficient information to facilitate decision-making by the Competent Authority.

7 Reporting

- a) Report on the identification of anticipated and cumulative impacts the operational units of the proposed project activity may have on the site for all 3 phases of the project:
 - o Construction phase
 - o Operation phase
 - o Decommissioning phase
- b) Consider alternatives, should any significant sites be impacted adversely by the proposed project.
- c) Ensure that all studies and results comply with the relevant legislation.

8 Data provided

- The route and alternatives will be provided in .shp format as well as .kml format to the specialist by the applicant;



- Additional research and studies obtained by DSA will be provided to the specialist;
- DSA will introduce the specialist to the other appointed specialists for this study in order to assess cumulative effects.
- Technical information regarding the project will be provided to the specialist by DSA.

9 Project deliverables

The following deliverables are required:

- All shp and kml files relevant to the assessment.
- One draft and one final copy of the report – electronically (MS Word).
- A final report will be required approximately two weeks after submission of the draft report (once comments have been provided by the client and DSA).

10 Risk and Impact Assessment Phase

- a) The impacts identified must be assessed according to the EIA regulations, taking into account cumulative impacts of all sites, including alternative sites. Describe and assess the impacts (positive and negative) associated with the proposed development in order to be able to determine the risks posed by the activities associated with both the Construction and Operational Phases.
- b) Determine and rate the likely impacts associated with the proposed development as per **Appendix A**; and
- c) Recommend mitigation measures and management actions, to reduce the severity of the negative impacts and to enhance the positive impacts.

APPENDIX A

Risk assessment methodology

Criteria by which impacts is to be assessed

ASPECT	IMPACT RATING										
Status of the impact: A statement of whether the impact is positive (a benefit), negative (a cost), or neutral.											
Direct impacts	Impacts that are caused directly by the activity and generally occur at the same time and at the place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally obvious and quantifiable.										
Indirect impacts	Impacts of an activity are indirect or induced changes that may occur as a result of the activity. These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken, or which occur at a different place as a result of the activity.										
Cumulative impacts	Impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities. Cumulative impacts can occur from the collective impacts of individual minor actions over a period of time and can include both direct and indirect impacts.										
Nature of the impact: The evaluation of the nature is impact specific. Most negative impacts will remain negative, however, after mitigation, significance should reduce: • Positive. • Negative.											
Extent: A description of whether the impact would occur on a scale limited to within the study area (local), limited to within 5 km of the study area (area); on a regional scale i.e. Local Municipality (region); or would occur at a national or international scale. <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>Local</td><td>1</td></tr> <tr><td>Area</td><td>2</td></tr> <tr><td>Region</td><td>3</td></tr> <tr><td>National</td><td>4</td></tr> <tr><td>International</td><td>5</td></tr> </table>		Local	1	Area	2	Region	3	National	4	International	5
Local	1										
Area	2										
Region	3										
National	4										
International	5										
Duration: A prediction of whether the duration of the impact would be Immediate and once-off (less than one month), more than once, but short term (less than one year), regular, medium term (1 to 5 years), Long term (6 to 15 years), Project life/permanent (> 15 years, with the impact ceasing after the operational life of the development or should be considered as permanent). <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>Immediate</td><td>1</td></tr> <tr><td>Short term</td><td>2</td></tr> <tr><td>Medium term</td><td>3</td></tr> <tr><td>Long term</td><td>4</td></tr> <tr><td>Project life/permanent</td><td>5</td></tr> </table>		Immediate	1	Short term	2	Medium term	3	Long term	4	Project life/permanent	5
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Criteria by which impacts is to be assessed

ASPECT | IMPACT RATING

Severity(extent +duration + intensity)

Intensity: This provides an order of magnitude of whether or not the intensity (magnitude/size/frequency) of the impact would be negligible, low, medium, high or very high. This is based on the following aspects:

- an assessment of the reversibility of the impact (permanent loss of resources, or impact is reversible after project life);
- whether or not the aspect is controversial;
- an assessment of the irreplaceability of the resource loss caused by the activity (whether the project will destroy the resources which are easily replaceable, or the project will destroy resources which are irreplaceable and cannot be replaced);
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Negligible	The impact does not affect physical, biophysical or socio-economic functions and processes.	1
Low/potential harmful	The impact has limited impacts on physical, biophysical or socio-economic functions and processes.	2
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Incidence (frequency + probability)

Frequency: This provides a description of any repetitive, continuous or time-linked characteristics of the impact: Once Off (occurring any time during construction or operation); Intermittent (occurring from time to time, without specific periodicity); Periodic (occurring at more or less regular intervals); Continuous (without interruption).

Once Off	Once	1
Rare	1/5 to 1/10 years	2
Frequent	Once a year	3
Very frequent	Once a month	4
Continuous	≥ Once a day/ per shift	5

Criteria by which impacts is to be assessed

ASPECT	IMPACT RATING												
Probability of occurrence: A description of the chance that consequences of that selected level of severity could occur during the exposure.													
Highly unlikely	The probability of the impact occurring is highly unlikely due to its design or historic experience. 1												
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Risk rating	The risk rating is calculated based on input from the above assessments. The incidence of occurrence is calculated by adding the Extent of the impact to the duration of the impact. The Severity of the impact is calculated based on input from the extent of the impact, the duration and the intensity. Risk = Severity (extent +duration + intensity) x Incidence (frequency + probability) Significance: The significance of the risk based on the identified impacts has been expressed qualitatively as follows: ○ low – the impact is of little importance/insignificant, but may/may not require minimal management ○ medium - the impact is important, management is required to reduce negative impacts to acceptable levels. ○ high - the impact is of great importance, negative impacts could render development options or the entire project unacceptable if they cannot be reduced to acceptable levels and/or if they are not balanced by significant positive impacts, management of negative impacts is essential. <table border="1"> <tr> <td>Low risk</td><td>0 – 50</td></tr> <tr> <td>Medium risk</td><td>51 – 100</td></tr> <tr> <td>High risk</td><td>101 – 150</td></tr> <tr> <td>Low positive</td><td>0 – 50</td></tr> <tr> <td>Medium positive</td><td>51 – 100</td></tr> <tr> <td>High positive</td><td>101 – 150</td></tr> </table>	Low risk	0 – 50	Medium risk	51 – 100	High risk	101 – 150	Low positive	0 – 50	Medium positive	51 – 100	High positive	101 – 150
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ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

