GEORGE
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EMAIL: info@sescc.net **WEBSITE:** www.sescc.net
ADDRESS: 102 Merriman Street, George 6530
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CAPE TOWN
TEL: +27 (0) 21 554 5195 **FAX:** +27 (0) 86 575 2869
EMAIL: betsy@sescc.net **WEBSITE:** www.sescc.net
ADDRESS: Tableview, Cape Town, 7441
PO BOX: 443, Milnerton, 7435

DRAFT
BASIC ASSESSMENT REPORT

FOR THE

THE PROPOSED DANA BAY EMERGENCY ACCESS ROAD ON REMAINER OF PORTION 7 OF THE FARM 225 AND ERF 14797, MOSSEL BAY

MOSSEL BAY MUNICIPALITY, WESTERN CAPE

In terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the amended (April 2017) Environmental Impact Assessment Regulations, 2014

PREPARED FOR: SMEC
13 Progress Street
George
6529

DATE: 29 November 2022

DEADP REF: 16/3/3/1/D6/29/00010/22
SES REF NO: 14/DB/MB/WC/05/22

Western Cape Government
Environmental Affairs and Development Planning

FORM NO. BAR10/2019

BASIC ASSESSMENT REPORT

THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) AND THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS.

NOVEMBER 2019

(For official use only)	
Pre-application Reference Number (if applicable):	
EIA Application Reference Number:	
NEAS Reference Number:	
Exemption Reference Number (if applicable):	
Date BAR received by Department:	
Date BAR received by Directorate:	
Date BAR received by Case Officer:	

GENERAL PROJECT DESCRIPTION

(This must Include an overview of the project including the Farm name/Portion/Erf number)

THE PROPOSED DANA BAY EMERGENCY ACCESS ROAD ON REMAINDER OF PORTION 7 OF THE FARM 225 AND ERF 14797, DANA BAY, MOSSEL BAY MUNICIPALITY, WESTERN CAPE

IMPORTANT INFORMATION TO BE READ PRIOR TO COMPLETING THIS BASIC ASSESSMENT REPORT

1. **The purpose** of this template is to provide a format for the Basic Assessment report as set out in Appendix 1 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), Environmental Impact Assessment ("EIA") Regulations, 2014 (as amended) in order to ultimately obtain Environmental Authorisation.

2. The Environmental Impact Assessment ("EIA") Regulations is defined in terms of Chapter 5 of the National Environmental Management Act, 19998 (Act No. 107 of 1998) ("NEMA") hereinafter referred to as the "NEMA EIA Regulations".

3. The required information must be typed within the spaces provided in this Basic Assessment Report ("BAR"). The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided.

4. All applicable sections of this BAR must be completed.

5. Unless protected by law, all information contained in, and attached to this BAR, will become public information on receipt by the Competent Authority. If information is not submitted with this BAR due to such information being protected by law, the applicant and/or Environmental Assessment Practitioner ("EAP") must declare such non-disclosure and provide the reasons for believing that the information is protected.

6. This BAR is current as of **November 2019**. It is the responsibility of the Applicant/ EAP to ascertain whether subsequent versions of the BAR have been released by the Department. Visit this Department's website at http://www.westerncape.gov.za/eadp to check for the latest version of this BAR.

7. This BAR is the standard format, which must be used in all instances when preparing a BAR for Basic Assessment applications for an environmental authorisation in terms of the NEMA EIA Regulations when the Western Cape Government Department of Environmental Affairs and Development Planning ("DEA&DP") is the Competent Authority.

8. Unless otherwise indicated by the Department, one hard copy and one electronic copy of this BAR must be submitted to the Department at the postal address given below or by delivery thereof to the Registry Office of the Department. Reasonable access to copies of this Report must be provided to the relevant Organs of State for consultation purposes, which may, if so indicated by the Department, include providing a printed copy to a specific Organ of State.

9. This BAR must be duly dated and originally signed by the Applicant, EAP (if applicable) and Specialist(s) and must be submitted to the Department at the details provided below.

10. The Department's latest Circulars pertaining to the "One Environmental Management System" and the EIA Regulations, any subsequent Circulars, and guidelines must be taken into account when completing this BAR.

11. Should a water use licence application be required in terms of the National Water Act, 1998 (Act No. 36 of 1998) ("NWA"), the "One Environmental System" is applicable, specifically in terms of the synchronisation of the consideration of the application in terms of the NEMA and the NWA. Refer to this Department's Circular EADP 0028/2014: One Environmental Management System.

12. Where Section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) ("NHRA") is triggered, a copy of Heritage Western Cape's final comment must be attached to the BAR.

13. The Screening Tool developed by the National Department of Environmental Affairs must be used to generate a screening report. Please use the Screening Tool link https://screening.environment.gov.za/screeningtool to generate the Screening Tool Report. The screening tool report must be attached to this BAR.

14. Where this Department is also identified as the Licencing Authority to decide on applications under the National Environmental Management: Air Quality Act (Act No. 29 of 2004) ('NEM:AQA"), the submission of the Report must also be made as follows, for-
Waste Management Licence Applications, this report must also (i.e., another hard copy and electronic copy) be submitted for the attention of the Department's Waste Management Directorate (Tel: 021-483-2728/2705 and Fax: 021-483-4425) at the same postal address as the Cape Town Office.

Atmospheric Emissions Licence Applications, this report must also be (i.e., another hard copy and electronic copy) submitted for the attention of the Licensing Authority or this Department's Air Quality Management Directorate (Tel: 021 483 2888 and Fax: 021 483 4368) at the same postal address as the Cape Town Office.

DEPARTMENTAL DETAILS

CAPE TOWN OFFICE: REGION 1 and REGION 2 **(Region 1: City of Cape Town, West Coast District)** **(Region 2: Cape Winelands District & Overberg District)**	**GEORGE OFFICE: REGION 3** **(Central Karoo District & Garden Route District)**
BAR must be sent to the following details: Western Cape Government Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 1 or 2) Private Bag X 9086 Cape Town, 8000 Registry Office 1st Floor Utilitas Building 1 Dorp Street, Cape Town Queries should be directed to the Directorate: Development Management (Region 1 and 2) at: Tel: (021) 483-5829 Fax (021) 483-4372	BAR must be sent to the following details: Western Cape Government Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 3) Private Bag X 6509 George, 6530 Registry Office 4th Floor, York Park Building 93 York Street George Queries should be directed to the Directorate: Development Management (Region 3) at: Tel: (044) 805-8600 Fax (044) 805 8650

MAPS

Provide a location map (see below) as Appendix A1 to this BAR that shows the location of the proposed development and associated structures and infrastructure on the property.	
Locality Map:	The scale of the locality map must be at least 1:50 000. For linear activities or development proposals of more than 25 kilometres, a smaller scale e.g., 1:250 000 can be used. The scale must be indicated on the map. The map must indicate the following: • an accurate indication of the project site position as well as the positions of the alternative sites, if any; • road names or numbers of all the major roads as well as the roads that provide access to the site(s) • a north arrow; • a legend; and • a linear scale. For ocean based or aquatic activity, the coordinates must be provided within which the activity is to be undertaken and a map at an appropriate scale clearly indicating the area within which the activity is to be undertaken. Where comment from the Western Cape Government: Transport and Public Works is required, a map illustrating the properties (owned by the Western Cape Government: Transport and Public Works) that will be affected by the proposed development must be included in the Report.

Provide a detailed site development plan / site map (see below) as Appendix B1 to this BAR; and if applicable, all alternative properties and locations.	
Site Plan:	Detailed site development plan(s) must be prepared for each alternative site or alternative activity. The site plans must contain or conform to the following: • The detailed site plan must preferably be at a scale of 1:500 or at an appropriate scale. The scale must be clearly indicated on the plan, preferably together with a linear scale. • The property boundaries and numbers of all the properties within 50m of the site must be indicated on the site plan. • On land where the property has not been defined, the co-ordinates of the area in which the proposed activity or development is proposed must be provided. • The current land use (not zoning) as well as the land use zoning of each of the adjoining properties must be clearly indicated on the site plan. • The position of each component of the proposed activity or development as well as any other structures on the site must be indicated on the site plan. • Services, including electricity supply cables (indicate aboveground or underground), water supply pipelines, boreholes, sewage pipelines, storm water infrastructure and access roads that will form part of the proposed development **must** be clearly indicated on the site plan. • Servitudes and an indication of the purpose of each servitude must be indicated on the site plan. • Sensitive environmental elements within 100m of the site must be included on the site plan, including (but not limited to): o Watercourses / Rivers / Wetlands o Flood lines (*i.e.,* 1:100 year, 1:50 year and 1:10 year where applicable); o Coastal Risk Zones as delineated for the Western Cape by the Department of Environmental Affairs and Development Planning ("DEA&DP"): o Ridges; o Cultural and historical features/landscapes; o Areas with indigenous vegetation (even if degraded or infested with alien species). • Whenever the slope of the site exceeds 1:10, a contour map of the site must be submitted. • North arrow A map/site plan must also be provided at an appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred and alternative sites indicating any areas that should be avoided, including buffer areas.
Site photographs	Colour photographs of the site that shows the overall condition of the site and its surroundings (taken on the site and taken from outside the site) with a description of each photograph. The vantage points from which the photographs were taken must be indicated on the site plan, or locality plan as applicable. If available, please also provide a recent aerial photograph. Photographs must be attached to this BAR as **Appendix C**. The aerial photograph(s) should be supplemented with additional photographs of relevant features on the site. Date of photographs must be included. Please note that the above requirements must be duplicated for all alternative sites.
Biodiversity Overlay Map:	A map of the relevant biodiversity information and conditions must be provided as an overlay map on the property/site plan. The Map must be attached to this BAR as **Appendix D**.
Linear activities or development and multiple properties	GPS co-ordinates must be provided in degrees, minutes and seconds using the Hartebeeshoek 94 WGS84 co-ordinate system. Where numerous properties/sites are involved (linear activities) you must attach a list of the Farm Name(s)/Portion(s)/Erf number(s) to this BAR as an Appendix. For linear activities that are longer than 500m, please provide a map with the co-ordinates taken every 100m along the route to this BAR as **Appendix A3**.

ACRONYMS

DAFF:	Department of Forestry and Fisheries
DEA:	Department of Environmental Affairs
DEA& DP:	Department of Environmental Affairs and Development Planning
DHS:	Department of Human Settlement
DoA:	Department of Agriculture
DoH:	Department of Health
DWS:	Department of Water and Sanitation
EMPr:	Environmental Management Programme
HWC:	Heritage Western Cape
NFEPA:	National Freshwater Ecosystem Protection Assessment
NSBA:	National Spatial Biodiversity Assessment
TOR:	Terms of Reference

WCBSP:	Western Cape Biodiversity Spatial Plan
WCG:	Western Cape Government

ATTACHMENTS

Note: The Appendices must be attached to the BAR as per the list below. Please use a ✓ **(**tick) or a **x** (cross) to indicate whether the Appendix is attached to the BAR.

The following checklist of attachments must be completed.

APPENDIX			**✓ (Tick) or x (cross)**
Appendix A:	**Maps**		
	Appendix A1:	**Locality Map**	✓
	Appendix A2:	**Coastal Risk Zones as delineated in terms of ICMA for the Western Cape by the Department of Environmental Affairs and Development Planning**	**x**
	Appendix A3:	**Map with the GPS co-ordinates for linear activities**	✓
Appendix B:	**Appendix B1:**	**Site development plan(s)**	✓
	Appendix B2	**A map of appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffer areas;**	✓
Appendix C:	**Photographs**		✓
Appendix D:	**Biodiversity overlay map**		✓
Appendix E:	**Permit(s) / license(s) / exemption notice, agreements, comments from State Department/Organs of state and service letters from the municipality.**		
	Appendix E1:	**Final comment/ROD from HWC** **Heritage Statement for possible graves**	✓ ✓
	Appendix E2:	**Copy of comment from Cape Nature**	**X**
	Appendix E3:	**Final Comment from the DWS**	**X**
	Appendix E4:	**Comment from the DEA: Oceans and Coast**	**X**
	Appendix E5:	**Comment from the DAFF**	**X**
	Appendix E6:	**Comment from WCG: Transport and Public Works**	**X**
	Appendix E7:	**Comment from WCG: DoA**	**X**
	Appendix E8:	**Comment from WCG: DHS**	**X**

	Appendix E9:	**Comment from WCG: DoH**	**X**
	Appendix E10:	**Comment from DEA&DP: Pollution Management**	**X**
	Appendix E11:	**Comment from DEA&DP: Waste Management**	**X**
	Appendix E12:	**Comment from DEA&DP: Biodiversity**	**X**
	Appendix E13:	**Comment from DEA&DP: Air Quality**	**X**
	Appendix E14:	**Comment from DEA&DP: Coastal Management**	**X**
	Appendix E15:	**Comment from the local authority**	**X**
	Appendix E16:	**Confirmation of all services (water, electricity, sewage, solid waste management)**	**X**
	Appendix E17:	**Comment from the District Municipality**	**X**
	Appendix E18:	**Copy of an exemption notice**	**X**
	Appendix E19	**Pre-approval for the reclamation of land**	**X**
	Appendix E20:	**Proof of agreement/TOR of the specialist studies conducted.**	**X**
	Appendix E21:	**Proof of land use rights**	**X**
	Appendix E22:	**Proof of public participation agreement for linear activities**	**x**
Appendix F:	**Public participation information: including a copy of the register of I&APs, the comments and responses Report, proof of notices, advertisements and any other public participation information as is required.**		✓
Appendix G:	**Specialist Report(s)**		✓
Appendix H:	**EMPr**		✓
Appendix I:	**Screening tool report**		✓
Appendix J:	**The impact and risk assessment for each alternative**		In BAR
Appendix K:	**Need and desirability for the proposed activity or development in terms of this Department's guideline on Need and Desirability (March 2013)/DEA Integrated Environmental Management Guideline**		✓
Appendix L:	**Traffic Impact Assessment** **Agricultural Statement**		**x**

SECTION A: ADMINISTRATIVE DETAILS

Highlight the Departmental Region in which the intended application will fall	~~CAPE TOWN OFFICE:~~		**GEORGE OFFICE:**
	~~REGION 1~~ ~~(City of Cape Town, West Coast District~~	~~REGION 2~~ ~~(Cape Winelands District & Overberg District)~~	**REGION 3 (Central Karoo District & Garden Route District)**
Duplicate this section where there is more than one Proponent Name of Applicant/Proponent:	Mossel Bay Municipality: Roads and Stormwater Department		
Name of contact person for Applicant/Proponent (if other):	Mr. D. Naidoo		
Company/ Trading name/State Department/Organ of State:	Mossel Bay Municipality: Roads and Stormwater Department		
Company Registration Number:	-		
Postal address:	Private Bag X 29		
	Mossel Bay	Postal code: 6500	
Telephone:	044 606-5082	Cell:	
E-mail:	dnaidoo@mosselbay.gov.za	Fax:	
Company of EAP:	Sharples Environmental Services cc		
EAP name:	John Sharples Michael Bennett		
Postal address:	PO Box 9087		
	George	Postal code: 6530	
Telephone:	044 873 4923	Cell:	
E-mail:	michael@sescc.net info@sescc.net	Fax: ( )	
Qualifications:	John Sharples: • Master Degree in Environmental Management • B-Tech in Nature Conservation Michael Bennett: • BSc: Environmental Science and Oceanography		
EAPASA registration no:	EAPASA registration no: 1485 (John Sharples) 2021/3163 (Michael Bennett)		
Duplicate this section where there is more than one landowner Name of landowner:	Tom Muller		
Name of contact person for landowner (if other):	Tom Muller		
Postal address:	Shop F92, Parkview Shopping Centre, Cnr Garsfontein Road and Netcare Street, Moreleta Park,		
	Pretoria East	Postal code: 0181	
Telephone:	012 368 1555	Cell:	
E-mail:	tom@rockwoodtheatre.co.za	Fax: ( )	
Name of Person in control of the land:	Tom Muller		
Name of contact person for person in control of the land:			
Postal address:	Same as above		
		Postal code:	
Telephone:	( )	Cell:	
E-mail:		Fax: ( )	

Duplicate this section where there is more than one Municipal Jurisdiction	Mossel Bay Municipality

Municipality in whose area of jurisdiction the proposed activity will fall:		
Contact person:	D. Naidoo	
Postal address:	Private Bag X 29	
	Mossel Bay	Postal code:6500
Telephone	044 606-5082	Cell:
E-mail:	dnaidoo@mosselbay.gov.za	Fax: ( )

SECTION B: CONFIRMATION OF SPECIFIC PROJECT DETAILS AS INLCUDED IN THE APPLICATION FORM

1.	Is the proposed development (please tick):	**New**	X	~~Expansion~~	
2.	Is the proposed site(s) a brownfield of greenfield site? Please explain..				
Remainder of Portion 7 of the Farm 225: Greenfield, the site is undeveloped Erf 14797: existing two track road					
3.	**For Linear activities or developments**				
3.1.	Provide the Farm(s)/Farm Portion(s)/Erf number(s) for all routes:				
Remainder of Portion 7 of the Farm 225 and Erf 14797, Dana Bay, Mossel Bay					
3.2.	Development footprint of the proposed development for all alternatives.	o Farm RE/7/225:	6m x 1350m = 11676 m²		
		o Erf 14797	6m x 600m = 3600 m²		
3.3.	Provide a description of the proposed development (e.g. for roads the length, width and width of the road reserve in the case of pipelines indicate the length and diameter) for all alternatives.				
Due to fire safety risks associated with only having one road in and out of Dana Bay, the Mossel Bay Municipality proposes to construct an additional gravel emergency access road in the western reaches of Dana Bay which will essentially extend Flora Road across Remainder of the Portion 7 of the Farm 225 and have a flat junction with the N2 opposite the existing R327 junction. The road will have a locked gate at both ends and will only be utilized in emergency situations. The proposed access road will be 6m wide with a reserve of 20m. The reason for the 20m road reserve is that in the event that the road has to be upgraded in the future, the correct road reserve is in place and land expropriation only needs to be undertaken once with the landowner.					