**Assessment Report for the proposed Housing Development on
Portion 38 of Farm 136, Tergniet, Mossel Bay**

TERMS OF REFERENCE TO UNDERTAKE AN TERRESTRIAL ANIMAL BIODIVERSITY

1 Introduction

The Scope of Work for this specialist study includes an Impact Assessment for the development that will consist of 133 units (was originally 144 units) with four different typologies on either side of Robertson Avenue. The proposed development will also include the development and installation of associated structures and infrastructure, including engineering services. The total erven area covered in Site A will be approximately 3.13Ha and approximately 2.83Ha in Site B. The property is 10.1362 Ha in total, but not all is developable, due to the Robertson Avenue that separates the property and associated servitudes.

Please ensure your report conforms to the relevant DFFE Protocol and clearly state:

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3 Location

The project is proposed on a development area up to 10.1362 ha located on on Portion 38 of Farm No. 136 ("the property") in Tergniet, Western Cape. The site can be accessed from the existing Roberson Avenue.

Site location - Surveyor-general 21 digit site code:

C	0	5	1	0	0	0	0	0	0	0	0	0	1	3	6	0	0	0	3	8
1	2			3				4								5				



4 Desired Approach for a Specialist Study:

- Outline the study approach
- Identify and describe assumptions
- Identify sources of information
- Perform gap analysis
- Describe affected environment
- Describe nature of effects
- Perform sensitivity analysis
- Identify current and future risks
- Quantify and describe the potential impacts
- Assess and evaluate the potential impacts
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- Summarise impacts after mitigation
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The specialist reports should supply a non-technical summary of the studies, as many interested and/or affected



parties are not skilled. All writing should be done in an impartial, factual manner, using undemonstrative language. The specialist's language should indicate neither support of nor opposition to the proposal but should remain neutral at all times.

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- e) Description of research methodology, including:
 - i. Review of available information
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 - iii. Field surveys and data collection
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 - iii. Maps must be properly referenced, with a north arrow and scale.
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- j) Description of any assumptions made and any uncertainties or gaps in knowledge;
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- l) Description of consultation processes undertaken during the course of preparing the Specialist Report;



- m) Summary and copies of comments received during consultation processes and, where applicable, responses thereto;
- n) Any other information requested by the competent authority or the EAP;
- o) Complete reference lists;
- p) Sources of information;
- q) Details of the specialist who prepared the reports;
- r) Curriculum Vitae, indicating expertise of the specialist to conduct the specialist studies;
- s) Declaration of the independence of the person compiling the reports on the required National or Provincial forms.
- t) Latest copy of proof of membership to SACNASP or any other Professional Association.

6 Specific Requirements for Impact Reports:

Essential information for the assessment includes but is not limited to the following:

- a) A detailed quality survey/assessment, incorporating the legal required surrounding areas;
- b) Current baseline surroundings / state;
- c) A table identifying all possible direct, indirect and cumulative impacts that could result from the proposed project, indicating whether these impacts are related to the design, construction or operational phases of the proposed project, and recommending measures aimed at avoiding and/or mitigating each potential impact;
- d) An assessment of the significance of the identified impacts both before and after mitigation, using the provided risk assessment matrix (**Appendix A**);
- e) A statement declaring the specialist's level of confidence with regard to the recommendations and predictions made in respect of the mitigation and resulting intensity of each impact, depending on the specialist's knowledge as well as the availability of information.
- f) Ensure that relevant fieldwork is conducted within the prescribed season (summer) as per the required biodiversity guidelines.
- g) Conduct a desktop survey of observed and expected threatened, near-threatened plant species, including plant species of conservation concern (e.g. protected species) on the study site;
- h) Identify and map the fauna communities;
- i) Identify and record the main species that occur within the project area;
- j) Where possible identify any species of specific concern (SSC);
- k) Record any species encountered through opportunistic sightings and active searching;
- l) Where possible identify any species of conservation concern;
- m) Assess the extent of alien species over the site, and associated risks of alien invasion as a result of any proposed development;
- n) Identify any significant landscape features or rare or important ecological associations such as wetlands or rocky areas that might support rare or important ecological associations;
- o) Place the project area within the biodiversity context of the wider area in terms of animals, conservation areas and Critical Biodiversity Areas as mapped by existing guidelines both nationally and provincially;
- p) Determine and map the sensitivity of the site
- q) Include recommendations to ensure that potential impacts on the ecology of the area is reduced.
- r) Discuss any other sensitivities and important issues from your specialist perspective that are not identified in these terms of reference.
- s) Provide mitigation measures to avoiding or mitigate negative impacts and risks, for inclusion in an Environmental Management Programme



- t) provide an indication on the relative ecological importance and function of the habitat types found within the study site (to be incorporated into a sensitivity map).
- u) Identify the possible risks, impacts and cumulative impacts and their significance on terrestrial communities within the area during the construction and operation phases of the proposed development. Please use the assessment conventions provided.

Studies should contain sufficient information to facilitate decision-making by the Competent Authority.

7 Reporting

- a) Report on the identification of anticipated and cumulative impacts the operational units of the proposed project activity may have on the site for all 3 phases of the project:
 - o Construction phase
 - o Operation phase
 - o Decommissioning phase
- b) Consider alternatives, should any significant sites be impacted adversely by the proposed project.
- c) Ensure that all studies and results comply with the relevant legislation.

8 Data provided

- The route and alternatives will be provided in .shp format as well as .kml format to the specialist by the applicant;
- Additional research and studies obtained by DSA will be provided to the specialist;
- DSA will introduce the specialist to the other appointed specialists for this study in order to assess cumulative effects.
- Technical information regarding the project will be provided to the specialist by DSA.

9 Project deliverables

The following deliverables are required:

- All shp and kml files relevant to the assessment.
- One draft and one final copy of the report – electronically (MS Word).
- A final report will be required approximately two weeks after submission of the draft report (once comments have been provided by the client and DSA).

10 Risk and Impact Assessment Phase

- a) The impacts identified must be assessed according to the EIA regulations, taking into account cumulative impacts of all sites, including alternative sites. Describe and assess the impacts (positive and negative) associated with the proposed development in order to be able to determine the risks posed by the activities associated with both the Construction and Operational Phases.
- b) Determine and rate the likely impacts associated with the proposed development as per **Appendix A**; and
- c) Recommend mitigation measures and management actions, to reduce the severity of the negative impacts and to enhance the positive impacts.

APPENDIX A

Risk assessment methodology

Criteria by which impacts is to be assessed

ASPECT	IMPACT RATING										
Status of the impact: A statement of whether the impact is positive (a benefit), negative (a cost), or neutral.											
Direct impacts	Impacts that are caused directly by the activity and generally occur at the same time and at the place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally obvious and quantifiable.										
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Region	3										
National	4										
International	5										
Duration: A prediction of whether the duration of the impact would be Immediate and once-off (less than one month), more than once, but short term (less than one year), regular, medium term (1 to 5 years), Long term (6 to 15 years), Project life/permanent (> 15 years, with the impact ceasing after the operational life of the development or should be considered as permanent). <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>Immediate</td><td>1</td></tr> <tr><td>Short term</td><td>2</td></tr> <tr><td>Medium term</td><td>3</td></tr> <tr><td>Long term</td><td>4</td></tr> <tr><td>Project life/permanent</td><td>5</td></tr> </table>		Immediate	1	Short term	2	Medium term	3	Long term	4	Project life/permanent	5
Immediate	1										
Short term	2										
Medium term	3										
Long term	4										
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Criteria by which impacts is to be assessed

ASPECT | IMPACT RATING

Severity(extent +duration + intensity)

Intensity: This provides an order of magnitude of whether or not the intensity (magnitude/size/frequency) of the impact would be negligible, low, medium, high or very high. This is based on the following aspects:

- an assessment of the reversibility of the impact (permanent loss of resources, or impact is reversible after project life);
- whether or not the aspect is controversial;
- an assessment of the irreplaceability of the resource loss caused by the activity (whether the project will destroy the resources which are easily replaceable, or the project will destroy resources which are irreplaceable and cannot be replaced);
- the level of alteration to the natural systems, processes or systems.

Negligible	The impact does not affect physical, biophysical or socio-economic functions and processes.	1
Low/potential harmful	The impact has limited impacts on physical, biophysical or socio-economic functions and processes.	2
Medium/slightly harmful	The impact has an effect on physical, biophysical and socio-economic functions and processes, but in such a way that these processes can still continue to function albeit in a modified fashion.	3
High/Harmful	Where the physical, bio-physical and socio-economic functions and processes are impacted on in such a way as to cause them to temporarily or permanently cease.	4
Very high/Disastrous	Where the physical, bio-physical and socio-economic functions and processes are highly impacted on in such a way as to cause them to permanently cease.	5

Incidence (frequency + probability)

Frequency: This provides a description of any repetitive, continuous or time-linked characteristics of the impact: Once Off (occurring any time during construction or operation); Intermittent (occurring from time to time, without specific periodicity); Periodic (occurring at more or less regular intervals); Continuous (without interruption).

Once Off	Once	1
Rare	1/5 to 1/10 years	2
Frequent	Once a year	3
Very frequent	Once a month	4
Continuous	≥ Once a day/ per shift	5

Criteria by which impacts is to be assessed

ASPECT	IMPACT RATING												
Probability of occurrence: A description of the chance that consequences of that selected level of severity could occur during the exposure.													
Highly unlikely	The probability of the impact occurring is highly unlikely due to its design or historic experience. 1												
Improbable	The probability of the impact occurring is low due to its design or historic experience. 2												
Probable	There is a distinct probability of the impact occurring 3												
Almost certain	It is most likely that the impact will occur 4												
Definite	The impact will occur regardless of any prevention measures 5												
Risk rating	The risk rating is calculated based on input from the above assessments. The incidence of occurrence is calculated by adding the Extent of the impact to the duration of the impact. The Severity of the impact is calculated based on input from the extent of the impact, the duration and the intensity. Risk = Severity (extent +duration + intensity) x Incidence (frequency + probability) Significance: The significance of the risk based on the identified impacts has been expressed qualitatively as follows: ○ low – the impact is of little importance/insignificant, but may/may not require minimal management ○ medium - the impact is important, management is required to reduce negative impacts to acceptable levels. ○ high - the impact is of great importance, negative impacts could render development options or the entire project unacceptable if they cannot be reduced to acceptable levels and/or if they are not balanced by significant positive impacts, management of negative impacts is essential. <table border="1"> <tr> <td>Low risk</td><td>0 – 50</td></tr> <tr> <td>Medium risk</td><td>51 – 100</td></tr> <tr> <td>High risk</td><td>101 – 150</td></tr> <tr> <td>Low positive</td><td>0 – 50</td></tr> <tr> <td>Medium positive</td><td>51 – 100</td></tr> <tr> <td>High positive</td><td>101 – 150</td></tr> </table>	Low risk	0 – 50	Medium risk	51 – 100	High risk	101 – 150	Low positive	0 – 50	Medium positive	51 – 100	High positive	101 – 150
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ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