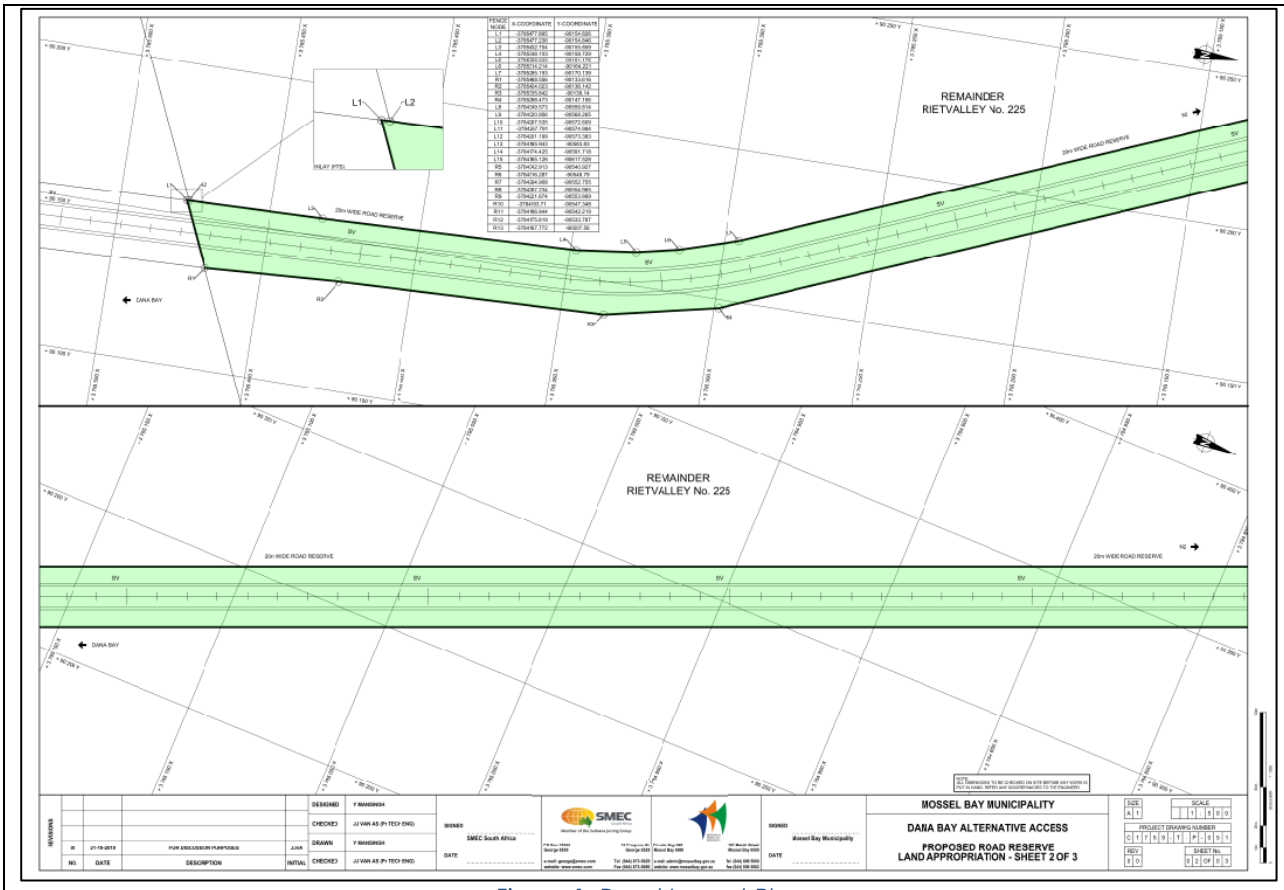


Figure 1: Road Layout Plan

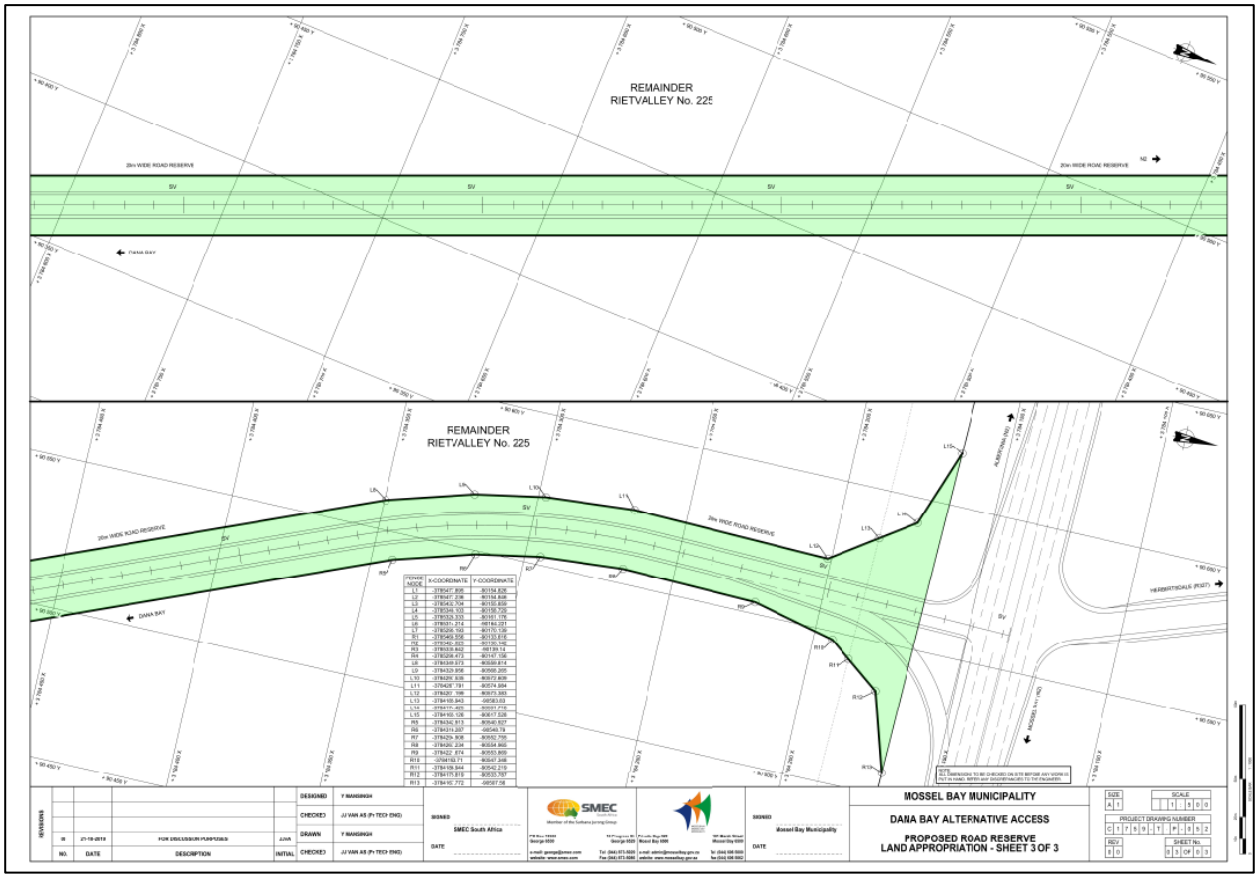


Figure 2: Road Layout Plan

The farm portion is currently rented out and is utilised for cattle grazing.

3.4.	Indicate how access to the proposed routes will be obtained for all alternatives.

The site will be accessed from the northern and southern most parts of the proposed road where it will junction with the N2, (opposite the R327 and N2 Junction), as shown in Figure 3, and the end of Flora Road as seen on Figure 4.

Figure 3: N2 Junction

Figure 4: Flora Road Junction

Since the NOI, the preferred Alternative has changed from that of a tarred road to that of a gravel road. The preferred Alternative A will only be an emergency road with locked gates at each end. This Alternative was developed due to the findings of the TIA which highlighted the need for a large diamond interchange. This will drastically drive the cost of the project up, therefore a gravel road only used in times of emergencies negates the need for a large intersection.

Please see the findings of the TIA for Alternative B, please note that this alternative is however not viable and should not be authorised.

A Traffic Impact Assessment, compiled SMEC, dated June 2020, for Alternative B (not viable), the conclusions and recommendations are as follows For Alternative B (non-viable option):

For future growth purposes, it was assumed that the remaining erven in the Dana Bay will be 50% developed within 5 years, and 100% developed within 10 years. It is anticipated that the other planned developments will be 50% developed within 5 years, and 100% developed within 10 years. It is anticipated that Phase 1 of the land use development would generate 894 and 871 new vehicular trips during the Weekday AM and PM Peak Hours respectively, and Phase 1 + 2 of the land use development would generate 1 788 and 1 743 new vehicular trips during the Weekday AM and PM Peak Hours respectively.

In the event that the Dana Bay Alternate Access would serve as a primary or secondary access to the area, the following road improvements would be required:
• Construct a diamond interchange with single lane on- and off-ramps (figure 5); and
• The bridge over the N2 Freeway to comprise one lanes per direction, as well as a short right-turn lane; and
• Traffic signals serving as junction control at the north terminal (Figure 6) and south terminal (Figure 7) of the diamond interchange.

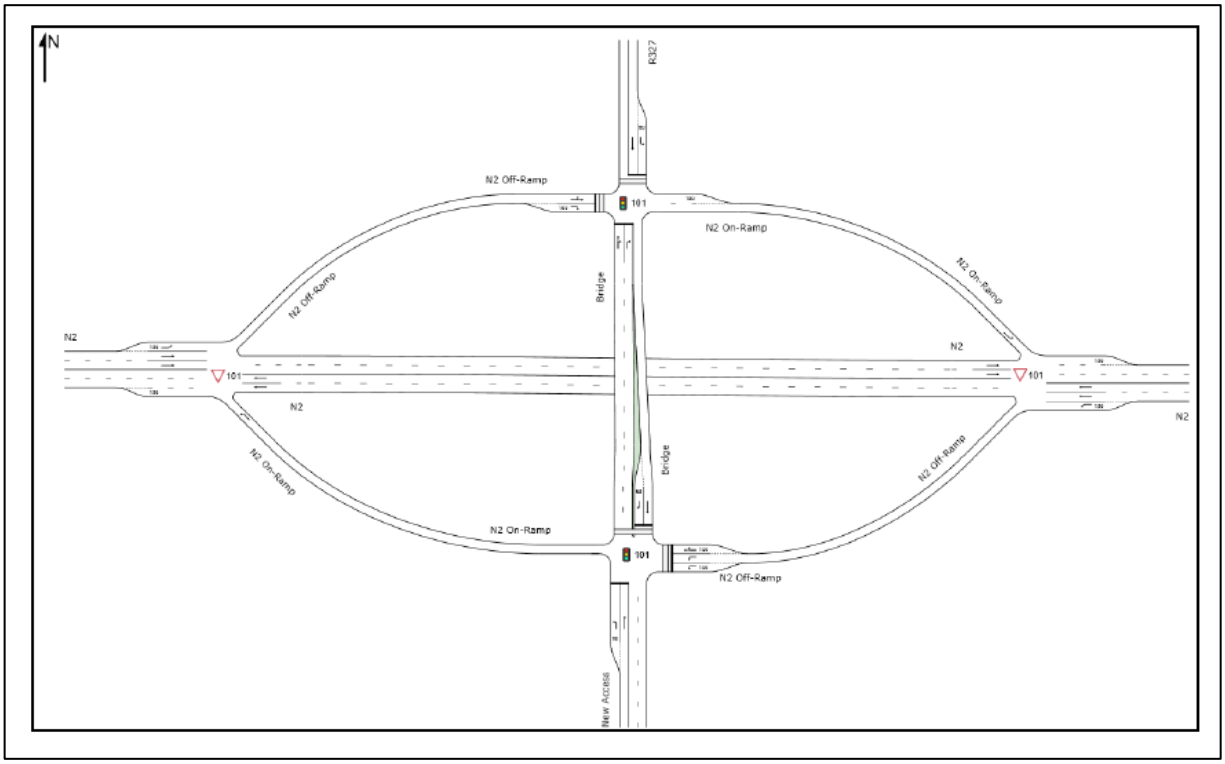


Figure 5: N2 and alternative access Diamond Interchange

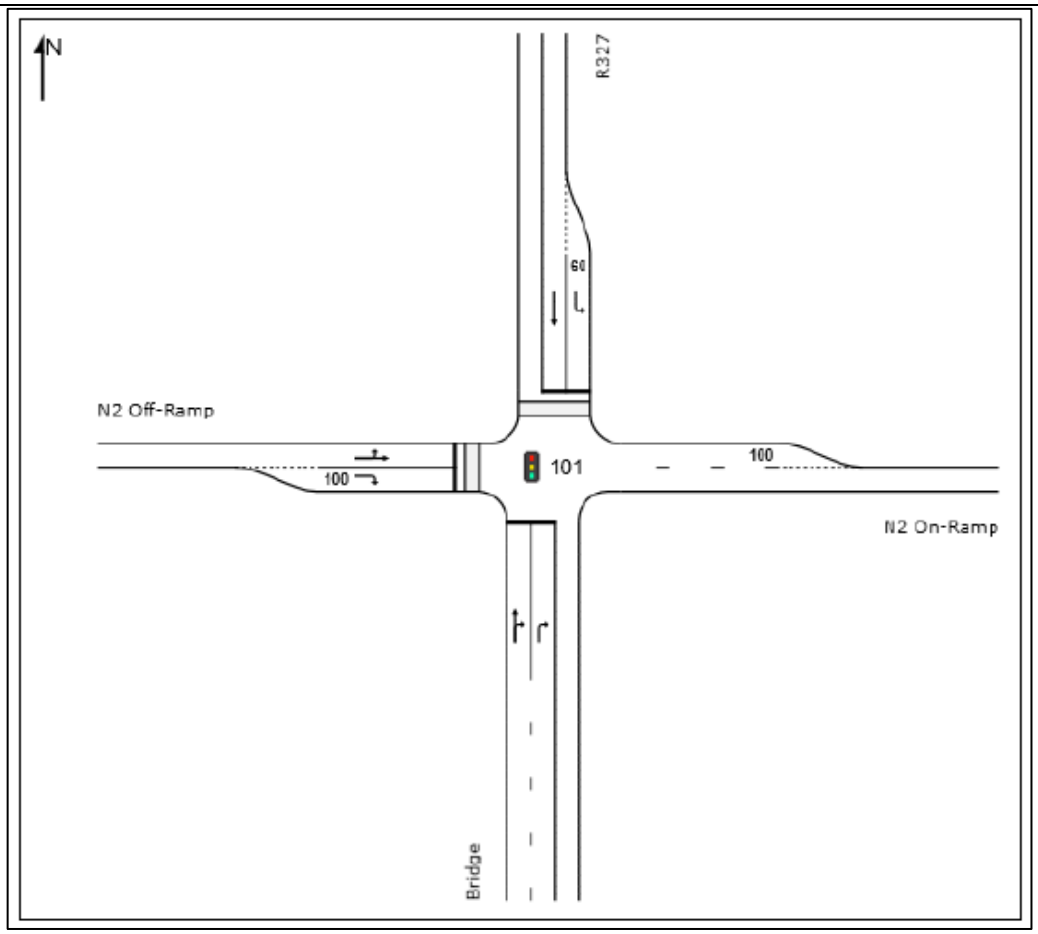


Figure 6: North terminal

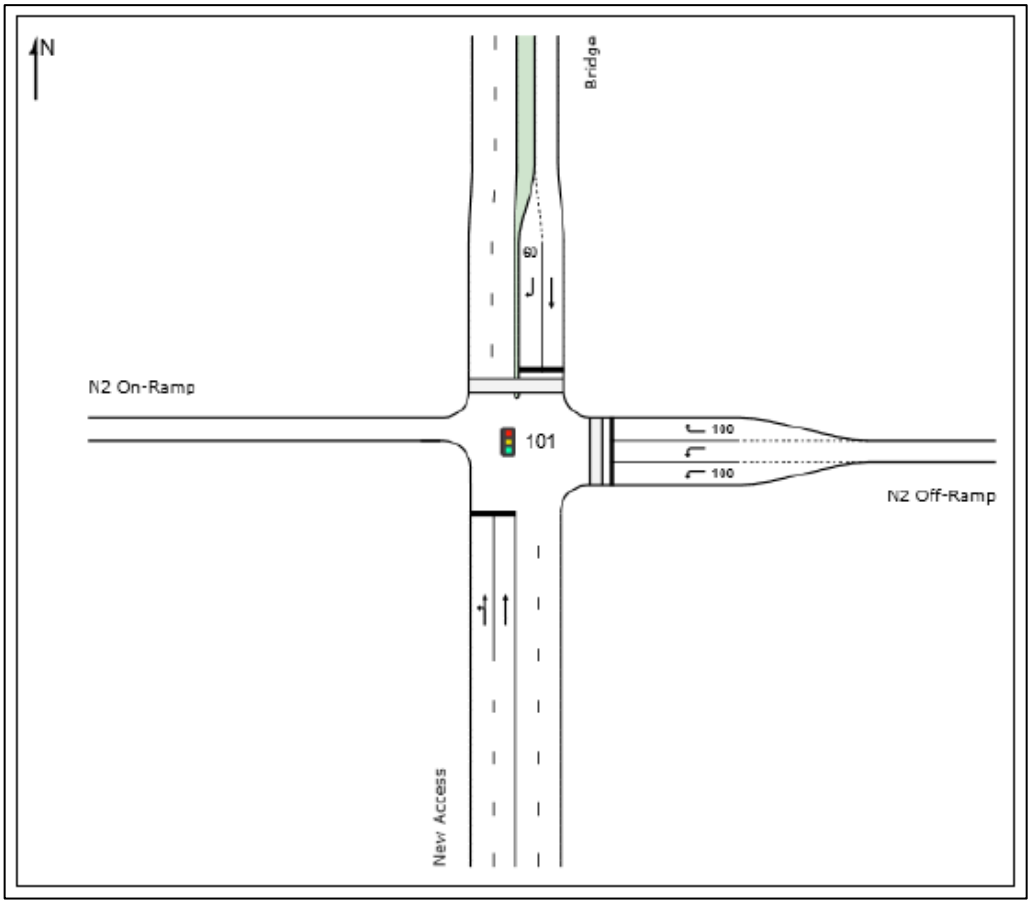


Figure 7: South terminal

3.5.	SG Digit codes of the Farms/Farm Portions/Erf numbers for all alternatives	RE/7/225: C05100000000022500007 Erf 14797: C05100070001479700000
3.6.	**Starting point co-ordinates for all alternatives**	
	Latitude (S)	**34°10'51.85"S**
	Longitude (E)	**22° 1'3.37"E**
	Middle point co-ordinates for all alternatives	
	Latitude (S)	**34°11'12.33"S**
	Longitude (E)	**22° 1'11.07"E**
	End point co-ordinates for all alternatives	
	Latitude (S)	**34°11'50.53"S**
	Longitude (E)	**22° 1'22.39"E**
Note: For Linear activities or developments longer than 500m, a map indicating the co-ordinates for every 100m along the route must be attached to this BAR as Appendix A3.		

SECTION C: LEGISLATION/POLICIES AND/OR GUIDELINES/PROTOCOLS

1. Exemption applied for in terms of the NEMA and the NEMA EIA Regulations

Has exemption been applied for in terms of the NEMA and the NEMA EIA Regulations. If yes, include a copy of the exemption notice in Appendix E18.	~~YES~~	**NO**

2. Is the following legislation applicable to the proposed activity or development.

The National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) ("ICMA"). If yes, attach a copy of the comment from the relevant competent authority as Appendix E4 and the pre-approval for the reclamation of land as Appendix E19.	~~YES~~	**NO**
The National Heritage Resources Act, 1999 (Act No. 25 of 1999) ("NHRA"). If yes, attach a copy of the comment from Heritage Western Cape as Appendix E1.	**YES**	~~NO~~
The National Water Act, 1998 (Act No. 36 of 1998) ("NWA"). If yes, attach a copy of the comment from the DWS as Appendix E3.	**YES**	~~NO~~
The National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) ("NEM:AQA"). If yes, attach a copy of the comment from the relevant authorities as Appendix E13.	~~YES~~	**NO**
The National Environmental Management Waste Act (Act No. 59 of 2008) ("NEM:WA")	~~YES~~	**NO**
The National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004 ("NEMBA").	~~YES~~	**NO**
The National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) ("NEMPAA").	~~YES~~	**NO**
The Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983). If yes, attach comment from the relevant competent authority as Appendix E5.	~~YES~~	**NO**

3. Other legislation

List any other legislation that is applicable to the proposed activity or development.

- Amended Environmental Impact Assessment Regulations, GN No. R. 324 – 327 (7 April 2017)
- National Environmental Management: Biodiversity Act (NEMBA), Act 10 of 2004
- The Constitution of the Republic of South Africa, 1996 (Act 108 of 1996)
- Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983) (CARA)
- National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA)
- Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013) (SPLUMA)
- The National Water Act, No. 36 of 1998
- The National Heritage Resources Act, Act 25 of 1999

4. Policies

Explain which policies were considered and how the proposed activity or development complies and responds to these policies.
The following priority projects were recommended in the Fourth Generation IDP 2017 – 2022. • Upgrade of Flora road, including public transport and non-motorised transport routes using the "complete streets" approach. Paving of sidewalks in Flora Road is also included; • Re-align Flora road and link to the existing Crotz Street / R102 Louie Fourie Road intersection and signalise the new four-way intersection • Extend Kreupelhout Street to Flora Road to provide access to the proposed Technikon site • Extend Apiesdoring Street from Spekboom Street to Flora Road

5. Guidelines

List the guidelines which have been considered relevant to the proposed activity or development and explain how they have influenced the development proposal.
• Guideline on Need and Desirability, 2017, Department of Environmental Affairs • Guideline on Need and Desirability (March 2013). • DEA&DP EIA Guideline and Information Document Series: March 2013 - Generic terms of reference for EAPs and Project schedules • DEA&DP EIA Guideline and Information Document Series: March 2013 - Guideline on public participation • DEA&DP EIA Guideline and Information Document Series: March 2013 - Guideline on alternatives • Guideline on Alternatives (2013) • Guideline for determining the scope of specialist involvement in EIA processes, June 2005. • Guideline for the Review of Specialist Input in the EIA process (June 2005) • Guideline for involving biodiversity specialists in the EIA process, June 2005. • Guideline for Environmental Management Plans (June 2005); • Western Cape Provincial Spatial development Framework • Mossel Bay IDP & SDF

6. Protocols

Explain how the proposed activity or development complies with the requirements of the protocols referred to in the NOI and/or application form
No applicable Protocol

SECTION D: APPLICABLE LISTED ACTIVITIES

List the applicable activities in terms of the NEMA EIA Regulations

Activity No(s):	Provide the relevant **Basic Assessment Activity(ies)** as set out in **Listing Notice 1**	Describe the portion of the proposed development to which the applicable listed activity relates.
12	**The development of**— (i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or (**ii) infrastructure or structures with a physical footprint of 100 square metres or more;** **where such development occurs—** (a) within a watercourse; (b) in front of a development setback; or **(c) if no development setback exists, within 32 metres of a watercourse,**	The proposed emergency access road will be larger than 100 square meters and will be located within 32 meters from a unused farm dam and drainage line that extends from the dam.

	measured from the edge of a watercourse; — excluding— (aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour; (bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; (cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies; (dd) where such development occurs within an urban area; [or] (ee) where such development occurs within existing roads, [or] road reserves or railway line reserves; or (ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.	
19	**The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse**; but excluding where such infilling, depositing, dredging, excavation, removal or moving— (a) will occur behind a development setback; (b) is for maintenance purposes undertaken in accordance with a maintenance management plan; (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies; (d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or (e) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.	The construction of the road will result in the movement of more than 10 Cubic meters of material from the unused dam drainage line.
24	**The development of a road**— (i) for which an environmental authorisation was obtained for the routedetermination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or	The road is approximately 1.95km in length and will have a road revere of 20m

	(**ii) with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres;** but excluding a road— (a) which [are] is identified and included in activity 27 in Listing Notice 2 of 2014; (b) where the entire road falls within an urban area; or (c) which is 1 kilometre or shorter.	
Activity No(s):	Provide the relevant **Basic Assessment Activity(ies)** as set out in **Listing Notice 3**	Describe the portion of the proposed development to which the applicable listed activity relates.
4	**The development of a road wider than 4 metres with a reserve less than 13,5 metres.** **i. Western Cape** i. Areas zoned for use as public open space or equivalent zoning; **ii. Areas outside urban areas;** **(aa) Areas containing indigenous vegetation;** (bb) Areas on the estuary side of the development setback line or in an estuarine functional zone where no such setback line has been determined; or iii. Inside urban areas: (aa) Areas zoned for conservation use; or (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority.	This activity will not be triggered as the road reserve is wider than 13.5m

Note:

- The listed activities specified above must reconcile with activities applied for in the application form. The onus is on the Applicant to ensure that all applicable listed activities are included in the application. If a specific listed activity is not included in an Environmental Authorisation, a new application for Environmental Authorisation will have to be submitted.
- Where additional listed activities have been identified, that have not been included in the application form, and amended application form must be submitted to the competent authority.

List the applicable waste management listed activities in terms of the NEM:WA

Activity No(s):	Provide the relevant **Basic Assessment Activity(ies)** as set out in **Category A**	Describe the portion of the proposed development to which the applicable listed activity relates.

List the applicable listed activities in terms of the NEM:AQA

Activity No(s):	Provide the relevant **Listed Activity(ies)**	Describe the portion of the proposed development to which the applicable listed activity relates.

SECTION E: PLANNING CONTEXT AND NEED AND DESIRABILITY

1.	Provide a description of the preferred alternative.

Due to fire safety risks associated with only having one road in and out of Dana Bay and due to peak hour congestion, the Mossel Bay Municipality proposes to construct an emergency access road in the western reaches of Dana Bay which will essentially extend Flora Road on Erf 14797 across Remainder of the Portion 7 of the Farm 225 and junction with the N2 opposite the existing R327 junction. The road will have a locked gate at both ends and will only be utilized in emergency situations. The proposed access road will be 6m wide with a reserve of 20m. The wide road reserve is that if in the future there is a need to upgrade the road to a permanent access road the correct road reserve is in place and the land will only have to be expropriated from the landowner once.

The farm portion is currently rented out and is utilised for cattle grazing. Please refer to Figure 8 for the proposed route of the Dana Bay Access Road.

Figure 8: Proposed Dana Bay Access Road

2.	Explain how the proposed development is in line with the existing land use rights of the property as you have indicated in the NOI and application form? Include the proof of the existing land use rights granted in Appendix E21.
The proposed entails the construction of an emergency access road.	
3.	Explain how potential conflict with respect to existing approvals for the proposed site (as indicated in the NOI/and or application form) and the proposed development have been resolved.
Not Applicable	
4.	Explain how the proposed development will be in line with the following?
4.1	The Provincial Spatial Development Framework.
According to the Mossel Bay Municipality Spatial Development Framework (May 2018), the Dana Bay residents are concerned that they only have a single access road into the area off of Louis Fourie Road next to Kwanonqaba. In addition, it also indicates that proposals have been made for a second access road to the west linking up with the Mossgas access road on the N2. Construction as mentioned must be investigated. The proposal is therefore in line with the Mossel bay SDF (2018)	
4.2	The Integrated Development Plan of the local municipality.
The Mossel Bay IDP (4th Generation, 2017 – 2022), has indicated that one of the "SWOT" analysis Weakness of Dana Bay is that there is no Evacuation escape route out of Dana Bay. The IDP indicates that there has been R15 000 000 allocated for the Construction of an Emergency road in Dana Bay, for 2020 and beyond (outer years). The following priority projects were recommended in the Fourth Generation IDP 2017 – 2022. • Upgrade of Flora road, including public transport and non-motorised transport routes using the "complete streets" approach. Paving of sidewalks in Flora Road is also included; • Re-align Flora road and link to the existing Crotz Street / R102 Louie Fourie Road intersection and signalise the new four-way intersection • Extend Kreupelhout Street to Flora Road to provide access to the proposed Technikon site • Extend Apiesdoring Street from Spekboom Street to Flora Road The proposal is therefore directly in line with the IDP and the proposal is in line with the time frames set aside to develop the proposed access road.	
4.3.	The Spatial Development Framework of the local municipality.
According to the Mossel Bay Municipality Spatial Development Framework (May 2018), the Dana Bay residents are concerned that they only have a single access road into the area off of Louis Fourie road next to Kwanonqaba. In addition, it also indicates that proposals have been made for a second access road to the west linking up with the MossGas access road on the N2. Construction as mentioned must be investigated. The proposal is therefore in line with the Mossel Bay SDF (2018)	
4.4.	The Environmental Management Framework applicable to the area.
There were no intersections with an EMF for this site.	
5.	Explain how comments from the relevant authorities and/or specialist(s) with respect to biodiversity have influenced the proposed development.
Please refer to the comments and response report (Appendix F).	
6.	Explain how the Western Cape Biodiversity Spatial Plan (including the guidelines in the handbook) has influenced the proposed development.
As seen from Figure 9, showing the CBA layers from the Western Cape Biodiversity Spatial Plan, some patchy CBA 1: Terrestrial, will be affected by the proposal in the northern reaches near the N2. In the southern reaches, near Dana Bay, CBA 1: Terrestrial will be affected. In addition to CBA 2: Terrestrial will be affected by the proposal in the southern reaches of the site.	

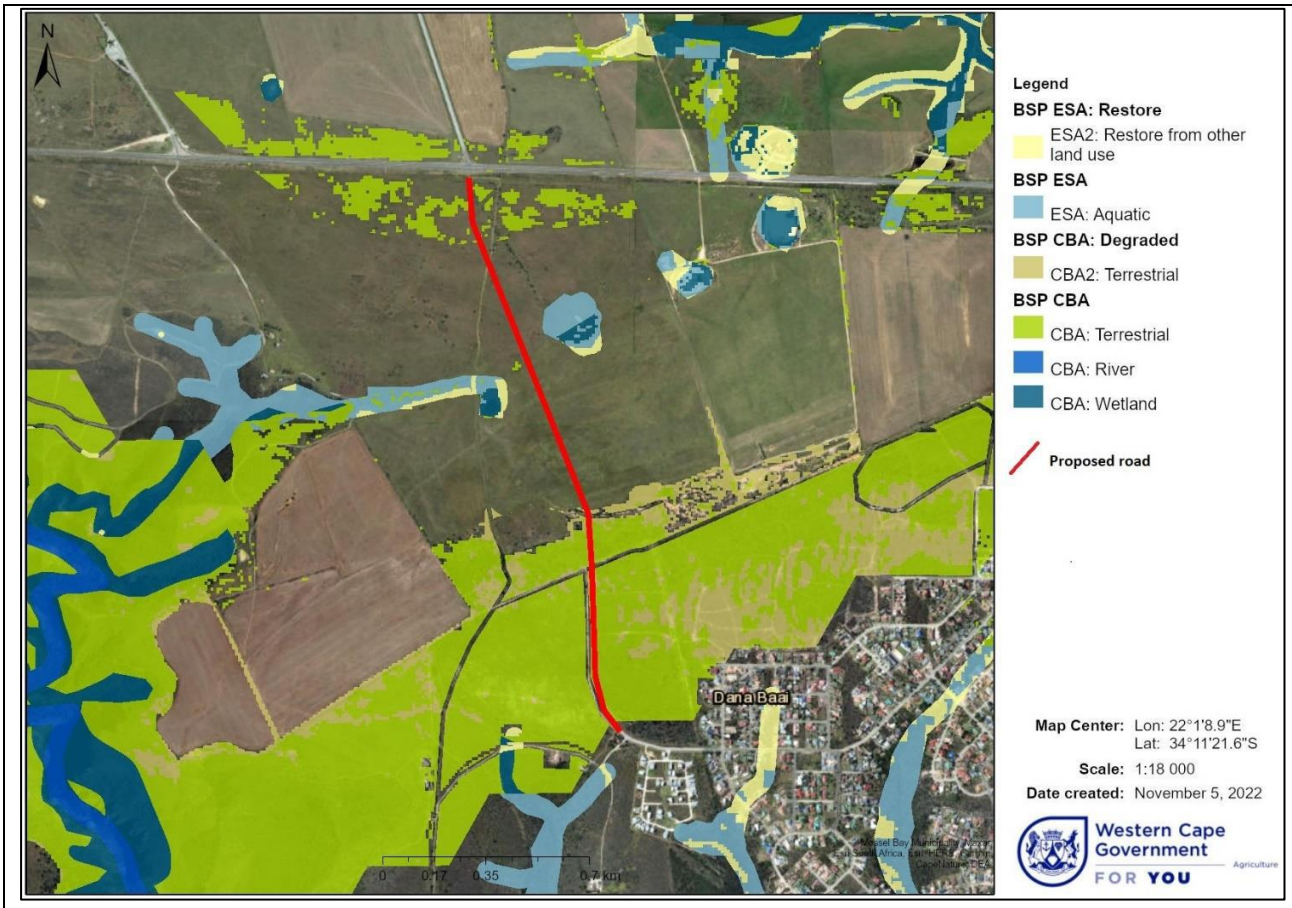


Figure 9: WCBSP 2017

Please note the CBA mapping in the northern reaches of the site is sporadic and may have been mapped so in error.

According to the Botanical Assessment: Proposed Dana Bay Access Road, dated November 2022, compiled by Mark Berry Environmental Consultants:

Being located on the Southern Cape coastal plain in close proximity to the coast, the site occurs in a typical coastal fynbos/thicket environment. This is confirmed by the presence of fynbos species, such as *Erica versicolor, Leucospermum praecox, Protea lanceolata* and several *restio* species, as well as thicket species, such as *Putterlickia pyracantha, Diospyros dichrophylla, Pterocelastrus tricuspidatus and Lauridia tetragona*. According to the 2012 SA Vegetation Map, the southern part of the site has been mapped as Canca Limestone Fynbos and the northern part as North Langeberg Sandstone Fynbos Groot Brak Dune Strandveld (along the coast), Albertinia Sand Fynbos and Central Coastal Shale Band Vegetation are also present in the larger area.

Canca Limestone Fynbos stretches across the Southern Cape lowlands from Witsand (Cape Infanta) in the west to the Mossel Bay area in the east, while North Langeberg Sandstone Fynbos is associated with the northern slopes of the Langeberg, as well as the Aasvoëlberg hills from Albertinia to Mossel Bay (Mucina, 2006). Groot Brak Dune Strandveld stretches from the Gouritz mouth in the west to Victoria Bay in the east (Mucina, 2006). The latter, which is easy to spot with its impenetrable, thorny thicket structure, occurs in more sheltered areas along the coast and along drainage lines. Albertinia Sand Fynbos is associated with deeper sand habitats commonly found on the Albertinia flats.

During the site survey it was found that the vegetation in the southern part of the site comprises fynbos with a strong thicket influence in a few places. The latter could be the result of senescence. With regards to vegetation type, it leans more towards Albertinia Sand Fynbos, with *Erica versicolor, Leucospermum praecox, Bobartia robusta and Thamnochortus insignis* important taxa in the latter type. However, there is also an affinity with Canca Limestone Fynbos and North Langeberg

Sandstone Fynbos, with *Protea lanceolata* an important taxon in the former, and *Erica versicolor and Leucadendron salignum important in the latter. Carissa bispinosa, Diospyros dichrophylla, Putterlickia pyracantha, Pterocelastrus tricuspidatus, Gymnosporia buxifolia and Lauridia tetragona are important Groot Brak Dune Strandveld taxa.*

Being well represented in the larger area, Canca Limestone Fynbos is currently not considered a threatened vegetation type. However, agricultural activities, alien plant infestation and coastal developments remain major threats for certain species restricted to this vegetation type. About 81% of Canca Limestone Fynbos remains (Skowno, 2019). However, due to its poor conservation status its protection in the coastal areas should remain a priority. Less than 1% is formally conserved in the Pauline Bohnen and Geelkrans Nature Reserves (Mucina, 2006). Albertinia Sand Fynbos, on the other hand, is listed as Vulnerable (DEA, 2011). About 55% of it is still left (Skowno, 2019), while only 5% is formally protected in the De Hoop, Pauline Bohnen, Geelkrans, Kleinjongensfontein, Blomboschfontein and Skulpiesbaai Nature Reserves (DEA, 2011). North Langeberg Sandstone Fynbos is not listed as threatened. About 92% of it remains, while 13% is formally conserved in the Boosmansbos Wilderness Area and an additional 45% in mountain catchment areas *(Mucina, 2006)*.

The proposed access road runs through two areas mapped as terrestrial critical biodiversity areas (CBA's). The southern portion forms part of a biodiversity corridor that runs in an east-west direction past the northern side of Dana Bay. Apart from providing a backbone to the local biodiversity network, the latter corridor serves as an important passage along which fauna can migrate between the vegetation remnants. It is unclear what the rationale is behind the patchy CBA at the northern end of the route next to the N2. On the ground there does not seem to be any difference between the CBA patches and the areas in between, mapped as 'other natural areas'.

There are no formally protected areas within a 20 km radius of the site, only a few private game reserves. Reasons for the importance of the above-mentioned CBA's include the presence of SA vegetation types (Canca Limestone Fynbos and North Langeberg Sandstone Fynbos), a critically endangered vegetation variant (Petrosa Fynbos-Renosterveld), threatened vertebrate habitat (bontebok) and a few wetland types.

CBA's are defined as areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure (Pool-Stanvliet, 2017). These sites are selected for meeting national targets for species, habitats and ecological processes (Pool-Stanvliet, 2017). Many of these areas support known occurrences of threatened plant species, and/or may be essential elements of designated ecological corridors. Loss of designated CBA's is therefore not recommended. With the proposed road running through the CBA corridor one can expect some impact on its functionality.

Please also refer to Section G.4.7 of this report which includes the findings of the Terrestrial Biodiversity Compliance Statement and Assessment.

7.	Explain how the proposed development is in line with the intention/purpose of the relevant zones as defined in the ICMA.
The ICMA does not apply to this proposal as the closest point of the proposal is approximately 1800m north of the High Water Mark (HWM).	
8.	Explain whether the screening report has changed from the one submitted together with the application form. The screening report must be attached as Appendix I.
No Change	
9.	Explain how the proposed development will optimise vacant land available within an urban area.
Not applicable to this proposal.	
10.	Explain how the proposed development will optimise the use of existing resources and infrastructure.
The proposal will optimise existing resources by not constructing a tarred road which will require an expensive interchange. The gravel road will also mean that a cattle creep will not have to be constructed for the grazing livestock to cross the road. The western end of Flora Road will be utilised as the start point of the emergency access road which will optimes the use of Flora Road. The proposal is however mainly to optimise the emergency readiness of Dana Bay to deal with	

evacuations in the case of a fire spreading from east to west. In the current situation a fire sweeping from east to west will trap residents, possibly leading to large loss of life.	
11.	Explain whether the necessary services are available and whether the local authority has confirmed sufficient, spare, unallocated service capacity. (Confirmation of all services must be included in Appendix E16).
Not applicable to this proposal	
12.	In addition to the above, explain the need and desirability of the proposed activity or development in terms of this Department's guideline on Need and Desirability (March 2013) or the DEA's Integrated Environmental Management Guideline on Need and Desirability. This may be attached to this BAR as Appendix K.
Please refer to Appendix K	

SECTION F: PUBLIC PARTICIPATION

The Public Participation Process ("PPP") must fulfil the requirements as outlined in the NEMA EIA Regulations and must be attached as Appendix F. Please note that If the NEM: WA and/or the NEM: AQA is applicable to the proposed development, an advertisement must be placed in at least two newspapers.

1. Exclusively for linear activities: Indicate what PPP was agreed to by the competent authority. Include proof of this agreement in Appendix E22.

As the proposal falls within the confines of one property, normal Public Participation Process measures will be undertaken as outlined in the NEMA EIA Regulations.

2. Confirm that the PPP as indicated in the application form has been complied with. All the PPP must be included in Appendix F.

Confirmed. Please refer to Appendix F.

3. Confirm which of the State Departments and Organs of State indicated in the Notice of Intent/application form were consulted with.

Department of Environmental Affairs and Development Planning: Development Management (Region 3)
Garden Route District Municipality: Health and Environmental Services
Garden Route District Municipality • Municipal Manager • Executive Manager: Planning and Economic
District Roads
Mossel Bay Local Municipality • Municipal Manager • Director Planning & Economic Development
Mossel Bay Local Municipality Ward Councilor (Ward 11)
CapeNature Scientific Services: Land Use Advice
Breede - Gouritz Catchment Management Agency
Western Cape Government: Department of Agriculture
Heritage Western Cape
Mossel Bay Heritage Association

4. If any of the State Departments and Organs of State were not consulted, indicate which and why.

In terms of this proposal, only the applicable state Departments were contacted.

5. if any of the State Departments and Organs of State did not respond, indicate which.

Garden Route District Municipality: Health and Environmental Services
Garden Route District Municipality

Municipal Manager Executive Manager: Planning and Economic
District Roads
Mossel Bay Local Municipality Municipal Manager Director Planning & Economic Development
Mossel Bay Local Municipality Ward Councilor (Ward 11)
Western Cape Government: Department of Agriculture
Mossel Bay Heritage Association

6. Provide a summary of the issues raised by I&APs and an indication of the manner in which the issues were incorporated into the development proposal.

Please refer to the Comments and Response Report, Appendix F.

Note:

A register of all the I&AP's notified, including the Organs of State, and all the registered I&APs must be included in Appendix F. The register must be maintained and made available to any person requesting access to the register in writing.

The EAP must notify I&AP's that all information submitted by I&AP's becomes public information.

Your attention is drawn to Regulation 40 (3) of the NEMA EIA Regulations which states that *"Potential or registered interested and affected parties, including the competent authority, may be provided with an opportunity to comment on reports and plans contemplated in subregulation (1) prior to submission of an application but **must** be provided with an opportunity to comment on such reports once an application has been submitted to the competent authority."*

All the comments received from I&APs on the pre -application BAR (if applicable and the draft BAR must be recorded, responded to and included in the Comments and Responses Report and must be included in Appendix F.

All information obtained during the PPP (the minutes of any meetings held by the EAP with I&APs and other role players wherein the views of the participants are recorded) and must be included in Appendix F.

Please note that proof of the PPP conducted must be included in Appendix F. In terms of the required "proof" the following is required:

- a site map showing where the site notice was displayed, dated photographs showing the notice displayed on site and a copy of the text displayed on the notice;
- in terms of the written notices given, a copy of the written notice sent, as well as:
  - if registered mail was sent, a list of the registered mail sent (showing the registered mail number, the name of the person the mail was sent to, the address of the person and the date the registered mail was sent);
  - if normal mail was sent, a list of the mail sent (showing the name of the person the mail was sent to, the address of the person, the date the mail was sent, and the signature of the post office worker or the post office stamp indicating that the letter was sent);
  - if a facsimile was sent, a copy of the facsimile Report;
  - if an electronic mail was sent, a copy of the electronic mail sent; and
  - if a "mail drop" was done, a signed register of "mail drops" received (showing the name of the person the notice was handed to, the address of the person, the date, and the signature of the person); and
- a copy of the newspaper advertisement ("newspaper clipping") that was placed, indicating the name of the newspaper and date of publication (of such quality that the wording in the advertisement is legible).

SECTION G: DESCRIPTION OF THE RECEIVING ENVIRONMENT

All specialist studies must be attached as Appendix G.

1. Groundwater

1.1.	Was a specialist study conducted?	~~YES~~	**NO**
1.2.	Provide the name and or company who conducted the specialist study.		
1.3.	Indicate above which aquifer your proposed development will be located and explain how this has influenced your proposed development.		

As seen from Figure 10 the proposed site is located on a minor aquifer

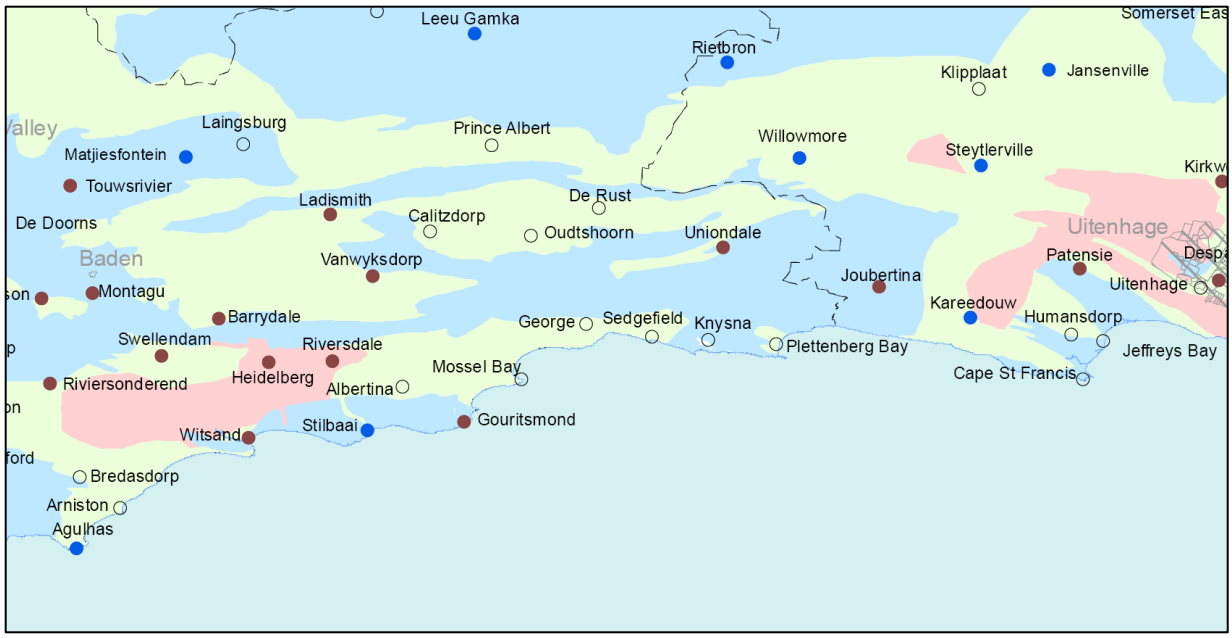


Figure 10: Aquifer classification

1.4.	Indicate the depth of groundwater and explain how the depth of groundwater and type of aquifer (if present) has influenced your proposed development.

2. Surface water

2.1.	Was a specialist study conducted?	**YES**	~~NO~~
2.2.	Provide the name and/or company who conducted the specialist study.		
Debbie Fordham, Sharples Environmental Services cc			
2.3.	Explain how the presence of watercourse(s) and/or wetlands on the property(ies) has influenced your proposed development.		

The presence of the water course located west of the route and the two unused dams influenced the route determination to avoid those areas.