Assessment Report for the proposed Housing Development on Portion 38 of Farm 136, Tergniet, Mossel Bay

TERMS OF REFERENCE TO UNDERTAKE AN TERRESTRIAL & PLANT BIODIVERSITY

1 Introduction

The Scope of Work for this specialist study includes an Impact Assessment for the development that will consist of 133 units (was originally 144 units) with four different typologies on either side of Robertson Avenue. The proposed development will also include the development and installation of associated structures and infrastructure, including engineering services. The total erven area covered in Site A will be approximately 3.13Ha and approximately 2.83Ha in Site B. The property is 10.1362 Ha in total, but not all is developable, due to the Robertson Avenue that separates the property and associated servitudes.

Please ensure your report conforms to the relevant DFFE Protocol and clearly state:

- If a Compliance Statement or a Full Assessment is required;
- Comparison between the Screening Tool Sensitivity rating vs the specialist sensitivity rating
- Supply a 2-pager Site Sensitive Verification Report as annexure to the specialist report.

2 Background

Mr. Pieter de Clerk would like to establish a residential development on Portion 38 of Farm No. 136 ("the property") in Tergniet, Western Cape. The property is located inside the urban edge and is bound by the railway line to the south and existing residential erven on the other boundaries. Robertson Avenue separates the property into two sections, the Western Site (herein after referred to as Site A) and the Eastern Site (herein after referred to as Site B). This property is located approximately 500 m east of the coastal settlement of Tergniet and approximately 660 m south of the N2 highway. The closest perennial water resource is the Great Brak River estuary, approximately 2.4 km east of the property. The property is 10.1362 Ha in total, but not all is developable, due to the Robertson Avenue that separates the property and associated servitudes.

3 Location

The project is proposed on a development area up to 10.1362 ha located on on Portion 38 of Farm No. 136 ("the property") in Tergniet, Western Cape. The site can be accessed from the existing Roberson Avenue.

Site location - Surveyor-general 21 digit site code:

C	0	5	1	0	0	0	0	0	0	0	0	0	1	3	6	0	0	0	3	8
1	2			3				4								5				



4 Desired Approach for a Specialist Study:

- Outline the study approach
- Identify and describe assumptions
- Identify sources of information
- Perform gap analysis
- Describe affected environment
- Describe nature of effects
- Perform sensitivity analysis
- Identify current and future risks
- Quantify and describe the potential impacts
- Assess and evaluate the potential impacts
- Identify and assess alternatives
- Propose and evaluate mitigation measures to decrease the proposed potential impacts
- Summarise impacts after mitigation
- Propose monitoring programme
- Make recommendations and mitigations for inclusion in an Environmental Management Programme (EMPr)

5 General Requirements for Specialist Reports:

The specialist reports should supply a non-technical summary of the studies, as many interested and/or affected



parties are not skilled. All writing should be done in an impartial, factual manner, using undemonstrative language. The specialist's language should indicate neither support of nor opposition to the proposal but should remain neutral at all times.

Compilation of the reports should be guided by the Environmental Impact Assessment Regulations (GG 33306, GN R. 543, dated 18 June 2010, in terms of the National Environmental Management Act (Act No 107 of 1998)) as well as the Protocols.

Reports should include the following:

- a) Executive summary;
- b) Definition of scope, including the purpose for which the report was prepared for;
- c) Relevant legislation and guidelines considered during the assessment;
- d) The date and season of the site investigation and the relevance of the season to the outcome of the assessment;
- e) Description of research methodology, including:
 - i. Review of available information
 - ii. Establishment of baseline conditions
 - iii. Field surveys and data collection
- f) Methodology adopted in preparing the report, including:
 - i. Description of assumptions;
 - ii. Uncertainties or knowledge gaps;
 - iii. Criteria used.
- g) Identification and prediction of impacts, including:
 - i. Description of findings;
 - ii. Potential implications of the impact of the proposed activity on the environment during construction, operation and decommissioning;
 - iii. Identification of alternatives;
 - iv. Identification of any areas to be avoided, including buffers;
 - v. Identification of cumulative impacts;
 - vi. Consideration of the no-go option;
 - vii. Identification of any fatal flaws in the proposed project or site.
- h) Results, recommendations, mitigation and monitoring requirements
 - i. Any mitigation measures for inclusion in the EMPr
 - ii. Any conditions for inclusion in the Environmental Authorisation
 - iii. Any monitoring requirements for inclusion in the EMPr or Environmental Authorisation
- i) Maps, figures, tables and graphs
 - i. Map superimposing the activity, including the associated structures and infrastructure on the environmental sensitivities of the site - including areas to be avoided, including buffers;
 - ii. All data files / kml / shape files need to be forwarded to DSA
 - iii. Maps must be properly referenced, with a north arrow and scale.
 - iv. Impact Assessment tables must be present in the format as indicated in Appendix 1: Risk Assessment Methodology
- j) Description of any assumptions made and any uncertainties or gaps in knowledge;
- k) A reasoned opinion:
 - i. As to whether the proposed activity or portions thereof should be authorised
 - ii. If the opinion is that the proposed activity or portion thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the Closure Plan
- l) Description of consultation processes undertaken during the course of preparing the Specialist Report;

- m) Summary and copies of comments received during consultation processes and, where applicable, responses thereto;
- n) Any other information requested by the competent authority or the EAP;
- o) Complete reference lists;
- p) Sources of information;
- q) Details of the specialist who prepared the reports;
- r) Curriculum Vitae, indicating expertise of the specialist to conduct the specialist studies;
- s) Declaration of the independence of the person compiling the reports on the required National or Provincial forms.
- t) Latest copy of proof of membership to SACNASP or any other Professional Association.