The specialist study did however find the presence of a small depression wetland along the proposed route.

The wetland identified is not connected to the river network and the water source is likely to be rainfall dominated and prolonged flooding from restricted infiltration by a sub-surface clay layer. There is only temporary wetness and thus it is dominated by grass species. Soil augering within the depression showed evidence of periods of soil saturation with the presence of mottles within 50cm of the surface.

According to the Freshwater assessment:
There is a very small and shallow depression on the plateau between the N2 Road and Dana Bay. It was dry at the time of assessment. The definition of a depression wetland is "a wetland or aquatic ecosystem with closed (or at least near-closed) elevation contours, which increases in depth from the perimeter to a central area of greatest depth and within which water typically accumulates" (Grenfell et al. 2019). The wetland identified is not connected to the river network and the water source is likely to be rainfall dominated and prolonged flooding from restricted infiltration by a sub-surface clay layer. There is only temporary wetness and thus it is dominated by grass species. Soil augering within the depression showed evidence of periods of soil saturation with the presence of mottles within 50cm of the surface.
The wetland can be classified as a geochemical depression (Grenfell et al. 2009). It is rarely inundated and temporary. It is located in a highly disturbed area and there is a possibility that it is artificial and has formed as a result of some agricultural activity (Figure 11). However, this cannot be confirmed

with absolute certainty and therefore geomorphological and ecological reasons for the formation of the depression were also investigated.

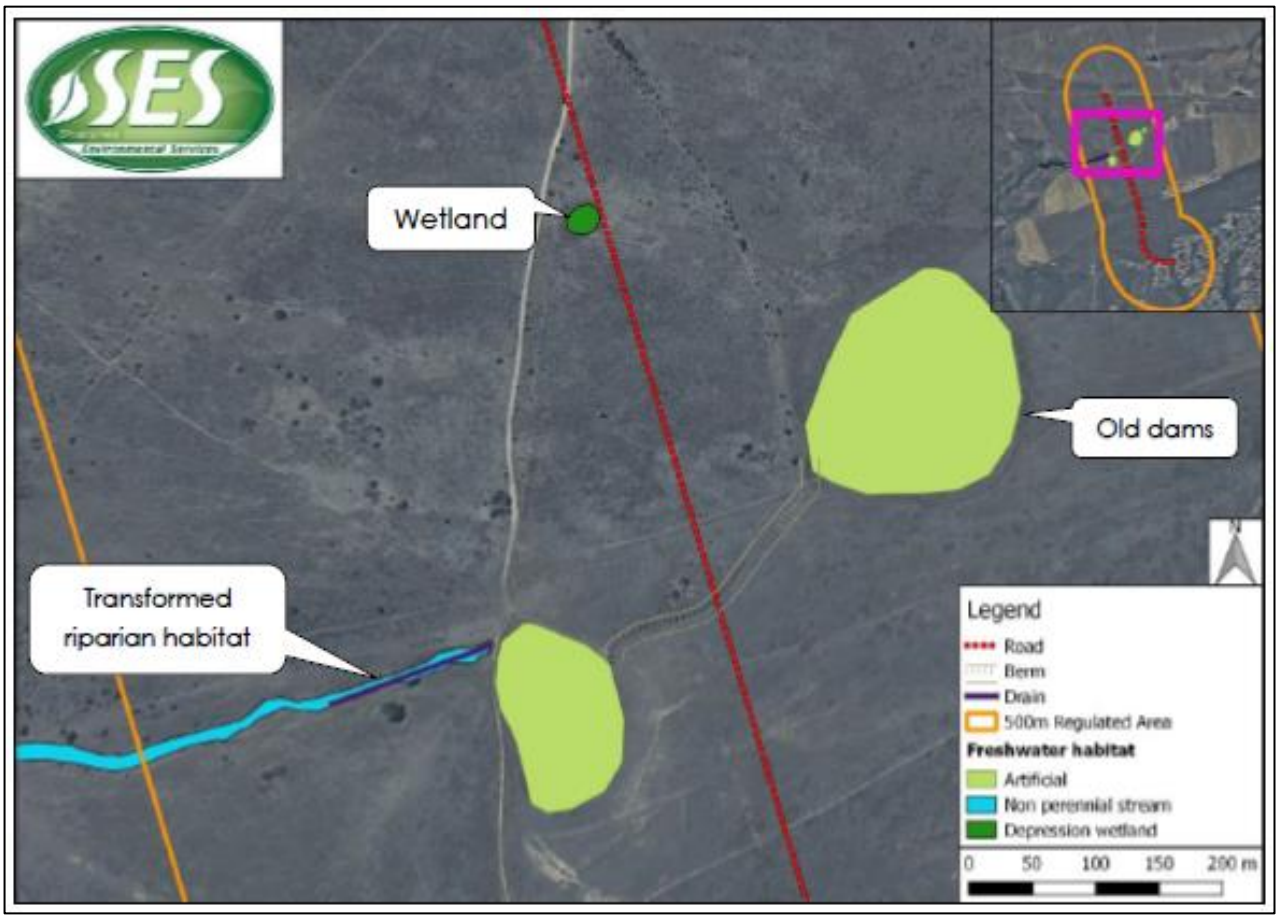


Figure 11: Map of the identified wetland in relation to the proposed road route and surrounding landscape

The depressions located within 500m of on either side of the proposed road are artificial in nature. These are past excavations dug for livestock drinking water and potentially irrigation water. The depressions dam local rainfall and surface runoff. It is likely that these areas were connected to the nearby drainage lines, and were seepage areas, but have become disconnected by the small impoundments. The stream to the west has also been straightened and drained directly downslope of the one dam. Therefore, as these depressions are artificial dams and no longer connected to the drainage network, they were not assessed in further detail. The impact of this transformation is rather included within the assessment of the riparian area that the flow may have naturally entered downslope.

There is however one very small depression on site that does contain wetland habitat. It is located along the proposed road route.

The depression can be defined as a wetland as it has intermittently saturated soils, lies within a circular area of low relief, and it has saturated hydric soils within 50cm of the land surface (Figure 12). However, there is no wetland plant indicator species and the depression is isolated within the landscape. There are some rocks within the depression which are most probably placed here in the past by a farmer. There is a high density of burrows within the circular depression and the grass is shorter (potentially grazed by small mammals).

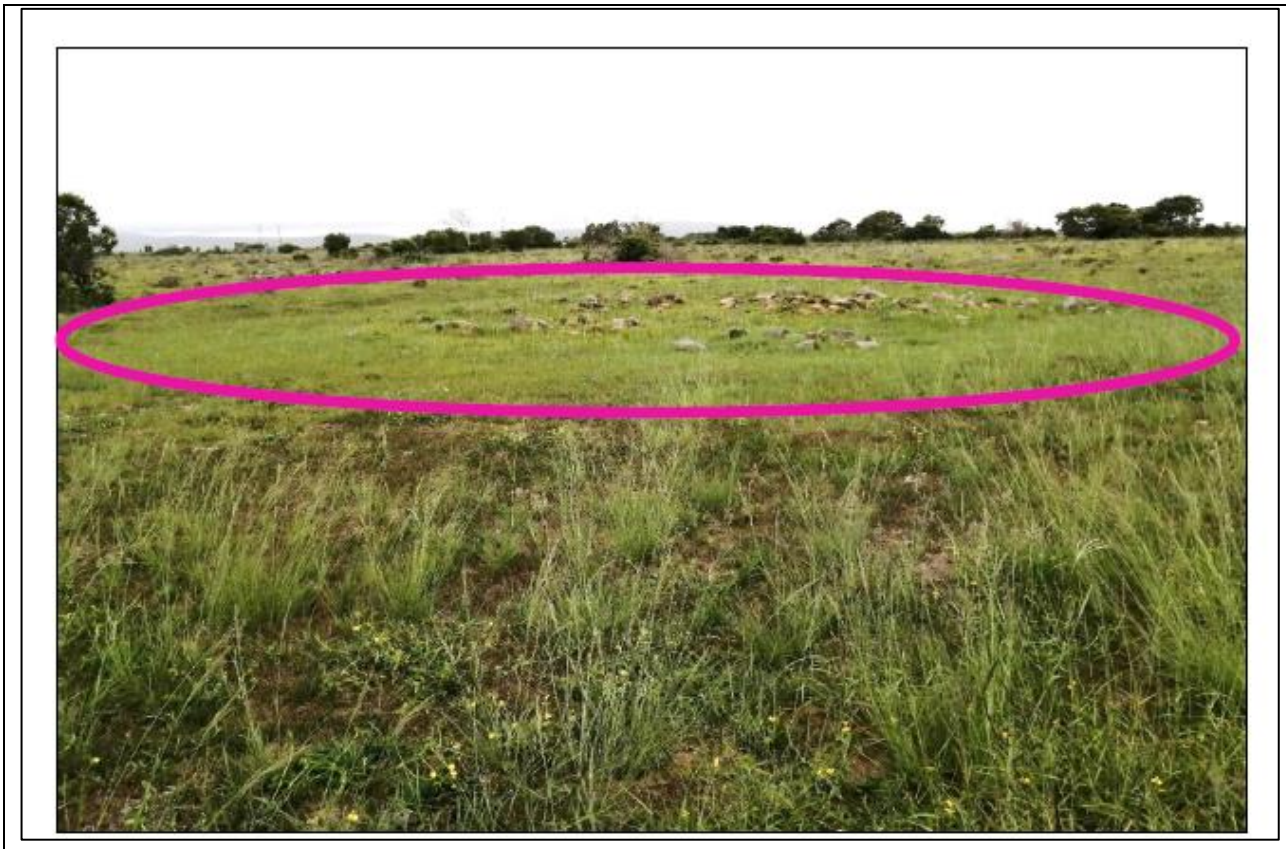


Figure 12: Photograph of the depression (circled by the pink polygon) showing the rocks and shorter grass

It is unclear as to how this wetland habitat originated as it could be a result of natural processes or human disturbance. There is a high likelihood that it is a dissolution depression formed on the calcrete rocks of this area. They are formed due to subsidence as the underlying calcareous rocks are dissolved. The limestone geology of sites within the region has resulted in similar systems nearby (although most have been lost to agricultural land uses). In some cases, they may be lined with clay, effectively sealing the base of the wetland to groundwater losses. Geochemical depression wetlands are particularly vulnerable to changes in catchment hydrology (e.g., increased run-off, reduced infiltration) as saturation is often fundamental to the geochemical processes required for their formation (Grenfell et al. 2019).

If the depression wetland is a naturally occurring feature, then it has not have deviated significantly from the estimated reference condition. The PES was determined to be within the 'B' ecological category indicating that the wetland is in a near natural state (Table 4). It has a low to moderate level of ecological importance and sensitivity as it seems to provide refuge for local biota on the coastal plain. However, it has limited habitat diversity and is in a disturbed landscape and has little research potential. It lacks functional importance in the form of direct services to society and provides limited indirect ecological benefits. It is recommended that the wetland be avoided by the road to prevent any habitat loss and to maintain the system in its current state. However, the loss of the habitat will not result in any irreplaceable ecosystem functions.

3. Coastal Environment

3.1.	Was a specialist study conducted?	~~YES~~	**NO**
3.2.	Provide the name and/or company who conducted the specialist study.		
3.3.	Explain how the relevant considerations of Section 63 of the ICMA were taken into account and explain how this influenced your proposed development.		

3.4.	Explain how estuary management plans (if applicable) has influenced the proposed development.
3.5.	Explain how the modelled coastal risk zones, the coastal protection zone, littoral active zone and estuarine functional zones, have influenced the proposed development.

4. Biodiversity

4.1.	Were specialist studies conducted?	**YES**	~~NO~~
4.2.	Provide the name and/or company who conducted the specialist studies.		

Mark Berry Environmental Consultants – Botanical Assessment

Chepri (Pty) Ltd – Fauna Compliance statement

Jonathan Colville - Terrestrial Ecologist & Faunal Surveys with Callan Cohen - Birding Africa - Terrestrial Animal (Invertebrate) Species Impact Assessment

4.3.	Explain which systematic conservation planning and other biodiversity informants such as vegetation maps, NFEPA, NSBA etc. have been used and how has this influenced your proposed development.

Please refer to Figure 11, as seen from the CBA map, the placement of the proposed has been highly influenced by the sensitive features in the vicinity of the proposed route. The route has been strategically placed to avoid (as much as possible) CBA's (both aquatic and terrestrial).

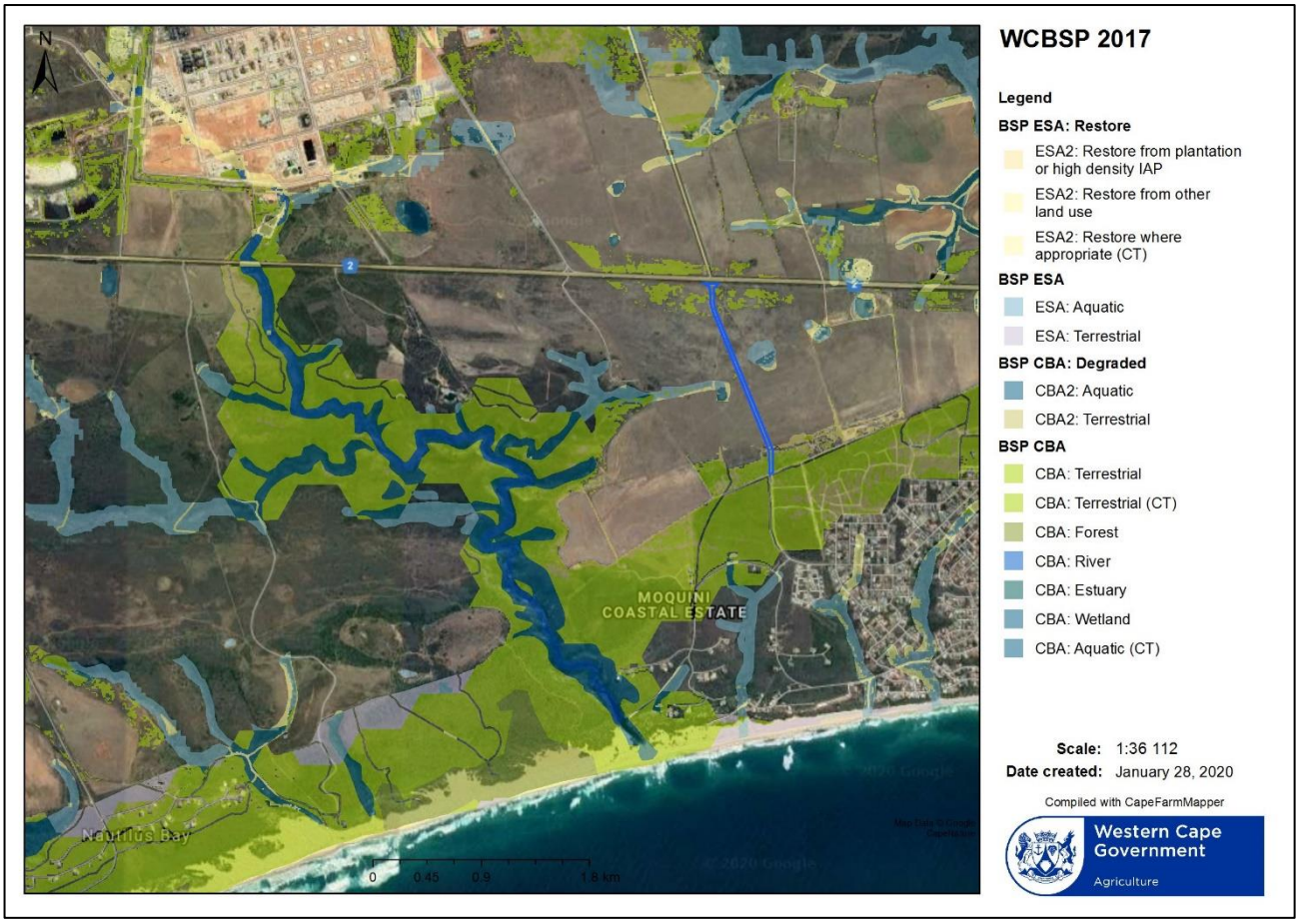


Figure 13: WCBSP 2017

4.4.	Explain how the objectives and management guidelines of the Biodiversity Spatial Plan have been used and how has this influenced your proposed development.

Dana Bay is surrounded by CBA areas which link the corridors found on the east and west of the area to one another, as such and in order to increase the emergency safety of the area, some loss of CBA will occur. Therefore, in terms of the WCBSP, 2017 guidelines for CBA's:

Ideally, development should be avoided in these areas: a western access road must be constructed for emergency safety reasons; therefore the construction of an access road cannot be avoided.

If they cannot be avoided it must be shown that the mitigation hierarchy has been applied: the impact cannot be avoided, therefore the impact will be minimised by placing the access route in such a location to still serve its emergency purpose and at the same time minimise the potential detrimental impacts to the environment. Therefore, Flora Road was selected as it is the western most point of Dana Bay, Flora Road already has a disturbed section through the green belt separating Dana Bay from the agricultural activities located north of Dana Bay, therefore minimising the impact through that sensitive section. The route avoids the undisturbed vegetation and watercourse located further west of the proposed route. The proposed junction with the N2 is to comply with the relevant roads' infrastructure regulations. In addition, the preferred Alternative A proposes a gated gravel road for times of emergency, further minimising negative impacts on the environment and resources.

4.5.	Explain what impact the proposed development will have on the site specific features and/or function of the Biodiversity Spatial Plan category and how has this influenced the proposed development.

The proposed Alternative B will cut the existing property in half, limiting livestock movements. This concern has however been raised by the landowner in the initial project meeting however he has also indicated that he will be content with some form of livestock cross, such as a cattle creep. The Alternative A will however not have this effect on the property as the livestock will be able to move freely across the road as there will be no daily traffic due to the locked gates proposed at either end and gates will be placed in such a way that the cattle can cross the gravel road as needed.

According to the Biodiversity Survey; "The proposed access road passes through two CBA's. The southern section forms part of an important biodiversity corridor that runs in an east-west direction past the northern side of Dana Bay. Apart from providing a backbone to the local biodiversity network, the latter corridor serves as an important passage along which fauna can migrate between the vegetation remnants. With the proposed road running through the CBA corridor one can expect an impact on its functionality. This impact can unfortunately not be avoided by means of rerouting the road. Being an emergency road, there will not be a regular flow of traffic through the area which should lessen the impact on the network considerably.

As an operational phase maintenance concern, keep the road reserve clear of invasive aliens, such as rooikrans, port jackson and prickly pear. The former adds to the fuel load and may increase the risk of wildfires in the long term. As stated earlier, it is a legal requirement for the landowner(s) to clear/control the invasive aliens on their land."

Conservation Context

Being located on the Southern Cape coastal plain in close proximity to the coast, the site occurs in a typical coastal fynbos/thicket environment. This is confirmed by the presence of fynbos species, such as Erica versicolor, Leucospermum praecox, Protea lanceolata and several restio species, as well as thicket species, such as Putterlickia pyracantha, Diospyros dichrophylla, Pterocelastrus tricuspidatus and Lauridia tetragona. According to the 2012 SA Vegetation Map, the southern part of the site has been mapped as Canca Limestone Fynbos and the northern part as North Langeberg Sandstone Fynbos.

Groot Brak Dune Strandveld (along the coast), Albertinia Sand Fynbos and Central Coastal Shale Band Vegetation are also present in the larger area.

Canca Limestone Fynbos stretches across the Southern Cape lowlands from Witsand (Cape Infanta) in the west to the Mossel Bay area in the east, while North Langeberg Sandstone Fynbos is associated with the northern slopes of the Langeberg, as well as the Aasvoëlberg hills from Albertinia to Mossel Bay (Mucina, 2006). Groot Brak Dune Strandveld stretches from the Gouritz mouth in the west to Victoria Bay in the east (Mucina, 2006). The latter, which is easy to spot with its impenetrable, thorny thicket structure, occurs in more sheltered areas along the coast and along drainage lines. Albertinia Sand Fynbos is associated with deeper sand habitats commonly found on the Albertinia flats.