6 Specific Requirements for Impact Reports:

Essential information for the assessment includes but is not limited to the following:

- a) A detailed quality survey/assessment, incorporating the legal required surrounding areas;
- b) Current baseline surroundings / state;
- c) A table identifying all possible direct, indirect and cumulative impacts that could result from the proposed project, indicating whether these impacts are related to the design, construction or operational phases of the proposed project, and recommending measures aimed at avoiding and/or mitigating each potential impact;
- d) An assessment of the significance of the identified impacts both before and after mitigation, using the provided risk assessment matrix (**Appendix A**);
- e) A statement declaring the specialist's level of confidence with regard to the recommendations and predictions made in respect of the mitigation and resulting intensity of each impact, depending on the specialist's knowledge as well as the availability of information.
- f) Ensure that relevant fieldwork is conducted within the prescribed season (summer) as per the required biodiversity guidelines.
- g) Conduct a desktop survey of observed and expected threatened, near-threatened plant species, including plant species of conservation concern (e.g. protected species) on the study site;
- h) Identify and map the vegetation communities;
- i) Determine the type of vegetation within the study site and place it in context for the wider area;
- j) Identify and record the main species that occur within the project area;
- k) Where possible identify any species of specific concern (SSC);
- l) Record any species encountered through opportunistic sightings and active searching;
- m) Where possible identify any species of conservation concern;
- n) Assess the extent of alien species over the site, and associated risks of alien invasion as a result of any proposed development;
- o) Identify any significant landscape features or rare or important ecological associations such as wetlands or rocky areas that might support rare or important ecological associations;
- p) Place the project area within the biodiversity context of the wider area in terms of vegetation, conservation areas and Critical Biodiversity Areas as mapped by existing guidelines both nationally and provincially;
- q) Determine and map the sensitivity of the site
- r) Include recommendations to ensure that potential impacts on the ecology of the area is reduced.
- s) Discuss any other sensitivities and important issues from your specialist perspective that are not identified in these terms of reference.
- t) Provide mitigation measures to avoiding or mitigate negative impacts and risks, for inclusion in an



Environmental Management Programme

- u) provide an indication on the relative ecological importance and function of the habitat types found within the study site (to be incorporated into a sensitivity map).
- v) Identify the possible risks, impacts and cumulative impacts and their significance on terrestrial communities within the area during the construction and operation phases of the proposed development. Please use the assessment conventions provided.

Studies should contain sufficient information to facilitate decision-making by the Competent Authority.

7 Reporting

- a) Report on the identification of anticipated and cumulative impacts the operational units of the proposed project activity may have on the site for all 3 phases of the project:
 - Construction phase
 - Operation phase
 - Decommissioning phase
- b) Consider alternatives, should any significant sites be impacted adversely by the proposed project.
- c) Ensure that all studies and results comply with the relevant legislation.

8 Data provided

- The route and alternatives will be provided in .shp format as well as .kml format to the specialist by the applicant;
- Additional research and studies obtained by DSA will be provided to the specialist;
- DSA will introduce the specialist to the other appointed specialists for this study in order to assess cumulative effects.
- Technical information regarding the project will be provided to the specialist by DSA.

9 Project deliverables

The following deliverables are required:

- All shp and kml files relevant to the assessment.
- One draft and one final copy of the report – electronically (MS Word).
- A final report will be required approximately two weeks after submission of the draft report (once comments have been provided by the client and DSA).

10 Risk and Impact Assessment Phase

- a) The impacts identified must be assessed according to the EIA regulations, taking into account cumulative impacts of all sites, including alternative sites. Describe and assess the impacts (positive and negative) associated with the proposed development in order to be able to determine the risks posed by the activities associated with both the Construction and Operational Phases.
- b) Determine and rate the likely impacts associated with the proposed development as per **Appendix A**; and
- c) Recommend mitigation measures and management actions, to reduce the severity of the negative impacts and to enhance the positive impacts.

APPENDIX A

Risk assessment methodology

Criteria by which impacts is to be assessed

ASPECT	IMPACT RATING										
Status of the impact: A statement of whether the impact is positive (a benefit), negative (a cost), or neutral.											
Direct impacts	Impacts that are caused directly by the activity and generally occur at the same time and at the place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally obvious and quantifiable.										
Indirect impacts	Impacts of an activity are indirect or induced changes that may occur as a result of the activity. These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken, or which occur at a different place as a result of the activity.										
Cumulative impacts	Impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities. Cumulative impacts can occur from the collective impacts of individual minor actions over a period of time and can include both direct and indirect impacts.										
Nature of the impact: The evaluation of the nature is impact specific. Most negative impacts will remain negative, however, after mitigation, significance should reduce: • Positive. • Negative.											
Extent: A description of whether the impact would occur on a scale limited to within the study area (local), limited to within 5 km of the study area (area); on a regional scale i.e. Local Municipality (region); or would occur at a national or international scale. <table border="1" style="margin: 10px auto; width: 50%;"> <tr><td>Local</td><td>1</td></tr> <tr><td>Area</td><td>2</td></tr> <tr><td>Region</td><td>3</td></tr> <tr><td>National</td><td>4</td></tr> <tr><td>International</td><td>5</td></tr> </table>		Local	1	Area	2	Region	3	National	4	International	5
Local	1										
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Duration: A prediction of whether the duration of the impact would be Immediate and once-off (less than one month), more than once, but short term (less than one year), regular, medium term (1 to 5 years), Long term (6 to 15 years), Project life/permanent (> 15 years, with the impact ceasing after the operational life of the development or should be considered as permanent). <table border="1" style="margin: 10px auto; width: 50%;"> <tr><td>Immediate</td><td>1</td></tr> <tr><td>Short term</td><td>2</td></tr> <tr><td>Medium term</td><td>3</td></tr> <tr><td>Long term</td><td>4</td></tr> <tr><td>Project life/permanent</td><td>5</td></tr> </table>		Immediate	1	Short term	2	Medium term	3	Long term	4	Project life/permanent	5
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Criteria by which impacts is to be assessed

ASPECT | IMPACT RATING

Severity(extent +duration + intensity)

Intensity: This provides an order of magnitude of whether or not the intensity (magnitude/size/frequency) of the impact would be negligible, low, medium, high or very high. This is based on the following aspects:

- an assessment of the reversibility of the impact (permanent loss of resources, or impact is reversible after project life);
- whether or not the aspect is controversial;
- an assessment of the irreplaceability of the resource loss caused by the activity (whether the project will destroy the resources which are easily replaceable, or the project will destroy resources which are irreplaceable and cannot be replaced);
- the level of alteration to the natural systems, processes or systems.

Negligible	The impact does not affect physical, biophysical or socio-economic functions and processes.	1
Low/potential harmful	The impact has limited impacts on physical, biophysical or socio-economic functions and processes.	2
Medium/slightly harmful	The impact has an effect on physical, biophysical and socio-economic functions and processes, but in such a way that these processes can still continue to function albeit in a modified fashion.	3
High/Harmful	Where the physical, bio-physical and socio-economic functions and processes are impacted on in such a way as to cause them to temporarily or permanently cease.	4
Very high/Disastrous	Where the physical, bio-physical and socio-economic functions and processes are highly impacted on in such a way as to cause them to permanently cease.	5

Incidence (frequency + probability)

Frequency: This provides a description of any repetitive, continuous or time-linked characteristics of the impact: Once Off (occurring any time during construction or operation); Intermittent (occurring from time to time, without specific periodicity); Periodic (occurring at more or less regular intervals); Continuous (without interruption).

Once Off	Once	1
Rare	1/5 to 1/10 years	2
Frequent	Once a year	3
Very frequent	Once a month	4
Continuous	≥ Once a day/ per shift	5

Criteria by which impacts is to be assessed

ASPECT	IMPACT RATING												
Probability of occurrence: A description of the chance that consequences of that selected level of severity could occur during the exposure.													
Highly unlikely	The probability of the impact occurring is highly unlikely due to its design or historic experience. 1												
Improbable	The probability of the impact occurring is low due to its design or historic experience. 2												
Probable	There is a distinct probability of the impact occurring 3												
Almost certain	It is most likely that the impact will occur 4												
Definite	The impact will occur regardless of any prevention measures 5												
Risk rating	The risk rating is calculated based on input from the above assessments. The incidence of occurrence is calculated by adding the Extent of the impact to the duration of the impact. The Severity of the impact is calculated based on input from the extent of the impact, the duration and the intensity. Risk = Severity (extent +duration + intensity) x Incidence (frequency + probability) Significance: The significance of the risk based on the identified impacts has been expressed qualitatively as follows: ○ low – the impact is of little importance/insignificant, but may/may not require minimal management ○ medium - the impact is important, management is required to reduce negative impacts to acceptable levels. ○ high - the impact is of great importance, negative impacts could render development options or the entire project unacceptable if they cannot be reduced to acceptable levels and/or if they are not balanced by significant positive impacts, management of negative impacts is essential. <table border="1"> <tr> <td>Low risk</td><td>0 – 50</td></tr> <tr> <td>Medium risk</td><td>51 – 100</td></tr> <tr> <td>High risk</td><td>101 – 150</td></tr> <tr> <td>Low positive</td><td>0 – 50</td></tr> <tr> <td>Medium positive</td><td>51 – 100</td></tr> <tr> <td>High positive</td><td>101 – 150</td></tr> </table>	Low risk	0 – 50	Medium risk	51 – 100	High risk	101 – 150	Low positive	0 – 50	Medium positive	51 – 100	High positive	101 – 150
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ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

**Assessment Report for the proposed Housing Development on
Portion 38 of Farm 136, Tergniet, Mossel Bay**

TERMS OF REFERENCE TO UNDERTAKE AN TRAFFIC IMPACT ASSESMENT

1 Introduction

The Scope of Work for this specialist study includes an Impact Assessment for the development that will consist of 133 units (was originally 144 units) with four different typologies on either side of Robertson Avenue. The proposed development will also include the development and installation of associated structures and infrastructure, including engineering services. The total erven area covered in Site A will be approximately 3.13Ha and approximately 2.83Ha in Site B. The property is 10.1362 Ha in total, but not all is developable, due to the Robertson Avenue that separates the property and associated servitudes.

Please ensure your report conforms to the relevant DFFE Protocol and clearly state:

- If an Compliance Statement or a Full Assessment is required;
- Comparison between the Screening Tool Sensitivity rating vs the specialist sensitivity rating
- Supply a 2-pager Site Sensitive Verification Report as annexure to the specialist report.

2 Background

Mr. Pieter de Clerk would like to establish a residential development on Portion 38 of Farm No. 136 ("the property") in Tergniet. Western Cape. The property is located inside the urban edge and is bound by the railway line to the south and existing residential erven on the other boundaries. Robertson Avenue separates the property into two sections, the Western Site (herein after referred to as Site A) and the Eastern Site (herein after referred to as Site B). This property is located approximately 500 m east of the coastal settlement of Tergniet and approximately 660 m south of the N2 highway. The closest perennial water resource is the Great Brak River estuary, approximately 2.4 km east of the property. The property is 10.1362 Ha in total, but not all is developable, due to the Robertson Avenue that separates the property and associated servitudes.