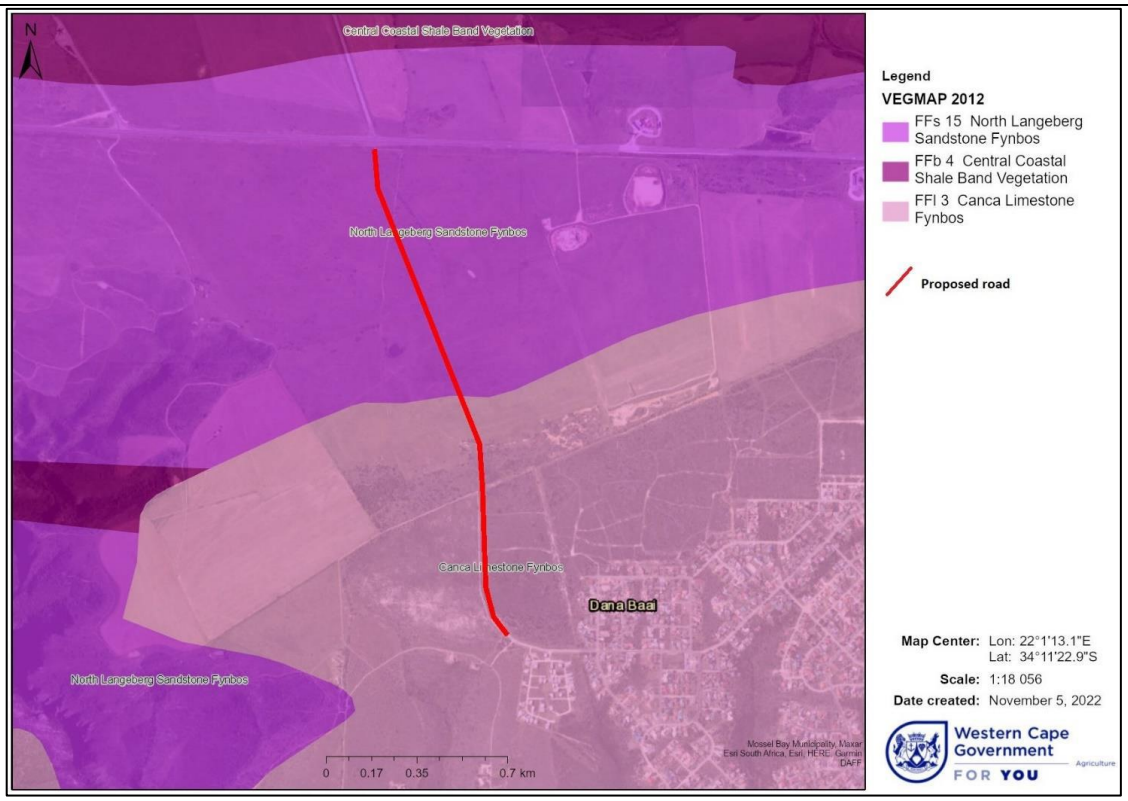


Figure 14: National Vegetation Map

During the site survey it was found that the vegetation in the southern part of the site comprises fynbos with a strong thicket influence in a few places. The latter could be the result of senescence. With regards to vegetation type, it leans more towards Albertinia Sand Fynbos, with Erica versicolor, Leucospermum praecox, Bobartia robusta and Thamnochortus insignis important taxa in the latter type. However, there is also an affinity with Canca Limestone Fynbos and North Langeberg Sandstone Fynbos, with Protea lanceolata an important taxon in the former, and Erica versicolor and Leucadendron salignum important in the latter. Carissa bispinosa, Diospyros dichrophylla, Putterlickia pyracantha, Pterocelastrus tricuspidatus, Gymnosporia buxifolia and Lauridia tetragona are important Groot Brak Dune Strandveld taxa.

Being well represented in the larger area, Canca Limestone Fynbos is currently not considered a threatened vegetation type. However, agricultural activities, alien plant infestation and coastal developments remain major threats for certain species restricted to this vegetation type. About 81% of Canca Limestone Fynbos remains (Skowno, 2019). However, due to its poor conservation status its protection in the coastal areas should remain a priority. Less than 1% is formally conserved in the Pauline Bohnen and Geelkrans Nature Reserves (Mucina, 2006). Albertinia Sand Fynbos, on the other hand, is listed as Vulnerable (DEA, 2011). About 55% of it is still left (Skowno, 2019), while only 5% is formally protected in the De Hoop, Pauline Bohnen, Geelkrans, Kleinjongensfontein, Blomboschfontein and Skulpiesbaai Nature Reserves (DEA, 2011). North Langeberg Sandstone Fynbos is not listed as threatened. About 92% of it remains, while 13% is formally conserved in the Boosmansbos Wilderness Area and an additional 45% in mountain catchment areas (Mucina, 2006).

The proposed access road runs through two areas mapped as terrestrial critical biodiversity areas (CBA's). The southern portion forms part of a biodiversity corridor that runs in an east-west direction past the northern side of Dana Bay. Apart from providing a backbone to the local biodiversity network, the latter corridor serves as an important passage along which fauna can migrate between the vegetation remnants. It is unclear what the rationale is behind the patchy CBA at the northern end of the route next to the N2. On the ground there does not seem to be any difference between the CBA patches and the areas in between, mapped as 'other natural areas'.

There are no formally protected areas within a 20 km radius of the site, only a few private game reserves. Reasons for the importance of the above-mentioned CBA's include the presence of SA vegetation types (Canca Limestone Fynbos and North Langeberg Sandstone Fynbos), a critically

endangered vegetation variant (Petrosa Fynbos-Renosterveld), threatened vertebrate habitat (bontebok) and a few wetland types.

CBA's are defined as areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure (Pool-Stanvliet, 2017). These sites are selected for meeting national targets for species, habitats and ecological processes (Pool-Stanvliet, 2017). Many of these areas support known occurrences of threatened plant species, and/or may be essential elements of designated ecological corridors. Loss of designated CBA's is therefore not recommended. With the proposed road running through the CBA corridor one can expect some impact on its functionality.

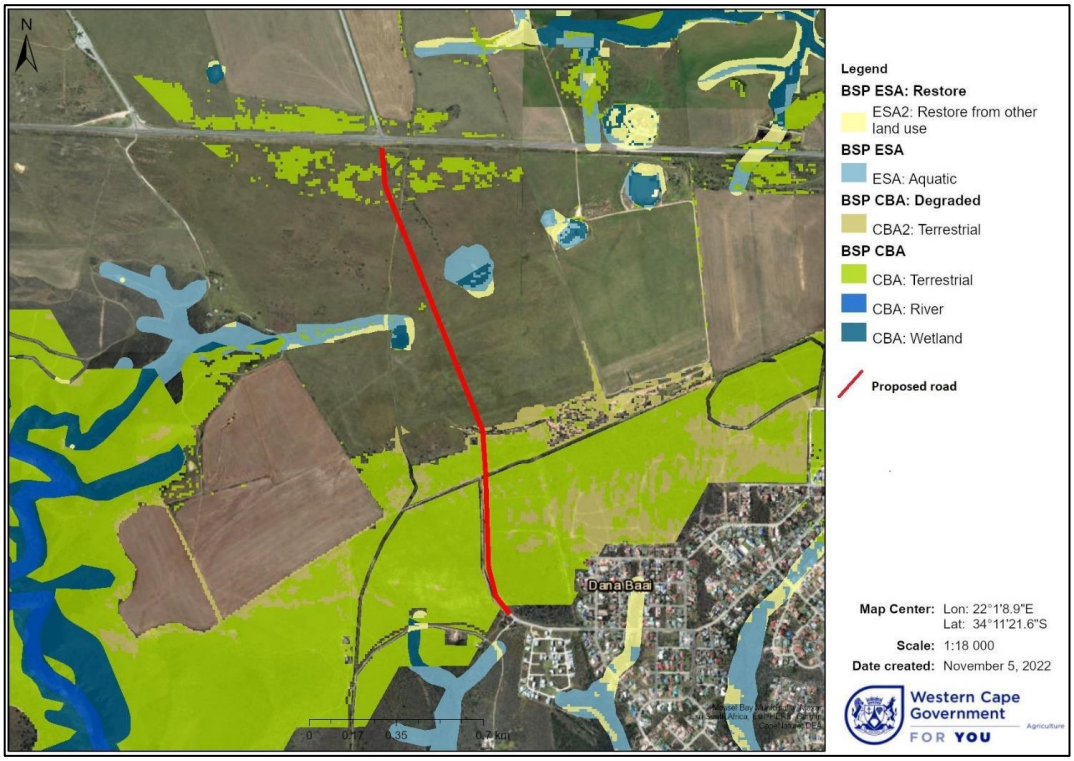


Figure 15: CBAs

Site Vegetation

The vegetation at the southern end of proposed route, especially along the road reserve, comprises a fynbos type that shows a strong affinity with Albertinia Sand Fynbos. There is also a bit of influence from Groot Brak Dune Strandveld and Canca Limestone Fynbos. Structurally, it can be described as a low to mid-high (0.5-2 m) closed shrubland following Campbell's classification (Campbell, 1981). It is low (<1 m) along the road reserve and somewhat taller (1-2 m) in the strip between the road reserve and pasture. Dominant species include Helichrysum patulum, Osteospermum moniliferum, Searsia lucida and Passerina corymbosa. The fynbos along the road reserve is generally of a good quality. The presence of a two-track dirt road, some Acacia cyclops (rooikrans) and a few disturbed patches do not detract from its value or quality.

The strip of vegetation between the road reserve and pasture shows clear signs of disturbance by cattle grazing and alien infestation, notably A. cyclops and some Opuntia ficus-indica (prickly pear). It was also noted to be senescent (very woody) and in need of a fire. Fire is an important trigger for germination in fynbos and it can also be used in an integrated manner to control invasive aliens.

The history of the old (fallow) land is not clear, but a fair bulb population was noted here, notably Albuca cf. acuminata, Ornithogalum dubium, Drimia capensis, Haemanthus coccineus, Crossyne guttata and Boophone disticha. The shrub component (<0.4 m high) comprises a few scattered Elytropappus rhinocerotis (renosterbos), Metalasia acuta, Athanasia quinquedentata, Delosperma neethlingiae, Lampranthus elegans, Muraltia ericoides and Crassula nudicaulis. It shows some

potential to revert back to the original vegetation (presumable North Langeberg Sandstone Fynbos), but only if further farming activities in the area are ceased. The pasture is significantly degraded or devoid of indigenous vegetation. It is currently used for grazing purposes. Figure 16 shows the vegetation attributes of the site.

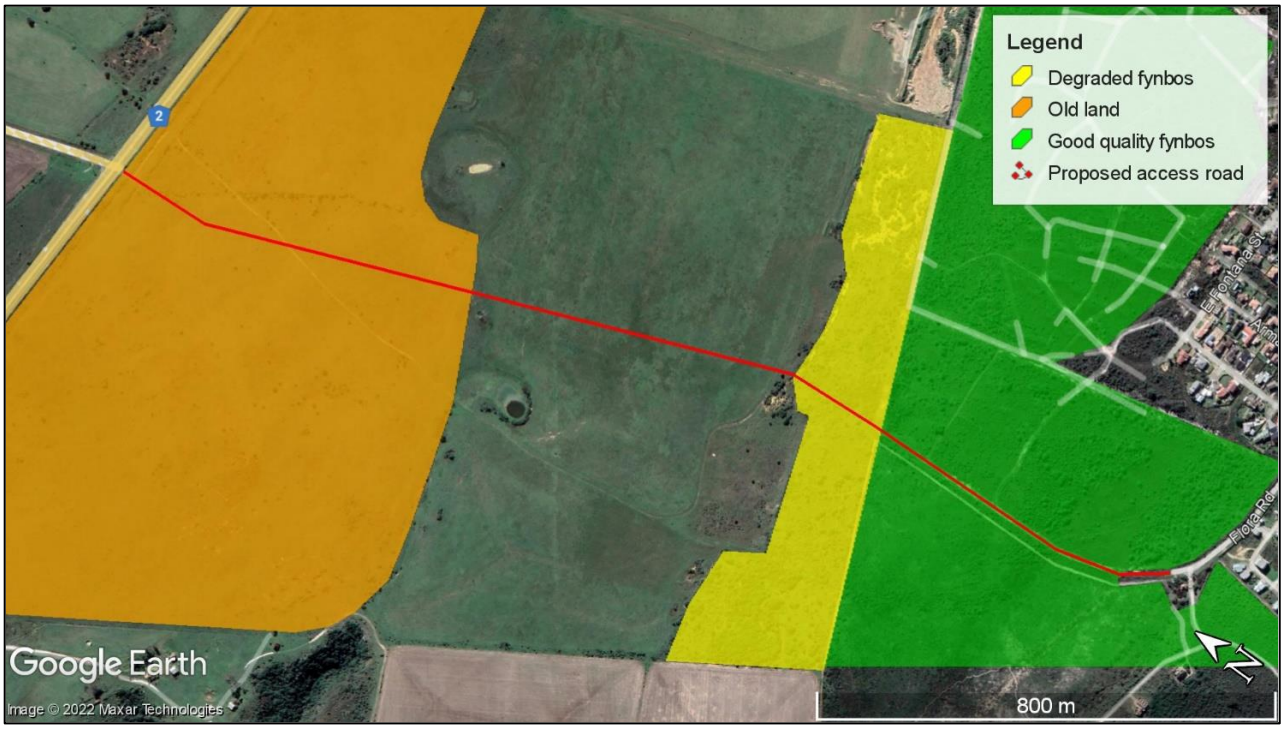


Figure 16: Vegetation attributes of the site. The untoned area(s) are devoid of significant vegetation

Plant Species

Shrub species recorded along the road reserve include Protea lanceolata, P. repens, Leucospermum praecox, Leucadendron salignum, Erica versicolor, Osteospermum moniliferum, Tarchonanthus littoralis, Metalasia densa, M. acuta, M. brevifolia, Seriphium plumosum, Helichrysum patulum, H. teretifolium, H. rugulosum, H. cymosum, Senecio ilicifolius, Osteospermum imbricatum, Cullumia carlinoides, Berkheya carlinoides, Ursinia anthemoides, U. discolor, Chrysocoma ciliata, Aspalathus crassisepala, A. quinquefolia, Searsia lucida, S. glauca, Diospyros dichrophylla, Carpobrotus edulis, C. muirii, C. acinaciformis, Crassula subulata, Passerina corymbosa, Gnidia chrysophylla, G. squarrosa, Struthiola striata, Agathosma apiculata, A. imbricata, Euchaetis burchellii, Muraltia cf. ericoides, G. Gymnosporia buxifolia, Lauridia tetragona, Pterocelastrus tricuspidatus, Euclea crispa, Pittosporum viridiflorum, Grewia occidentalis, Carissa bispinosa, Hermannia salviifolia, H. lavandulifolia, Trichocephalus stipularis, Cliffortia stricta, Anthospermum aethiopicum, Leonotis ocymifolia, Pelargonium capitatum, P. fruticosum, P. betulinum, Chironia baccifera, Asparagus rubicundus, Lobelia tomentosa and Rhoicissus digitata. Restios and geophytes recorded here include Thamnochortus muirii, T. insignis, Elegia stipularis, Staberoha distachyos, Restio triticeus, Mastersiella spathulata, Drimia capensis, Aristea africana and Bobartia robusta.

Additional shrub species recorded (inside the fynbos strip north of the road reserve and on old land) include Elytropappus rhinocerotis, Athanasia quinquedentata, Felicia aethiopica, Berkheya rigida, Gerbera tomentosa, Indigofera nigromontana, Rhynchosia caribaea, Searsia rosmarinifolia, Delosperma inconspicuum, Ruschia tenella, Delosperma neethlingiae, Lampranthus elegans, Crassula nudicaulis, Aloe maculata, Gnidia nodiflora, Asparagus aethiopicus, Hermannia flammula, Salvia africana-lutea, Phylica cf. imberbis, Solanum rigescens, Wahlenbergia desmantha, Putterlickia pyracantha and Cynanchum obtusifolium. Grasses and extra bulbs recorded inside fynbos strip and on old land include Eragrostis curvula, Albuca juncifolia, A. cf. acuminata, Ornithogalum dubium, Haemanthus coccineus, Crossyne guttata, Boophone disticha and Moraea bulbillifera.

Most of the recorded species are widespread and fairly common in the Mossel Bay area. Leucospermum praecox (VU), Cullumia carlinoides (NT), Carpobrotus muirii (NT), Gnidia chrysophylla (NT), Hermannia lavandulifolia (VU) and Thamnochortus muirii (VU) are listed SCC. Other regional endemics recorded on site include Protea lanceolata and Bobartia robusta. A few Pittosporum viridiflorum trees, a protected tree species in terms of the National Forests Act (Act 84 of 1998), were recorded in the fynbos in close proximity to the proposed road. No milkwoods (Sideroxylon inerme), another protected tree species common in the area, were recorded. The removal of these trees requires a permit from the Department of Forestry.

Only a few woody and succulent exotic species were recorded, namely Acacia cyclops (rooikrans, category 1b), A. saligna (port jackson, 1b) and Opuntia ficus-indica (prickly pear, 1b). As indicated above, all three species are Category 1b invaders. In terms of the National Environmental Management: Biodiversity Act (NEMBA) (Act 10 of 2004) Alien and Invasive Species List (2016), category 1b invasive species require compulsory control as part of an invasive species control programme.

Figure 17: Recorded SSC and protected tree species.

The impact on plant species, especially SCC and protected species, is also of some concern and needs to be managed during the construction phase. Most of the recorded species are widespread and fairly common in the Mossel Bay area. Six SCC were recorded, including three which are listed as Vulnerable, namely Leucospermum praecox, Hermannia lavandulifolia and Thamnochortus muirii. Fortunately, they are still frequently encountered in similar habitats in the Mossel Bay area. Literary, hundreds of L. praecox are present on the large undeveloped property directly north of Dana Bay. With regards to protected tree species, three Pittosporum viridiflorum trees were recorded in the fynbos close to the proposed road. They can potentially be avoided during the construction phase. If not, a permit will be needed for their removal.

Search and rescue

Due to a considerable presence of bulbs in the fallow land portion, it recommended that the affected bulbs be searched and rescued and replanted in the adjacent fallow land area. Search

and rescue should be done at an appropriate time of the year, preferably when the soil is wet during the raining season(s). Ideally, bulbs should be salvaged during leaf fall, but before or after flowering.

The probability of SCC listed in the Screening Report to occur in the vicinity of the site is indicated in Table 1. Given their habitat preferences, five species have a medium or higher probability to occur on the property. Those with a lesser probability to occur here have not been recorded in Mossel Bay or were recorded in different habitats or vegetation types.

Table 1: Threatened plant species as listed in the Screening Report.

Sensitivity	Feature(s)	Probability of occurring on site
Medium	*Lampranthus ceriseus*	Low
Medium	*Lampranthus diutinus*	Low
Medium	*Lampranthus fergusoniae*	Low
Medium	*Lampranthus pauciflorus*	Low
Medium	*Ruschia leptocalyx*	Low
Medium	*Argyrolobium harmsianum*	Low
Medium	*Aspalathus campestris*	Low-medium
Medium	*Aspalathus obtusifolia*	Low-medium
Medium	*Lebeckia gracilis*	Low-medium
Medium	*Leucadendron galpinii*	Low
Medium	*Leucospermum muirii*	Low
Medium	*Leucospermum praecox*	Recorded on site
Medium	*Wahlenbergia polyantha*	Low-medium
Medium	*Selago glandulosa*	Low-medium
Medium	*Selago villicaulis*	Low-medium
Medium	*Erica unicolor* ssp. *mutica*	Low
Medium	*Hermannia lavandulifolia*	Recorded on site
Medium	Sensitive species 153	Low-medium
Medium	Sensitive species 268	Low
Medium	*Thamnochortus muirii*	Recorded on site
Medium	Sensitive species 1024	Low-medium
Medium	*Athanasia cochlearifolia*	Low-medium
Medium	*Agathosma eriantha*	Low-medium
Medium	*Agathosma muirii*	Low
Medium	*Agathosma riversdalensis*	Low
Medium	*Euchaetis albertiniana*	Medium
Medium	*Muraltia cliffortiifolia*	Low
Medium	*Muraltia knysnaensis*	Low
Medium	*Polygala pubiflora*	High
Medium	*Nanobubon hypogaeum*	Low-medium
Medium	*Sensitive species 516*	Low
Medium	*Drosanthemum lavisii*	Low
Medium	*Sensitive species 800*	Low-medium
Medium	*Sensitive species 500*	Low-medium
Medium	*Sensitive species 654*	Low-medium
Medium	*Agathosma microcarpa*	Low

Botanical Assessment Mitigation Measures

The following mitigation measures are required to ensure that the impact on terrestrial biodiversity and plant species is minimised:

- During the construction phase, demarcate/fence off the development footprint. Restrict all construction activities, such as stockpiling and parking, to already disturbed areas away from natural vegetation. The contractor(s) must be made aware of the sensitive surroundings. The fynbos and old land areas outside the road footprint must be declared a 'no-go' area and not be disturbed in any way.

- Remove topsoil and/or seedbearing plant material from fynbos and old land areas to be disturbed for use in the rehabilitation of disturbed areas after construction.

- The contractor(s) must be made aware of the presence of SCC and protected tree (Pittosporum viridiflorum) species. Removal of the latter requires a permit from the Department of Forestry in terms of the National Forests Act.

- During the staking out of the construction footprint take cognisance of the presence of recorded SCC and protected trees. Try and avoid these as far as practically possible. It is recommended that a botanist be involved during this process.

- Search and rescue bulbs from the construction footprint for replanting in the adjacent areas or rehabilitation of disturbed areas after construction. Topsoil, cuttings and seedbearing plant material can also be salved for this purpose, especially cuttings from Carpobrotus and Pelargonium species. Bulbs should be removed along with some soil, placed in gel, bagged and then taken to a nursery for temporary storage or transplanted directly in the receiving area.

- Engage in alien clearing, focussing on invasive species such as rooikrans, port jackson and prickly pear. In terms of the NEMBA (Act 10 of 2004) Alien and Invasive Species List (2016), these species are category 1b invaders that require compulsory control as part of an invasive species control programme. This will become a long-term maintenance requirement. One-year old seedlings can be hand-pulled, preferably when soil is wet after a rainfall. If left to grow, removal becomes more difficult and costly. The use of heavy plant, such as bush cutters or D9 Caterpillar, for alien clearing is not recommended. Port jackson stumps must also be treated with herbicides to prevent coppicing.

- Allow 24 months for the monitoring of rehabilitation success and alien infestation post construction. In this regard, a rehabilitation plan should be compiled and submitted before the start of construction work. This plan will also detail the search and rescue of plants, which are to be used for rehabilitation process.

4.6.	If your proposed development is located in a protected area, explain how the proposed development is in line with the protected area management plan.

Not Applicable

4.7.	Explain how the presence of fauna on and adjacent to the proposed development has influenced your proposed development.

The screening tool report recommended a fauna assessment and as such Chepri (Pty) Ltd was appointed to undertake the fauna Compliance statement.

The report indicates that:

The one mammal SCC, Species 5, that was identified by the Screening Tool was not found in the site, understandably, considering that the site's habitat is not favourable for this species. The areas surrounding the site, especially on the southern portion's eastern and western borders, supports habitat that seems fairly intact. It is therefore possible that the site area forms part of a functional corridor for animal species.