3 Location

The project is proposed on a development area up to 10.1362 ha located on on Portion 38 of Farm No. 136 ("the property") in Tergniet. Western Cape. The site can be accessed from the existing Roberson Avenue.

Site location - Surveyor-general 21 digit site code:

C	0	5	1	0	0	0	0	0	0	0	0	0	1	3	6	0	0	0	3	8
1	2			3				4								5				



4 Desired Approach for a Specialist Study:

- Outline the study approach
- Identify and describe assumptions
- Identify sources of information
- Perform gap analysis
- Describe affected environment
- Describe nature of effects
- Perform sensitivity analysis
- Identify current and future risks
- Quantify and describe the potential impacts
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- Identify and assess alternatives
- Propose and evaluate mitigation measures to decrease the proposed potential impacts
- Summarise impacts after mitigation
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5 General Requirements for Specialist Reports:

The specialist reports should supply a non-technical summary of the studies, as many interested and/or affected



parties are not skilled. All writing should be done in an impartial, factual manner, using undemonstrative language. The specialist's language should indicate neither support of nor opposition to the proposal but should remain neutral at all times.

Compilation of the reports should be guided by the Environmental Impact Assessment Regulations (GG 33306, GN R. 543, dated 18 June 2010, in terms of the National Environmental Management Act (Act No 107 of 1998)).

Reports should include the following:

- a) Executive summary;
- b) Definition of scope, including the purpose for which the report was prepared for;
- c) Relevant legislation and guidelines considered during the assessment;
- d) The date and season of the site investigation and the relevance of the season to the outcome of the assessment;
- e) Description of research methodology, including:
 - i. Review of available information
 - ii. Establishment of baseline conditions
 - iii. Field surveys and data collection
- f) Methodology adopted in preparing the report, including:
 - i. Description of assumptions;
 - ii. Uncertainties or knowledge gaps;
 - iii. Criteria used.
- g) Identification and prediction of impacts, including:
 - i. Description of findings;
 - ii. Potential implications of the impact of the proposed activity on the environment during construction, operation and decommissioning;
 - iii. Identification of alternatives;
 - iv. Identification of any areas to be avoided, including buffers;
 - v. Identification of cumulative impacts;
 - vi. Consideration of the no-go option;
 - vii. Identification of any fatal flaws in the proposed project or site.
- h) Results, recommendations, mitigation and monitoring requirements
 - i. Any mitigation measures for inclusion in the EMPr
 - ii. Any conditions for inclusion in the Environmental Authorisation
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- i) Maps, figures, tables and graphs
 - i. Map superimposing the activity, including the associated structures and infrastructure on the environmental sensitivities of the site - including areas to be avoided, including buffers;
 - ii. All data files / kml / shape files need to be forwarded to DSA
 - iii. Maps must be properly referenced, with a north arrow and scale.
 - iv. Impact Assessment tables must be present in the format as indicated in Appendix 1: Risk Assessment Methodology
- j) Description of any assumptions made and any uncertainties or gaps in knowledge;
- k) A reasoned opinion:
 - i. As to whether the proposed activity or portions thereof should be authorised
 - ii. If the opinion is that the proposed activity or portion thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the Closure Plan
- l) Description of consultation processes undertaken during the course of preparing the Specialist Report;
- m) Summary and copies of comments received during consultation processes and, where applicable,

- responses thereto;
- n) Any other information requested by the competent authority or the EAP;
 - o) Complete reference lists;
 - p) Sources of information;
 - q) Details of the specialist who prepared the reports;
 - r) Curriculum Vitae, indicating expertise of the specialist to conduct the specialist studies;
 - s) Declaration of the independence of the person compiling the reports on the required National or Provincial forms.
 - t) Latest copy of proof of membership to SACNASP or any other Professional Association.

6 Specific Requirements for Impact Reports:

Essential information for the assessment includes but is not limited to the following:

- a) A detailed quality survey/assessment, incorporating the legal required surrounding areas;
- b) Current baseline surroundings / state;
- c) A table identifying all possible direct, indirect and cumulative impacts that could result from the proposed project, indicating whether these impacts are related to the design, construction or operational phases of the proposed project, and recommending measures aimed at avoiding and/or mitigating each potential impact;
- d) An assessment of the significance of the identified impacts both before and after mitigation, using the provided risk assessment matrix (**Appendix A**);
- e) A statement declaring the specialist's level of confidence with regard to the recommendations and predictions made in respect of the mitigation and resulting intensity of each impact, depending on the specialist's knowledge as well as the availability of information.

Studies should contain sufficient information to facilitate decision-making by the Competent Authority.

7 Reporting

- a) Report on the identification of anticipated and cumulative impacts the operational units of the proposed project activity may have on the site for all 3 phases of the project:
 - Construction phase
 - Operation phase
 - Decommissioning phase
- b) Consider alternatives, should any significant sites be impacted adversely by the proposed project.
- c) Ensure that all studies and results comply with the relevant legislation.

8 Data provided

- The route and alternatives will be provided in .shp format as well as .kml format to the specialist by the applicant;
- Additional research and studies obtained by DSA will be provided to the specialist;
- DSA will introduce the specialist to the other appointed specialists for this study in order to assess cumulative effects.
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9 Project deliverables

The following deliverables are required:

- All shp and kml files relevant to the assessment.
- One draft and one final copy of the report – electronically (MS Word).
- A final report will be required approximately two weeks after submission of the draft report (once comments have been provided by the client and DSA).

10 Risk and Impact Assessment Phase

- a) The impacts identified must be assessed according to the EIA regulations, taking into account cumulative impacts of all sites, including alternative sites. Describe and assess the impacts (positive and negative) associated with the proposed development in order to be able to determine the risks posed by the activities associated with both the Construction and Operational Phases.
- b) Determine and rate the likely impacts associated with the proposed development as per **Appendix A**; and
- c) Recommend mitigation measures and management actions, to reduce the severity of the negative impacts and to enhance the positive impacts.

APPENDIX A

Risk assessment methodology

Criteria by which impacts is to be assessed

ASPECT	IMPACT RATING										
Status of the impact: A statement of whether the impact is positive (a benefit), negative (a cost), or neutral.											
Direct impacts	Impacts that are caused directly by the activity and generally occur at the same time and at the place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally obvious and quantifiable.										
Indirect impacts	Impacts of an activity are indirect or induced changes that may occur as a result of the activity. These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken, or which occur at a different place as a result of the activity.										
Cumulative impacts	Impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities. Cumulative impacts can occur from the collective impacts of individual minor actions over a period of time and can include both direct and indirect impacts.										
Nature of the impact: The evaluation of the nature is impact specific. Most negative impacts will remain negative, however, after mitigation, significance should reduce: • Positive. • Negative.											
Extent: A description of whether the impact would occur on a scale limited to within the study area (local), limited to within 5 km of the study area (area); on a regional scale i.e. Local Municipality (region); or would occur at a national or international scale. <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>Local</td><td>1</td></tr> <tr><td>Area</td><td>2</td></tr> <tr><td>Region</td><td>3</td></tr> <tr><td>National</td><td>4</td></tr> <tr><td>International</td><td>5</td></tr> </table>		Local	1	Area	2	Region	3	National	4	International	5
Local	1										
Area	2										
Region	3										
National	4										
International	5										
Duration: A prediction of whether the duration of the impact would be Immediate and once-off (less than one month), more than once, but short term (less than one year), regular, medium term (1 to 5 years), Long term (6 to 15 years), Project life/permanent (> 15 years, with the impact ceasing after the operational life of the development or should be considered as permanent). <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>Immediate</td><td>1</td></tr> <tr><td>Short term</td><td>2</td></tr> <tr><td>Medium term</td><td>3</td></tr> <tr><td>Long term</td><td>4</td></tr> <tr><td>Project life/permanent</td><td>5</td></tr> </table>		Immediate	1	Short term	2	Medium term	3	Long term	4	Project life/permanent	5
Immediate	1										
Short term	2										
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Criteria by which impacts is to be assessed

ASPECT | IMPACT RATING

Severity(extent +duration + intensity)

Intensity: This provides an order of magnitude of whether or not the intensity (magnitude/size/frequency) of the impact would be negligible, low, medium, high or very high. This is based on the following aspects:

- an assessment of the reversibility of the impact (permanent loss of resources, or impact is reversible after project life);
- whether or not the aspect is controversial;
- an assessment of the irreplaceability of the resource loss caused by the activity (whether the project will destroy the resources which are easily replaceable, or the project will destroy resources which are irreplaceable and cannot be replaced);
- the level of alteration to the natural systems, processes or systems.

Negligible	The impact does not affect physical, biophysical or socio-economic functions and processes.	1
Low/potential harmful	The impact has limited impacts on physical, biophysical or socio-economic functions and processes.	2
Medium/slightly harmful	The impact has an effect on physical, biophysical and socio-economic functions and processes, but in such a way that these processes can still continue to function albeit in a modified fashion.	3
High/Harmful	Where the physical, bio-physical and socio-economic functions and processes are impacted on in such a way as to cause them to temporarily or permanently cease.	4
Very high/Disastrous	Where the physical, bio-physical and socio-economic functions and processes are highly impacted on in such a way as to cause them to permanently cease.	5

Incidence (frequency + probability)

Frequency: This provides a description of any repetitive, continuous or time-linked characteristics of the impact: Once Off (occurring any time during construction or operation); Intermittent (occurring from time to time, without specific periodicity); Periodic (occurring at more or less regular intervals); Continuous (without interruption).

Once Off	Once	1
Rare	1/5 to 1/10 years	2
Frequent	Once a year	3
Very frequent	Once a month	4
Continuous	≥ Once a day/ per shift	5

Criteria by which impacts is to be assessed

ASPECT	IMPACT RATING												
Probability of occurrence: A description of the chance that consequences of that selected level of severity could occur during the exposure.													
Highly unlikely	The probability of the impact occurring is highly unlikely due to its design or historic experience. 1												
Improbable	The probability of the impact occurring is low due to its design or historic experience. 2												
Probable	There is a distinct probability of the impact occurring 3												
Almost certain	It is most likely that the impact will occur 4												
Definite	The impact will occur regardless of any prevention measures 5												
Risk rating	The risk rating is calculated based on input from the above assessments. The incidence of occurrence is calculated by adding the Extent of the impact to the duration of the impact. The Severity of the impact is calculated based on input from the extent of the impact, the duration and the intensity. Risk = Severity (extent +duration + intensity) x Incidence (frequency + probability) Significance: The significance of the risk based on the identified impacts has been expressed qualitatively as follows: ○ low – the impact is of little importance/insignificant, but may/may not require minimal management ○ medium - the impact is important, management is required to reduce negative impacts to acceptable levels. ○ high - the impact is of great importance, negative impacts could render development options or the entire project unacceptable if they cannot be reduced to acceptable levels and/or if they are not balanced by significant positive impacts, management of negative impacts is essential. <table border="1"> <tr> <td>Low risk</td><td>0 – 50</td></tr> <tr> <td>Medium risk</td><td>51 – 100</td></tr> <tr> <td>High risk</td><td>101 – 150</td></tr> <tr> <td>Low positive</td><td>0 – 50</td></tr> <tr> <td>Medium positive</td><td>51 – 100</td></tr> <tr> <td>High positive</td><td>101 – 150</td></tr> </table>	Low risk	0 – 50	Medium risk	51 – 100	High risk	101 – 150	Low positive	0 – 50	Medium positive	51 – 100	High positive	101 – 150
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