The site is potentially marginal hunting habitat for the African Marsh Harrier (C. ranivorus), outlined by the screening tool as Medium sensitivity, and one individual was observed on the site. The other three listed sensitive bird species, all listed as High sensitivity, Denham's Bustard (N. denhami) Knysna Warbler (B. sylvaticus) and Knysna Woodpecker (C. notata), were not observed on the site even though the habitat could potentially support these species. The human disturbances on and around the site and the low observer records (SABAP 2) render their potential occurrence on the site as Low.

Of the invertebrates sampled and found, two belonged to the species identified by the screening tool as of medium sensitivity, namely the Brenton Copper (A. thyra orientis) which is Endangered (EN) and the Yellow-winged Agile Grasshopper (A. montanus). The habitat on the site was favourable for the requirements of the listed butterfly species, the Endangered (EN) Brenton Blue (L. littoralis) and Critically Endangered (CR) Species 13, even though no individuals were observed on the site. However, considering that sampling occurred outside of these species' flight periods, in conjunction with the favourable conditions, the likely occurrence of these species is therefore considered Medium to High.

The impact of the proposed development for the sensitive mammal species identified by the Screening Tool is considered low since the likelihood of their occurrence is low. The site, especially its southern portion, seem to play a role regarding connectivity and therefore mammal movement which could be impacted by the construction of a 6 m wide road on the proposed site with fences that are not permeable to wildlife movement. The proposed road, however, will be a gravel road and only accessible for emergencies. If these conditions for the road are adhered to, after construction, the impact on mammal species is envisaged to be relatively low. Similarly, the road, under the stipulated development and use conditions, will have a low impact on the listed bird SCCs.

From an invertebrate conservation perspective, however, the development will have a high impact on the listed SCCs considering that an endangered butterfly species and vulnerable grasshopper species were found and that there is a likelihood that the other two butterfly SCCs listed, one endangered and one critically endangered, occur on the site. The high impact of the development of the road will mainly be because of the large footprint of the road with its proposed 6m width and hence as a result of vegetation (butterfly host species) removal for the construction of this road.

We therefore recommend that should the requirements for a wide road and reserve be essential, an Animal Species Environmental Impact Assessment, with specific focus on the listed invertebrate SCCs, be undertaken first before considering the proposed development. Alternatively, if the plans for the proposed development could be amended and the width of the two-track road currently existing on the southern portion of the site – with absolute minimal vegetation clearance - and additionally closed off with wildlife-permeable fencing and only used for emergencies, as proposed, then the impact is likely to be much less and would not require further study.

Figure 18: Map showing locations of Species of Conservation Concern (SCCs) found on Remainder of Portion 7, Farm 225, Dana Bay.

Figure 18: Locality of SCC observations (Figure 18 of the Animal Species Compliance Statement)

Terrestrial Animal (Invertebrate) Species Impact Assessment:

As a result of the Fauna Compliance statement's recommendations that a Terrestrial Animal Species Assessment be undertaken, Dr. Jonathan Colville was appointed to undertake the Terrestrial Animal (invertebrate) Assessment (Appendix G)

<u>According to the assessment</u>:

The access road will fall mainly (~70% of its length) over degraded old fallow land. The remaining ~30% falling along the southern areas of the project will fall over high-quality fynbos habitat. From a faunal (invertebrate) perspective, the overall impact of the proposed development along the degraded section is considered of low significance. The impact along the fynbos habitat is considered medium, but of low significance once mitigation is considered. Of higher concern for the invertebrate SCC is the presence of alien plant encroachment into the good quality fynbos habitat. The overall footprint of the access road is relatively small in relation to the potential high negative impact of continued alien plant encroachment across the high-quality fynbos habitat. Removal of these plants from the development area would have a positive impact on local invertebrate SCC populations.

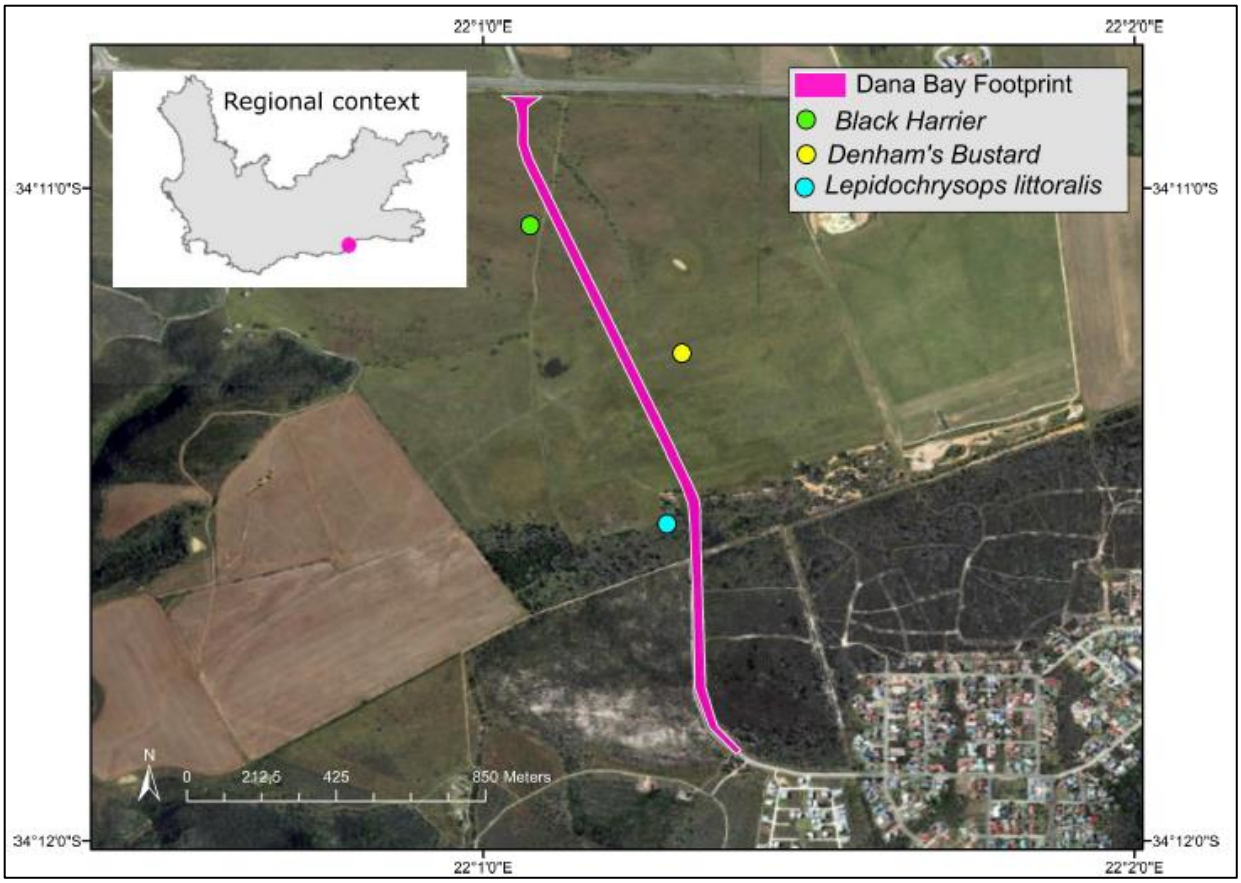


Figure 19: The proposed project development area on the remainder of portion 7 of the Farm 225, Mossel Bay, Western Cape Province. Three animal species of conservation concern, including one of the butterfly SCC flagged by the screening tool for this project, were recorded during the field site visit. (Figure 1 of the Terrestrial Animal (Invertebrate) Species Impact Assessment)

<u>Species of Conservational Concern</u>

- The only invertebrate SCC listed by the screen tool for this project located during the site visit was the butterfly SCC *Lepidochrysops littoralis*; a female was collected approximately 50m from the proposed road. This record confirms that potentially two of the butterfly SCC flagged by the screening tool for this project occur within the project area (see faunal assessment report by chepri (Pty) Ltd (2022)).
- Several other butterfly species were also observed at the project area:
    - *Zizeeria knysna knysna* (African Grass Blue)

- *Capys alphaeus alphaeus* (Protea Scarlet)
- *Vanessa cardui* (Painted Lady)
- *Pseudonympha magus* (Silver-bottom Brown)
- Cassionympha detecta (Cape Dull Brown)
- Colias electo electo (African Clouded Yellow)

- Denham's Bustard (*Neotis denhami),* a bird SCC flagged by the screening tool for this project, was also recorded in the fallow fields close to the northern parts of the project area, with two individuals flushed
- A Black Harrier (*Circus maurus*), another bird species of high conservation concern, although not flagged by the screening tool for this project, was also recorded near the northern section of the project area

Construction Phase Impacts

Relatively small areas of invertebrate SCC habitat (natural vegetation) will be negatively affected during the construction phase. The 'No-Go' or 'leave as is' option would potentially see the high-quality fynbos habitat of the project area becoming overgrown with invasive alien trees if no alien plant management plan is earmarked for future implementation. The encroachment of alien plants would have significant long-term negative impacts and implications for the invertebrate SCC. The mitigation measure of removal and future monitoring of these alien plants would solve this issue.

Operation Phase Impacts

Considering that the access road will only be used in an emergency and that access will be controlled through locked gates, the impact significance during the operational phase of the proposed access road development is considered low. It should only have a very small and localised impact on populations of invertebrate SCCs and not affect their long-term viability and persistence in the area. Continued monitoring and removal of alien plants would, however, be a key mitigation measure to be implemented after the construction phase.

Cumulative Impacts

Although the development is considered of low significance for the four invertebrate SCC, it may become more significant if added to existing or future impacts from other activities in the area. Habitat loss in the south coastal areas of the Western Cape Province is considered the main threat faced by the three butterfly SCC flagged for this project. The proposed development will occur in a broader area within a mosaic of vegetation and habitat that is highly fragmented and disturbed through coastal development and agriculture, and alien plant infestations.

Currently, it seems unlikely that the addition of the proposed access road will contribute to a cumulative negative impact on the long-term viability of any of the populations of the SCC and their persistence. Mitigation measures would help to further reduced any cumulative negative impacts, particularly in terms of alien plant removal and monitoring. In this regard, removal and monitoring of alien plants would potentially have a larger long-term positive impact offsetting any smaller short-term negative impacts from the access road development.

Impact Statement

The proposed access road development is unlikely to generate significant negative impacts on any of the invertebrate SCC flagged for this project once mitigation is followed. It is the specialist's opinion that the proposed development will have an overall low significance on the four invertebrate SCC and therefore the proposed development can be approved in terms of the specific theme of this terrestrial animal species assessment.

5. Geographical Aspects

Explain whether any geographical aspects will be affected and how has this influenced the proposed activity or development.
The entire site is zoned for agriculture and has been used as such for many years, as such the entire site has been ploughed (rock stockpiles noted on site) and is currently used for grazing. The site has been significantly modified as is evident by the unused dams and irrigation gully remnants which have resulted in unnatural topographical features on site.

6. Heritage Resources

6.1.	Was a specialist study conducted?	**No, see HWC comment.** **Specialist input was requested as explained below**
6.2.	Provide the name and/or company who conducted the specialist study.	
Jonathan Kaplan, Agency for Cultural Resource Management		
6.3.	Explain how areas that contain sensitive heritage resources have influenced the proposed development.	
Heritage Western Cape indicated in their response to a HWC NID for the proposal that no further studies are required, however there are some rocks placed near a sandstone outcrop which may be rock stock piles from agricultural activities or may be historic graves. The specialists was appointed to conduct a site visit to confirm whether the rocks are graves or a rock stockpile, the specialist confirmed that the rocks on site are a stockpile and not graves. Please refer to Appendix E1 for the Heritage Specialist's Statement on the matter.		

7. Historical and Cultural Aspects

Explain whether there are any culturally or historically significant elements as defined in Section 2 of the NHRA that will be affected and how has this influenced the proposed development.
No culturally or historically significant elements on the site as confirmed by Heritage Western Cape.

8. Socio/Economic Aspects

8.1.	Describe the existing social and economic characteristics of the community in the vicinity of the proposed site.
According to the Mossel Bay Municipality Fourth Generation IDP 2017 – 2022: Mossel Bay has the second largest population in the Garden Route District Municipality with a population size of 94 135 as per the 2016 Community Survey results. According to the forecasts of the Western Cape Department of Social Development, the population is expected to reach 105556 by 2023. In 2017, Mossel Bay's population gender breakdown will be relatively evenly split between male (47 720, 48,7 per cent) and female (50 261, 51.3 per cent). For 2023, the split is anticipated to 51 225 (48,5 per cent) and 54 331 (51,5 per cent) for males and females respectively. The majority of Mossel Bay's population is concentrated between the ages of 20 to 39, which is possibly reflective of an influx of young working professionals into the region (increased employment opportunities as a result of positive economic growth in the region). It is also noticeable that the population numbers in the older age categories remain relatively high in comparison to other districts. This trend can be attributed to the fact that Mossel Bay and its surrounding areas remain a popular retirement destination. The IDP also indicates that the dependency ration of Mossel Bay Municipality increased from 49.7 in 2011 to 53.4 in 2017 but is expected to stabilise at 53.3 towards 2023.	

8.2.	Explain the socio-economic value/contribution of the proposed development.
The project will provide temporary jobs for the construction teams, create capital influx for those supplying services and materials for the construction thereof, provide an emergency exit to Dana Bay Residents in the event of a fire or other emergency where the main entrance into Dana Bay becomes blocked or unusable.	
8.3.	Explain what social initiatives will be implemented by applicant to address the needs of the community and to uplift the area.
Local labour and SMME will be utilised during the construction phase as per municipal requirements.	
8.4.	Explain whether the proposed development will impact on people's health and well-being (e.g. in terms of noise, odours, visual character and sense of place etc) and how has this influenced the proposed development.
Sense of place will be affected however road networks and the safety of an additional exit from Dana Bay is essential in this case. As there are no farm building on the property there are no nearby noise receptors and therefore there will be no significant noise impacts during the construction phase for the proposal.	

SECTION H: ALTERNATIVES, METHODOLOGY AND ASSESSMENT OF ALTERNATIVES

1. Details of the alternatives identified and considered

1.1.	Property and site alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.
Provide a description of the preferred property and site alternative.	
Due to fire safety risks associated with only having one road in and out of Dana Bay, the Mossel Bay Municipality proposes to construct an emergency access road in the western reaches of Dana Bay which will essentially extend Flora Road across Remainder of the Portion 7 of the Farm 225 and junction with the N2 opposite the existing R327 junction. The road will have a locked gate at both ends and will only be utilized in emergency situations. The farm portion is currently rented out and is utilised for cattle grazing. The proposed access road will be 6m wide with a reserve of 20m. There are limitations on the site regarding the development of layout alternatives as there is an existing junction with the N2 National Road along the north boundary of the property, as such the road has to also junction at this point (SANRAL requirements). Additionally, there is a two-track road which extends flora road over Erf 14797 till it meets Remainder of Portion 7 of the Farm Rietvalley No. 225, this is the point in the southern extent of the property that the proposed road must align with. The construction of a tarred road was initially considered however due to the findings of the TIA and SANRAL's junction requirements it was deemed a non-economically alternative. If an alternative route were to be considered, it would have to avoid the western half of the property, due to the increasing slope. This means the road would then have to veer east, which would increase the impact on the fynbos vegetation by increasing the amount a vegetation removal at that location, increase the costs of the road due to the extended length of the road and use up additional agricultural land as the increased road length will result in a greater area of agricultural land being utilised. Therefore, the preferred Alternative A is the proposed Gravel Road, the initially proposed tarred road is not economically viable and there are no alternative roads layouts within the site due to the site limitations mentioned above.	

Figure 20: Road route

Figure 21: N2 junction

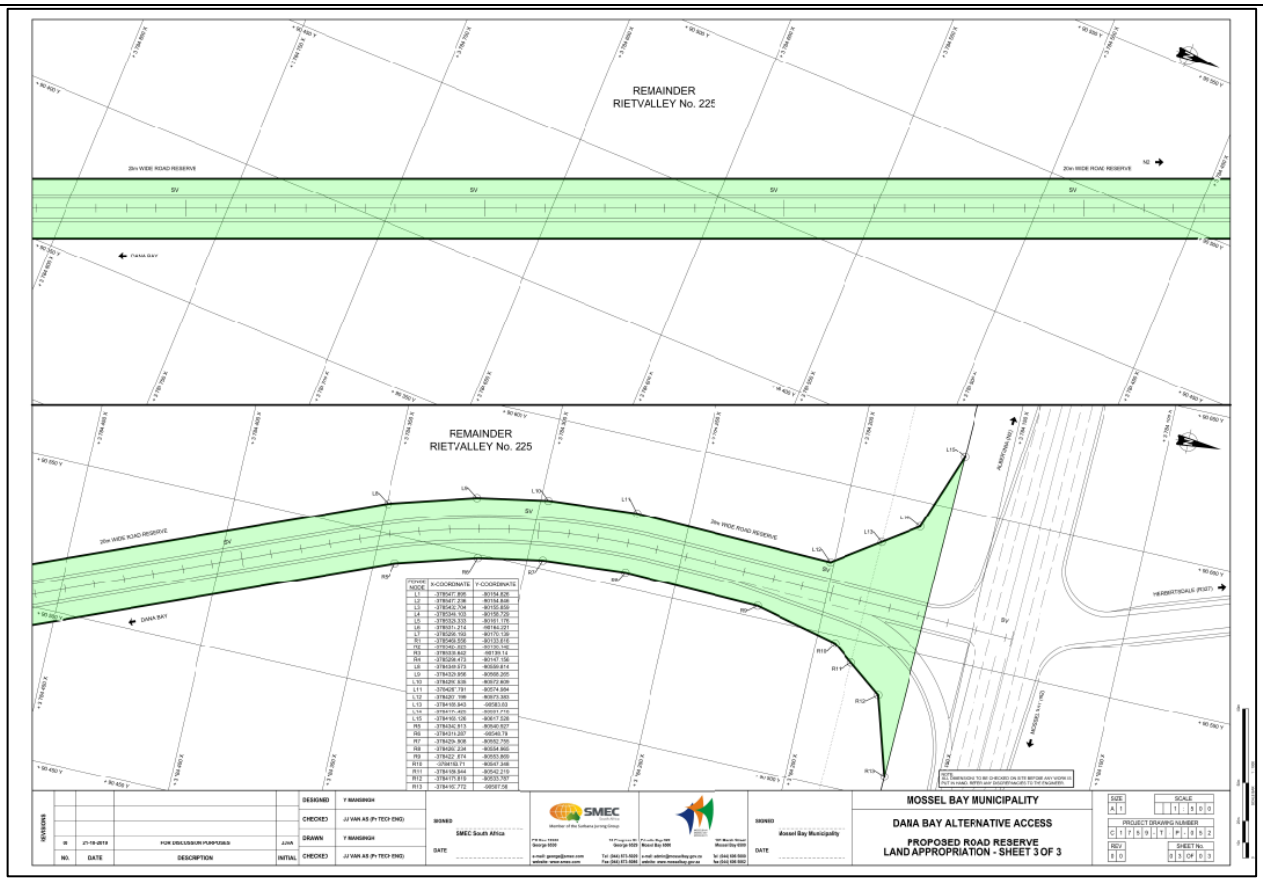


Figure 22: Proposed road reserve

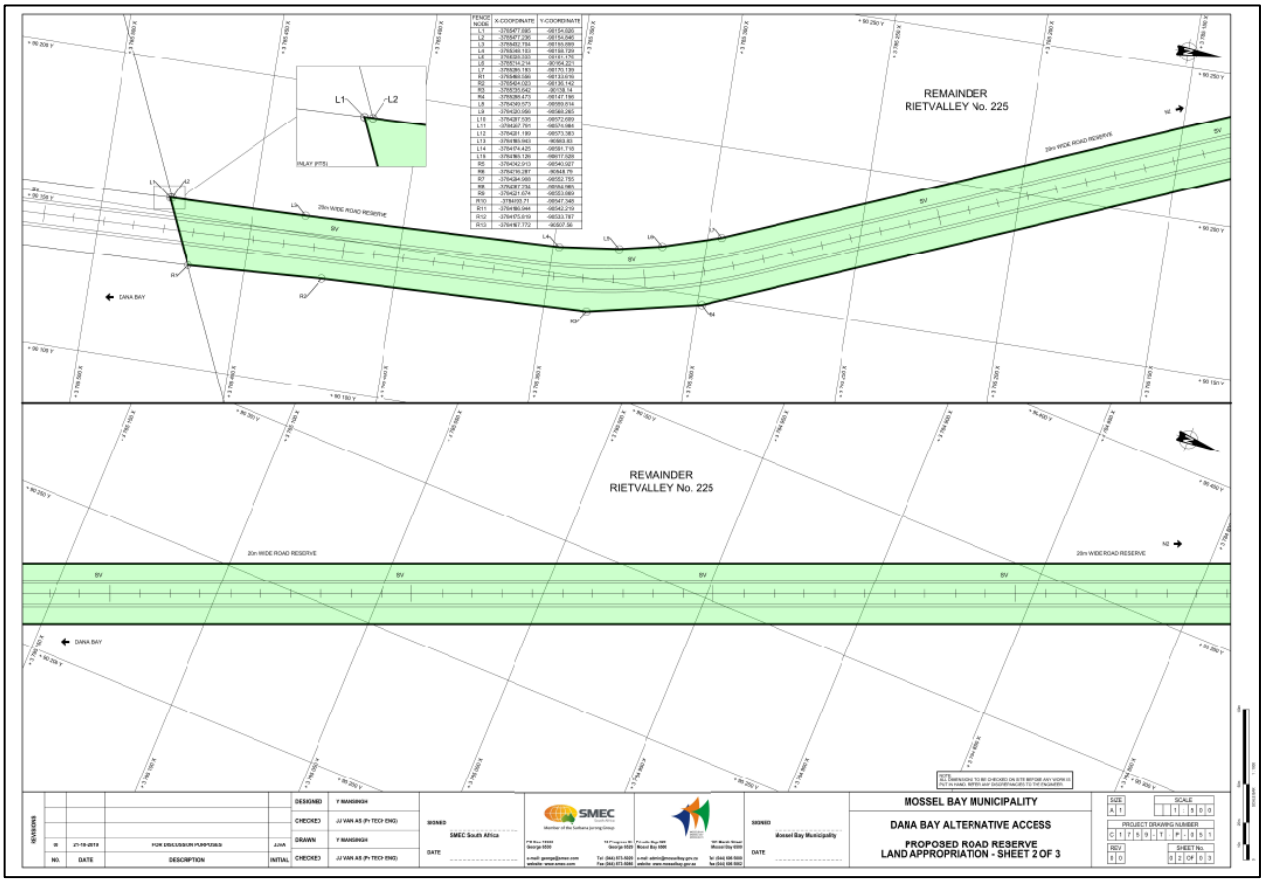


Figure 23: Proposed road reserve

Provide a description of any other property and site alternatives investigated.

Not Applicable

Provide a motivation for the preferred property and site alternative including the outcome of the site selectin matrix.

The proposed site/property for the proposal is in line with the need and desirability guideline whereby the existing partial built Flora Road which extends out the north western corner of Dana Bay.

The proposed property is the preferred property due to the sensitivities of the properties either side of the proposed. In addition, the property will allow for the extension of Flora Road, whereby maximising exiting infrastructure and negate the need to create and addition road in the eastern reaches of Dana Bay.

Provide a full description of the process followed to reach the preferred alternative within the site.

The Alternative B was presented as the proposed activity however considering the required diamond interchange required at the N2 intersection and the need for a cattle creep resulting in the Alternative A, which negates the need to address these two issues as the cattle/livestock can freely cross the gravel road as there will be no daily traffic, due to the road being locked at both ends. In the event of an emergency traffic control will manage the traffic onto the N2 as and when needed. This approach achieves the same goal (to provide an emergency exit) while keeping the cost and impact of the project to a bare minimum.

Provide a detailed motivation if no property and site alternatives were considered.

As explained in the sections above, the proposal is very site specific as the access road is needed at that location and the proposal will not be affective at achieving the goal at any other location or site.

List the positive and negative impacts that the property and site alternatives will have on the environment.

Negative

- Excessive Vegetation clearance and earthworks could result in avoidable erosion of the site and surroundings.
- Contamination of the soil as a result of unmanaged development activities
- Loss of Agricultural land
- Facilitated invasion by alien flora
- Noise generated by construction activities
- Traffic impacts and road safety (Construction Phase)

Positive

- Increase in temporary job opportunities
- Emergency readiness and safety (Operational Phase)
- Capital expenditure due to construction costs

1.2.	Activity alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.

Provide a description of the preferred activity alternative.

Please refer to Section B 3.3 for the description of the activity

Provide a description of any other activity alternatives investigated.

Due to nature of the proposal, there are no activity alternatives, other than the No-Go alternative.

Provide a motivation for the preferred activity alternative.

Due to nature of the proposal, there are no activity alternatives, other than the No-Go alternative. There is currently only one access to Dana Bay. Due to the threat of fire and other factors such as unrest, there neds to be another access. The only other logical route for people to leave is by car and via the proposed route. If a fire is being driven by the south east winds, then the current access road will be blocked. A similar situation occurred in the Knysna fires in places like Brenton, people were evacuated by boat in that case which is impractical in the Dana Bay scenario.

Provide a detailed motivation if no activity alternatives exist.

Due to nature of the proposal, there are no activity alternatives, other than the No-Go alternative. There is currently only one access to Dana Bay. Due to the threat of fire and other factors such as unrest, there

neds to be another access. The only other logical route for people to leave is by car and via the proposed route. If a fire is being driven by the south east winds, then the current access road will be blocked. A similar situation occurred in the Knysna fires in places like Brenton, people were evacuated by boat in that case which is impractical in the Dana Bay scenario.
List the positive and negative impacts that the activity alternatives will have on the environment.

1.3.	Design or layout alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts

Provide a description of the preferred design or layout alternative.
Provide a description of any other design or layout alternatives investigated.
Provide a motivation for the preferred design or layout alternative.
Provide a detailed motivation if no design or layout alternatives exist.
List the positive and negative impacts that the design alternatives will have on the environment.

1.4.	Technology alternatives (e.g., to reduce resource demand and increase resource use efficiency) to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.

Provide a description of the preferred technology alternative:
Provide a description of any other technology alternatives investigated.
Provide a motivation for the preferred technology alternative.
Provide a detailed motivation if no alternatives exist.
List the positive and negative impacts that the technology alternatives will have on the environment.

1.5.	Operational alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.

Provide a description of the preferred operational alternative.
Provide a description of any other operational alternatives investigated.
Provide a motivation for the preferred operational alternative.
Provide a detailed motivation if no alternatives exist.
List the positive and negative impacts that the operational alternatives will have on the environment.

1.6.	The option of not implementing the activity (the 'No-Go' Option).

Provide an explanation as to why the 'No-Go' Option is not preferred.
The No-Go Option/alternative is not preferred for the same reasons that the project is proposed, Dana Bay currently has one access route which is located and feeds into Dana Bay from the north east. In the event that a fire was to sweep through the area from west to east, the residents are able to evacuate the area out of the current access point and out of harm's way. In the event that a fire were to sweep across the area from the opposite direction, east to west, there is a high risk that the access point will be blocked off by the fire, trapping the residents in Dana Bay with no emergency escape route. The current access could also be blocked due to protests or unrest. The proposed Access Road has therefore been proposed to increase emergency safety routes.

1.7.	Provide and explanation as to whether any other alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist.

1.8.	Provide a concluding statement indicating the preferred alternatives, including the preferred location of the activity.
Alternative A is the preferred Alternative. The cost of implementing Alternative B is too high to justify the need. Alternative A therefore achieves the same core goal, to provide an Emergency access in the western reaches of Dana Bay. The property is preferred as it makes use of an existing two track road that is currently a dead-end road. The Preferred Alternative negates the need for a costly intersection with the N2 and will instead make use of traffic control when the need arises.	

2. "No-Go" areas

Explain what "no-go" area(s) have been identified during identification of the alternatives and provide the co-ordinates of the "no-go" area(s).
The areas outside of the proposed road reserve in the pasture land, with the exception of site camps and laydown areas selected in accordance with the ECO, must regarded as no-go areas and within the fynbos areas the development footprint plus two meters on either side of the road footprint (ie. 10m wide area of disturbance) must be regarded as no-go areas.

3. Methodology to determine the significance ratings of the potential environmental impacts and risks associated with the alternatives.

Describe the methodology to be used in determining and ranking the nature, significance, consequences, extent, duration of the potential environmental impacts and risks associated with the proposed activity or development and alternatives, the degree to which the impact or risk can be reversed and the degree to which the impact and risk may cause irreplaceable loss of resources.

The assessment criteria utilised in this environmental impact assessment is based on, and adapted from, the *Guideline on Impact Significance, Integrated Environmental Management Information Series 5* (Department of Environmental Affairs and Tourism (DEAT), 2002) and the *Guideline 5: Assessment of Alternatives and Impacts in Support of the Environmental Impact Assessment Regulations* (DEAT, 2006).

Determination of Extent (Scale):

Site specific	On site or within 100 m of the site boundary, but not beyond the property boundaries.
Local	The impacted area includes the whole or a measurable portion of the site and property, but could affect the area surrounding the development, including the neighbouring properties and wider municipal area.
Regional	The impact would affect the broader region (e.g. neighbouring towns) beyond the boundaries of the adjacent properties.
National	The impact would affect the whole country (if applicable).

Determination of Duration:

Temporary	The impact will be limited to the construction phase.
Short term	The impact will either disappear with mitigation or will be mitigated through a natural process in a period shorter than 8 months after the completion of the construction phase.
Medium term	The impact will last up to the end of the construction phase, where after it will be entirely negated in a period shorter than 3 years after the completion of construction activities.
Long term	The impact will continue for the entire operational lifetime of the development but will be mitigated by direct human action or by natural processes thereafter.
Permanent	This is the only class of impact that will be non-transitory. Such impacts are regarded to be irreversible, irrespective of what mitigation is applied.

Determination of Probability:

Improbable	The possibility of the impact occurring is very low, due either to the circumstances, design or experience.

Probable	There is a possibility that the impact will occur to the extent that provisions must therefore be made.
Highly probable	It is most likely that the impacts will occur at some stage of the development. Plans must be drawn up to mitigate the activity before the activity commences.
Definite	The impact will take place regardless of any prevention plans.

Determination of Significance (without mitigation):

No significance	The impact is not substantial and does not require any mitigation action.
Low	The impact is of little importance, but may require limited mitigation.
Medium	The impact is of sufficient importance and is therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable levels.
Medium-High	The impact is of high importance and is therefore considered to have a negative impact. Mitigation is required to manage the negative impacts to acceptable levels.
High	The impact is of great importance. Failure to mitigate, with the objective of reducing the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable. Mitigation is therefore essential.
Very High	The impact is critical. Mitigation measures cannot reduce the impact to acceptable levels. As such the impact renders the proposal unacceptable.

Determination of Significance (with mitigation):

No significance	The impact will be mitigated to the point where it is regarded to be insubstantial.
Low	The impact will be mitigated to the point where it is of limited importance.
Medium	Notwithstanding the successful implementation of the mitigation measures, the impact will remain of significance. However, taken within the overall context of the project, such a persistent impact does not constitute a fatal flaw.
High	Mitigation of the impact is not possible on a cost-effective basis. The impact continues to be of great importance, and, taken within the overall context of the project, is considered to be a fatal flaw in the project proposal.

Determination of Reversibility:

Completely Reversible	The impact is reversible with implementation of minor mitigation measures
Partly Reversible	The impact is partly reversible but more intense mitigation measures
Barely Reversible	The impact is unlikely to be reversed even with intense mitigation measures
Irreversible	The impact is irreversible and no mitigation measures exist

Determination of Degree to which an Impact can be Mitigated:

Can be mitigated	The impact is reversible with implementation of minor mitigation measures

Can be partly mitigated	The impact is partly reversible but more intense mitigation measures
Can be barely mitigated	The impact is unlikely to be reversed even with intense mitigation measures
Not able to mitigate	The impact is irreversible, and no mitigation measures exist

Determination of Loss of Resources:

No loss of resource	The impact will not result in the loss of any resources
Marginal loss of resource	The impact will result in marginal loss of resources
Significant loss of resources	The impact will result in significant loss of resources
Complete loss of resources	The impact will result in a complete loss of all resources

Determination of Cumulative Impact:

Negligible	The impact would result in negligible to no cumulative effects
Low	The impact would result in insignificant cumulative effects
Medium	The impact would result in minor cumulative effects
High	The impact would result in significant cumulative effects

Determination of Consequence significance:

Negligible	The impact would result in negligible to no consequences
Low	The impact would result in insignificant consequences
Medium	The impact would result in minor consequences
High	The impact would result in significant consequences

4. Assessment of each impact and risk identified for each alternative

Note: The following table serves as a guide for summarising each alternative. The table should be repeated for each alternative to ensure a comparative assessment. The EAP may decide to include this section as Appendix J to this BAR.

Alternative:	**A (preferred)**	**B (Not viable)**	**C (No-Go)**
PLANNING, DESIGN AND DEVELOPMENT PHASE			
Potential impact and risk:	**Excessive Vegetation clearance and earthworks could result in avoidable erosion of the site and surroundings**		
Nature of impact:	Negative		No Impact
Extent and duration of impact:	Local and short to medium term		
Consequence of impact or risk:	Medium • Loss of developable land • Loss of topsoil • Scarred landscape	Medium-High • Loss of developable land • Loss of topsoil • Scarred landscape	
Probability of occurrence:	Probable		
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss of resource		
Degree to which the impact can be reversed:	Completely reversible, however easier to prevent through mitigation measures		
Indirect impacts:	• Loss of developable land • Loss of topsoil • Decrease in property values • Decrease in attractiveness of indigenous landscape • Invasion of alien vegetation		
Cumulative impact prior to mitigation:	• Erosion of the vulnerable areas • Alien vegetation establishment • Loss of land (erosion) • Compromised integrity of houses • Loss of ecological habitat • Decrease in property values of affected properties • Invasion of alien vegetation		
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium	Medium - high	
Degree to which the impact can be avoided:	Can be avoided		
Degree to which the impact can be managed:	Can be managed		
Degree to which the impact can be mitigated:	Can be mitigated		
Proposed mitigation:	• Only the minimum require excavations and disturbances must be undertaken. No excessive excavations must be allowed. • The space required to undertake the activities must be pegged/marked-out and demarcated prior to any vegetation clearing activities, areas outside of the demarcation must be regarded as No-Go areas. • Silt traps must be installed along the disturbed areas, bare of vegetation • Earthworks and excavations must be undertaken as prescribed in Section 8.11 EMPr.		

	• Construction activities should take place during the drier, low rainfall months. Disturbed areas should be revegetated once construction has taken place. • No dumping of soil and / or any other material should take place within or within close proximity to the river and its riparian zone. The footprint of disturbance should be kept to an absolute minimum • Disturbed area must be rehabilitated timelessly once activities in an area have concluded.		
Residual impacts:	• Alien vegetation establishment in disturbed areas. • Young establishing indigenous vegetation will be vulnerable to alien vegetation invasion until they recovered sufficiently.		
Cumulative impact post mitigation:	Low	Low-medium	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Low (-)**	**Low-medium (-)** Marginally higher than Alternative A, due to increased area needed for N2 Junction	**No Impact**

Alternative:	**A (preferred)**	**B (Not viable)**	**C (No-Go)**
PLANNING, DESIGN AND DEVELOPMENT PHASE			
Potential impact and risk:	**Impact on Terrestrial Biodiversity** • Vegetation loss • Impact on Biodiversity Network • Increased opportunity for alien infestation		
Nature of impact:	Negative		No Impact
Extent and duration of impact:	Local and long term		
Consequence of impact or risk:	• Vegetation loss • Impact on Biodiversity Network • Increased opportunity for alien infestation		
Probability of occurrence:	High		
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss of resource		
Degree to which the impact can be reversed:	Partly reversible		
Indirect impacts:	• Loss of fauna habitat • Decrease in biodiversity integrity • Alien vegetation spread into neighbouring properties		
Cumulative impact prior to mitigation:	The cumulative botanical impact of the project is expected to be equivalent to the impact on terrestrial biodiversity and SCC, i.e. the continued erosion of		

	Albertinia Sand Fynbos, the biodiversity network, and loss of SCC as a result of development.		
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium	Medium – high Marginally high due to larger footprint	
Degree to which the impact can be avoided:	Cannot be completely avoided		
Degree to which the impact can be managed:	Can be managed		
Degree to which the impact can be mitigated:	Can be mitigated		
Proposed mitigation:	• During the construction phase, demarcate/fence off the development footprint. Restrict all construction activities, such as stockpiling and parking, to already disturbed areas away from natural vegetation. The contractor(s) must be made aware of the sensitive surroundings. The fynbos and old land areas outside the road footprint must be declared a 'no-go' area and not be disturbed in any way. • Remove topsoil and/or seedbearing plant material from fynbos and old land areas to be disturbed for use in the rehabilitation of disturbed areas after construction. • Engage in alien clearing, focussing on invasive species such as rooikrans, port jackson and prickly pear. These species are category 1b invaders that require compulsory control as part of an invasive species control programme. This will become a long-term maintenance requirement. • Allow 24 months for the monitoring of rehabilitation success and alien infestation post construction.		
Residual impacts:	• Even with mitigation measures and monitoring rehabilitation to ensure effectiveness habitat loss will still occur due to the footprint of the road surface		
Cumulative impact post mitigation:	Low	Low-medium	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Low (-)**	**Low-medium (-)** Marginally higher than Alternative A, due to increased area needed for N2 Junction and the larger road footprint	**No Impact**
OPERATIONAL PHASE			
Potential impact and risk:	**Impact on Terrestrial Biodiversity** • Increased alien infestation		
Nature of impact:	Negative		**No Impact**
Extent and duration of impact:	Local and long term		

Consequence of impact or risk:	Increased alien vegetation infestation		
Probability of occurrence:	High		
Degree to which the impact may cause irreplaceable loss of resources:	Low-medium		
Degree to which the impact can be reversed:	High		
Indirect impacts:	Loss of indigenous vegetation from outcompeting alien vegetation		
Cumulative impact prior to mitigation:	The cumulative botanical impact of the project is expected to be equivalent to the impact on terrestrial biodiversity and SCC, i.e. the continued erosion of Albertinia Sand Fynbos, the biodiversity network, and loss of SCC as a result of development.		
Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High)	Medium		
Degree to which the impact can be avoided:	Can be avoided		
Degree to which the impact can be managed:	Can be managed		
Degree to which the impact can be mitigated:	Can be mitigated		
Proposed mitigation:	• Engage in alien clearing, focussing on invasive species such as rooikrans, port jackson and prickly pear. These species are category 1b invaders that require compulsory control as part of an invasive species control programme. This will become a long-term maintenance requirement. • Allow 24 months for the monitoring of rehabilitation success and alien infestation post construction.		
Residual impacts:	Even with mitigation measures and monitoring rehabilitation to ensure effectiveness habitat loss will still occur due to the footprint of the road surface		
Cumulative impact post mitigation:	Low	Low-medium	
Significance rating of impact after mitigation (e.g., Low, Medium, Medium-High, High, or Very-High)	**Very low (-)**	**Low (-)** Marginally higher than Alternative A, due to increased area needed for N2 Junction and the larger road footprint	**No Impact**

Alternative:	A (preferred)	B (Not viable)	C (No-Go)
PLANNING, DESIGN AND DEVELOPMENT PHASE			
Potential impact and risk:	**Impact on Flora, SCC and Protected Tree Species** Loss of indigenous flora, SCC and protected tree species		
Nature of impact:	Negative		No Impact
Extent and duration of impact:	Local and long term		
Consequence of impact or risk:	Loss of indigenous flora, SCC and protected tree species		
Probability of occurrence:	High		
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss of resource		
Degree to which the impact can be reversed:	Partly reversible		
Indirect impacts:	• Loss of fauna habitat • Decrease in biodiversity integrity		
Cumulative impact prior to mitigation:	The cumulative botanical impact of the project is expected to be equivalent to the impact on terrestrial biodiversity and SCC, i.e. the continued erosion of Albertinia Sand Fynbos, the biodiversity network, and loss of SCC as a result of development.		
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium	Medium – high Marginally high due to larger footprint	
Degree to which the impact can be avoided:	Cannot be completely avoided		
Degree to which the impact can be managed:	Can be managed		
Degree to which the impact can be mitigated:	Can be mitigated		
Proposed mitigation:	• The contractor(s) must be made aware of the presence of SCC and protected tree (Pittosporum viridiflorum) species. Removal of the latter requires a permit from the Department of Forestry. • During the staking out of the construction footprint take cognisance of the presence of recorded SCC and protected trees. Try and avoid these as far as practically possible. It is recommended that a botanist be involved during this process. • Search and rescue bulbs from the construction footprint for replanting in the adjacent areas or rehabilitation of disturbed areas after construction. Topsoil, cuttings and seedbearing plant material can also be salved for this purpose, especially cuttings from Carpobrotus and Pelargonium species. Bulbs should be removed along with some soil, placed in gel, bagged and then taken to a nursery for temporary storage or transplanted directly in the receiving area.		

Residual impacts:	Even with mitigation measures and monitoring rehabilitation to ensure effectiveness habitat loss will still occur due to the footprint of the road surface		
Cumulative impact post mitigation:	Low	Low-medium	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Low (-)**	**Low-medium (-)** Marginally higher than Alternative A, due to increased area needed for N2 Junction and the larger road footprint	**No Impact**
OPERATIONAL PHASE			
Potential impact and risk:	**Impact on Flora, SCC and Protected Tree Species** Alien infestation and resulting displacement of indigenous flora and SCC		
Nature of impact:	Negative		**No Impact**
Extent and duration of impact:	Local and long term		
Consequence of impact or risk:	Loss of indigenous flora, SCC and protected tree species		
Probability of occurrence:	High		
Degree to which the impact may cause irreplaceable loss of resources:	Marginal Loss of Resource		
Degree to which the impact can be reversed:	Completely reversible		
Indirect impacts:	• Loss of fauna habitat • Decrease in biodiversity integrity		
Cumulative impact prior to mitigation:	The cumulative botanical impact of the project is expected to be equivalent to the impact on terrestrial biodiversity and SCC, i.e. the continued erosion of Albertinia Sand Fynbos, the biodiversity network, and loss of SCC as a result of development.		
Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High)	Medium		
Degree to which the impact can be avoided:	Can be avoided		
Degree to which the impact can be managed:	Can be managed		
Degree to which the impact can be mitigated:	Can be mitigated		
Proposed mitigation:	Keep the site clear of aliens for up to 24 months after completion of Rehabilitation Phase		
Residual impacts:	Even with mitigation measures and monitoring rehabilitation to ensure effectiveness habitat loss will still occur due to the footprint of the road surface		
Cumulative impact post mitigation:	Low	Low-medium	
Significance rating of impact after mitigation (e.g., Low, Medium, Medium-High, High, or Very-High)	**Low (-)**	**Low-medium (-)** Marginally higher than Alternative A, due to increased area needed for N2 Junction and the larger road footprint	**No Impact**

Alternative:	A (preferred)	B (Not viable)	C (No-Go)
PLANNING, DESIGN AND DEVELOPMENT PHASE			
Potential impact and risk:	**CONTAMINATION OF THE SOIL AS A RESULT OF UNMANAGED DEVELOPMENT ACTIVITIES -** Contaminants such as oil, diesel, etc could contaminating the soil		
Nature of impact:	Negative		NO Impact
Extent and duration of impact:	Local and Temporary		
Consequence of impact or risk:	High • Contamination of soil • Loss of fauna and flora		
Probability of occurrence:	Probable		
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss of resources		
Degree to which the impact can be reversed:	Partly reversible		
Indirect impacts:	Loss of biota Loss of ecosystem functionality		
Cumulative impact prior to mitigation:	Contamination of soil Loss of fauna and flora Loss of ecosystem functionality		
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	High		
Degree to which the impact can be avoided:	Can be avoided		
Degree to which the impact can be managed:	Can be managed		
Degree to which the impact can be mitigated:	Can be mitigated		
Proposed mitigation:	• General management measures relating to the management of waste and hazardous substances stated in the EMPr must be implemented as and where applicable, in consultation with the ECO. In addition: **General Pollution Management:** • No pollution of surface water or ground water resources may occur due to any activity on the site. • No storm water runoff from any premises containing waste, or water containing waste emanating from construction activities may be discharged into the environment. Polluted stormwater must be contained on the site. • Cement batching / mixing may not take place directly on the soil surface, it must be done on an impervious lining that will prevent cement particles from contaminating the soil. **General Waste Management:** • Dedicated waste bins or skips must be provided on site and kept in a demarcated area on an impermeable surface. • Separate waste bins/skips must be provided for recyclable waste, general waste and hazardous waste. Recovered builder's rubble & green waste		

	may be stockpiled on the ground within the site camp, or in separate skips until removal. • Waste must be placed in the appropriate waste bins/skips/ stockpiles. • Hazardous waste bins must be kept on an impermeable bunded surface capable of holding at least 110% of the volume of the bins. • Skips/ bins must be provided with secure lids or covering that will prevent scavenging and windblown waste or dust. • Waste bins/skips must be regularly emptied and must not be allowed to overflow. • Construction workers must be instructed not to litter and to place all waste in the appropriate waste bins provided on site. • The Contractor must ensure that all workers on site are familiar with the correct waste disposal procedures to be followed. • Waste generated on site must be classified and managed in accordance with the National Environmental Management: Waste Act – Waste Classification and Management Regulations (GN No. R. 634 of August 2013). • Disposal of waste to landfill must be undertaken in accordance with the National Environmental Management: Waste Act – National Norms and Standard for the Assessment of Waste for Landfill Disposal (GN No. R. 635 of August 2013). • All waste, hazardous as well as general, which result from the proposed activities must be disposed of appropriately at a licensed Waste Disposal Facility (WDF). **Pollution Management – hydrocarbons (oil, fuel etc.)** • Vehicles and machinery must be in good working order and must be regularly inspected for leaks. • If a vehicle or machinery is leaking pollutants it must, as soon as possible, be taken to an appropriate location for repair. The ECO has the authority to request that any vehicle or piece of equipment that is contaminating the environment be removed from the site until it has been satisfactorily repaired. • Repairs to vehicles/ machinery may take place on site, within a designated maintenance area at the site camp. Drip trays, tarpaulin or other impermeable layer must be laid down prior to undertaking repairs. • Refuelling of vehicles/ machinery may only take place at the site camp or vehicle maintenance yard. Where refuelling must occur, drip trays should be utilised to catch potential spills/ drips. • Drip trays must be utilised during decanting of hazardous substances and when refilling chemical/ fuel storage tanks. • Drip trays must be placed under generators (if used on site) water pumps and any other machinery on site that utilises fuel/ lubricant, or where there is risk of leakage/spillage.	

	• Where feasible, fuel tanks should be elevated so that leaks are easily detected. • A spill kit to neutralise/treat spills of fuel/ oil/ lubricants must be available on site, and workers must be educated on how to utilise the spill kit. • Soil contaminated by hazardous substances must be excavated and disposed of as hazardous waste. **Pollution Management – Ablution facilities** • Chemical toilets should be kept at the site camp, on a level surface and secured from blowing over. • Toilets must be located well outside of any storm water drainage lines, and may not be linked to the storm water drainage system in any way. • Chemical toilets must be regularly emptied and the waste disposed of at an appropriate waste water disposal/ treatment site. Care must be taken to prevent spillages when moving or servicing chemical toilets. **Pollution Management – Hazardous Substances** • Any hazardous substances (materials, fuels, other chemicals etc.) that may be required on site must be stored according to the manufacturers' product-storage requirements, which may include a covered, waterproof bunded housing structure. • Material Safety Data Sheets (MSDSs) shall be readily available on site for all chemicals and hazardous substances to be used on site. Where possible and available, MSDSs should additionally include information on ecological impacts and measures to minimise negative environmental impacts during accidental releases. • Hazardous chemicals and fuels should be stored on bunded, impermeable surfaces with sufficient capacity to hold at least 110% of the capacity of the storage tanks.		
Residual impacts:	If all mitigation measures are effectively implemented no residual impacts are expected		
Cumulative impact post mitigation:	Negligible/None – the proposed mitigation measure, if implemented correctly will completely mitigate the potential cumulative impacts		
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Low (-)**	**Low – Medium (-)** Marginally higher than Alternative A, due to increased area needed for N2 Junction and the increase in materials need to construct a tarred road.	**No Impact**

Alternative:	**A (preferred)**	**B (Not viable)**	**C (No-Go)**
PLANNING, DESIGN AND DEVELOPMENT PHASE			
Potential impact and risk:	**LOSS OF AGRICULTURAL LAND** The Agricultural property, currently utilized for grazing will be cut into two by the proposal and result in the loss of approximately 34297 m^2. The rest of the property will however be able to continue to function as it has been with the addition of a livestock crossing so as not to limit movement		

	between the split property. The owner of the property has indicated as such during a meeting held with the role players.		
Nature of impact:	Negative		No Impact
Extent and duration of impact:	Site specific and Permanent		
Consequence of impact or risk:	• Less pasturelands for livestock to graze • Slight hinderance as livestock will have to cross the proposed road • Potential theft of livestock as the road makes the property more accessible		
Probability of occurrence:	Definite		
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss of resource		
Degree to which the impact can be reversed:	Completely reversible		
Indirect impacts:	Potential for contaminated runoff to negatively affect the surrounding agricultural lands		
Cumulative impact prior to mitigation:	Loss of agricultural land		
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low	Low - Medium	
Degree to which the impact can be avoided:	Cannot be avoided		
Degree to which the impact can be managed:	Can be managed		
Degree to which the impact can be mitigated:	Cannot be mitigated		
Proposed mitigation:	The minimum required width for the proposed road must be used to limit loss of agricultural land		
Residual impacts:	Less potential grazing areas for livestock		
Cumulative impact post mitigation:	Loss of agricultural land		
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Low (-)**	**Low – Medium (-)** Marginally higher than Alternative A, due to increased area needed for N2 Junction and road footprint	No Impact

Alternative:	**A (preferred)**	**B (Not viable)**	**C (No-Go)**
PLANNING, DESIGN AND DEVELOPMENT PHASE			
Potential impact and risk:	**FACILITATED INVASION BY ALIEN FLORA:** Alien species are fast growing and establish rapidly in disturbed areas. Disturbance associated with the construction of the proposed road could facilitate the further spread of these species		
Nature of impact:	Negative		No Impact
Extent and duration of impact:	Site specific and long term		
Consequence of impact or risk:	Medium • Increase in water consumption • Decrease in soil stability • Spread of alien vegetation seeds		
Probability of occurrence:	Highly Probable		
Degree to which the impact may cause irreplaceable loss of resources:	No loss of resource		

Degree to which the impact can be reversed:	Can be reversed	
Indirect impacts:	Alien species spread onto the agricultural lands	
Cumulative impact prior to mitigation:	Medium	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium	
Degree to which the impact can be avoided:	Can be avoided	
Degree to which the impact can be managed:	Can be and must be mitigate	
Degree to which the impact can be mitigated:	Can be mitigated	
Proposed mitigation:	• Disturbed areas should be revegetated with appropriate indigenous vegetation. • Control of alien invasive plant species should be undertaken • Use should be made of manual removal and the application of appropriate herbicides, where necessary. • Manual removal should not be carried out by any machinery larger than a chainsaw.	
Residual impacts:	Even after mitigation and/or alien vegetation removal, alien seeds could still lay dormant within the seed bank until the ground is disturbed once more	
Cumulative impact post mitigation:	Low	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Low (-)**	**NO Impact**

Alternative	**A (preferred)**	**B (Not viable)**	**C (No-Go)**
PLANNING, DESIGN AND DEVELOPMENT PHASE			
Potential impact and risk:	**DISTURBANCE AND HABITAT DESTRUCTION** associated with removal of natural vegetation, soil compaction and disturbance		**DISTURBANCE AND HABITAT LOSS** associated with continued alien plant encroachment of fynbos habitat
Nature of impact:	Negative		
Extent and duration of impact:	Site specific and medium term		Local to possibly regional and long term
Consequence of impact or risk:	Medium Loss of important sub-populations of butterfly SCC; Further fragmentation of sub-populations of butterfly SCC across habitats of the south coast		
Probability of occurrence:	Highly Probable		
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss of resource		Significant loss of resources
Degree to which the impact can be reversed:	Can be reversed		
Indirect impacts:	Alien establishment in disturbed areas		
Cumulative impact prior to mitigation:	Medium		High
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium		High

Degree to which the impact can be avoided:	Can be avoided		
Degree to which the impact can be managed:	Can be and must be mitigate		
Degree to which the impact can be mitigated:	Can be mitigated		
Proposed mitigation:	• Clearing of natural vegetation should be prevented or to be kept to a minimum where necessary. • The smallest possible working corridor, particularly along the southern fynbos habitats, must be used. • No off-road driving should be allowed by construction vehicles. • All temporary/permanent fences to be erected will need to be of sufficient low height and mesh size to allow fauna (small rodents, antelope, etc.) to move freely through and to not act as a barrier to dispersal. The southern parts of the access road will bisect an area of fynbos and must not impede migration of the local fauna from and across the project area. • Any drainage/water run-off trenches required to be built alongside the road should be shallow and broad with low-angle sides (<30 degrees) so as not to trap fossorial invertebrates (e.g. dung beetles) and small vertebrates (e.g. snakes, tortoises). • Several arboreal ant nests of *Crematogaster peringueyi* were found at along the proposed road. Considering the importance of these ant nests for the larvae of certain butterflies, the nests could potentially be translocated through search-and-rescue to the immediate vicinity outside the road footprint. Some success has been achieved with this strategy in other parts of the Western Cape. A specialist (such as the author of this report) would need to be contracted for this. • Any alien vegetation found on the project area, particularly in the southern fynbos areas, should be removed by an alien plant clearing team during the construction phase; invasive alien plants are seen as a significant threat to the habitat of the invertebrate SCC (Hochkirch et al., 2018; Mecenero et al., 2013).		• Removal and future monitoring of alien plants, particularly from southern fynbos habitats.
Residual impacts:	Even after mitigation and/or alien vegetation removal, alien seeds could still lay dormant within the seed bank until the ground is disturbed once more		
Cumulative impact post mitigation:	Low		Medium
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Low (-)**	**Low Medium (-)**	**Medium (-)**
Alternative	**A (preferred)**	**B (Not viable)**	**C (No-Go)**
OPERATIONAL PHASE			
Potential impact and risk:	**DISTURBANCE AND POSSIBLE ROAD DEATHS** associated with vehicle movements		**HABITAT LOSS** associated with

			continued alien plant encroachment
Nature of impact:	Negative		
Extent and duration of impact:	Site specific and short term		Local to possibly regional and long term
Consequence of impact or risk:	General disturbance to faunal SCC; Loss of individuals of grasshopper SCC.		Loss of important sub-populations of butterfly SCC; Further fragmentation of sub-populations of butterfly SCC across habitats of the south coast
Probability of occurrence:	Improbable		Highly Probable
Degree to which the impact may cause irreplaceable loss of resources:	No loss of resource		Significant loss of resources
Degree to which the impact can be reversed:	Can be reversed		
Indirect impacts:	Compromised Biodiversity integrity		
Cumulative impact prior to mitigation:	Medium		High
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium		High
Degree to which the impact can be avoided:	Can be avoided		
Degree to which the impact can be managed:	Can be and must be mitigate		
Degree to which the impact can be mitigated:	Can be mitigated		
Proposed mitigation:	Removal and future monitoring of alien plants, particularly from southern fynbos habitats.		
Residual impacts:	Even after mitigation and/or alien vegetation removal, alien seeds could still lay dormant within the seed bank until the ground is disturbed once more		
Cumulative impact post mitigation:	Low		Medium
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Low (-)**	**Low-medium (-)** Marginally higher than Alternative A, due to increased area needed for N2 Junction and the larger road footprint	**Medium (-)**

Alternative:	**A (preferred)**	**B (Not viable)**	**C (No-Go)**
PLANNING, DESIGN AND DEVELOPMENT PHASE			
Potential impact and risk:	**NOISE GENERATED BY CONSTRUCTION ACTIVITIES:** Construction related noise cause nuisance to the surrounding environment.		
Nature of impact:	Negative		No Impact
Extent and duration of impact:	Site specific and temporary		
Consequence of impact or risk:	Negligible • Disruption to surrounding landowners		
Probability of occurrence:	Definite		

Degree to which the impact may cause irreplaceable loss of resources:	No loss of resource		
Degree to which the impact can be reversed:	Barely reversible		
Indirect impacts:	None		
Cumulative impact prior to mitigation:	Low		
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low		
Degree to which the impact can be avoided:	Not avoidable		
Degree to which the impact can be managed:	Can be managed by only allowing unavoidable noise impacts		
Degree to which the impact can be mitigated:	Can barely be mitigated		
Proposed mitigation:	Routine alien clearing on the new road shoulder and within the road reserve will be required to prevent alien infestation		
Residual impacts:	None		
Cumulative impact post mitigation:	Negligible		
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Insignificant**	**Insignificant – low** Marginally higher than Alternative A, due to increased construction activities associated with a tarred road	**No Impact**

Alternative:	**A (preferred)**	**B (Not viable)**	**C (No-Go)**
PLANNING, DESIGN AND DEVELOPMENT PHASE			
Potential impact and risk:	**INCREASE IN TEMPORARY JOB OPPORTUNITIES**		
Nature of impact:	Positive		No Impact
Extent and duration of impact:	Local and Temporary		
Consequence of impact or risk:	High Income for those employed during the construction phase.		
Probability of occurrence:	Definite		
Degree to which the impact may cause irreplaceable loss of resources:	N/A		
Degree to which the impact can be reversed:	N/A		
Indirect impacts:	Quality of life for labourers is temporarily uplifted Capital influx for households		
Cumulative impact prior to mitigation:	Low		
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low		
Degree to which the impact can be avoided:	Not Applicable		

Degree to which the impact can be managed:	This positive impact is managed by the municipality by providing developers/contractors with targets for local employment to reach		
Degree to which the impact can be mitigated:	Not Applicable		
Proposed mitigation:	Not Applicable		
Residual impacts:	Not Applicable		
Cumulative impact post mitigation:			
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Medium (+)**	**Medium High (+)**	**No Impact**

Alternative:	**A (preferred)**	**B (Not viable)**	**C (No-Go)**
PLANNING, DESIGN AND DEVELOPMENT PHASE			
Potential impact and risk:	**TRAFFIC IMPACTS AND ROAD SAFETY**		
Nature of impact:	Negative		NO Impact
Extent and duration of impact:	Site Specific and Temporary		
Consequence of impact or risk:	Low • Slowed traffic movements and disruptions • Potentially dangerous area during construction activities due to construction vehicles entering and exiting the site		
Probability of occurrence:	Definite		
Degree to which the impact may cause irreplaceable loss of resources:	No loss of resource		
Degree to which the impact can be reversed:	Barely reversible		
Indirect impacts:	Delays and disruptions for users of the road in the vicinity of the access points		
Cumulative impact prior to mitigation:	-		
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low		
Degree to which the impact can be avoided:	Cannot be avoided		
Degree to which the impact can be managed:	Can be managed		
Degree to which the impact can be mitigated:	Can barely be mitigated		
Proposed mitigation:	The contractor must comply with the relevant Road Traffic and construction regulations		
Residual impacts:	Even with mitigation, delays will be experienced to ensure road safety		
Cumulative impact post mitigation:			
Significance rating of impact after mitigation (e.g., Low, Medium, Medium-High, High, or Very-High)	**Low (-)**	**Low – Medium (-)**	**No Impact**
OPERATIONAL PHASE			
Potential impact and risk:	**EMERGENCY READINESS-ACCESS ROAD FOR EMERGENCIES**		
Nature of impact:	Positive		No Impact
Extent and duration of impact:	Site specific and permanent		

Consequence of impact or risk:	No unnecessary loss of life or injuries		
Probability of occurrence:	Definite		
Degree to which the impact may cause irreplaceable loss of resources:	Not Applicable		
Degree to which the impact can be reversed:	Can be fully reversed		
Indirect impacts:	Peace of mind for residents Increased emergency preparedness		
Cumulative impact prior to mitigation:	Not Applicable		
Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High)			
Degree to which the impact can be avoided:	Can be avoided		
Degree to which the impact can be managed:	Not Applicable		
Degree to which the impact can be mitigated:	No mitigation proposed for positive impact		
Proposed mitigation:	Not applicable		
Residual impacts:			
Cumulative impact post mitigation:			
Significance rating of impact after mitigation (e.g., Low, Medium, Medium-High, High, or Very-High)	**High (+)**	**Very High (+)**	**No Impact**

Alternative:	**A (preferred)**	**B (Not viable)**	**C (No-Go)**
PLANNING, DESIGN AND DEVELOPMENT PHASE			
Potential impact and risk:	**CAPITAL EXPENDITURE DUE TO CONSTRUCTION COSTS** It is anticipated that construction related costs will be in the region of R9.7 million:		
Nature of impact:	Positive		No Impact
Extent and duration of impact:	Regional and Temporary		
Consequence of impact or risk:	Capital influx for businesses involved, and knock on effect as the businesses that will supply services (such as toilets) and materials (such as paving and fill materials) for the development will benefit from the capital influx		
Probability of occurrence:	Definite		
Degree to which the impact may cause irreplaceable loss of resources:	No loss of resource		
Degree to which the impact can be reversed:	N/A		
Indirect impacts:	Growth for business involved in the development and general influx of capital into the construction sector support industries (services such portable toilet companies, etc)		
Cumulative impact prior to mitigation:	N/A		
Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High)	Low-medium		
Degree to which the impact can be avoided:	N/A		

Degree to which the impact can be managed:	Can be managed by encouraging proponent to support local business		
Degree to which the impact can be mitigated:	N/A		
Proposed mitigation:	Local business should be supported as far as possible		
Residual impacts:	Certain services or materials may need to be sourced from outside of the George Municipal area		
Cumulative impact post mitigation:			
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Medium (+)**	**Medium high (+)**	**No Impact**
OPERATIONAL PHASE			
Potential impact and risk:	**Social Impact** Save lives of residents and people who work		
Nature of impact:	Positive		No Impact
Extent and duration of impact:	Regional and Permanent		
Consequence of impact or risk:	Lives saved by making use of the emergency access in times of need.		
Probability of occurrence:	Definite		
Degree to which the impact may cause irreplaceable loss of resources:	Not probable		
Degree to which the impact can be reversed:	Completely reversible		
Indirect impacts:	Peace of mind for residents and people who work in Dana Bay		
Cumulative impact prior to mitigation:	Not Applicable		
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	High (+)		
Degree to which the impact can be avoided:	Not desirable to avoid this positive impact		
Degree to which the impact can be managed:	The positive impact will be managed by emergency personnel/municipal officials that will unlock the gates of the access road in times of need		
Degree to which the impact can be mitigated:	Not desirable to mitigate this positive impact		
Proposed mitigation:	No Mitigation proposed		
Residual impacts:	Not Applicable		
Cumulative impact post mitigation:	Not Applicable		
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**High (+)**	**Very High (+)**	**No Impact**

Potential Freshwater Impacts as discussed in the Freshwater Assessment

Please also refer to the Impact Tables above which have incorporated impact mitigation to address the potential impacts discussed by the freshwater Assessment below

Disturbance / loss of aquatic habitat The disturbance or loss of aquatic vegetation and habitat refers to the direct physical destruction or disturbance of aquatic habitat caused by infilling, vegetation clearing, disturbance of wetland habitat, encroachment and colonisation of habitat by invasive alien plants. The construction of the road will result in direct loss of the depression wetland.	
Construction Phase The construction of the road will require land clearance, excavations, land re-surfacing, and infilling along the proposed route and the proposed road reserve. The depression wetland is within the road route and will thus be cleared of vegetation, infilled and compacted for road construction. This will result in direct habitat loss. The other identified aquatic habitats are not within the proposed construction corridor but could be indirectly disturbed by various activities. The machinery, vehicles and workers (i.e. turning areas and crossings) needed to construct the road could encroach into riparian habitat and laydown areas will alter the catchment land cover. The movement of topsoil and incorrectly placed stockpiles could bury aquatic habitat. However, disturbance of the non perennial streams can be avoided.	Mitigation This potential impact will be managed and mitigated by the implementation of the EMPr
Operational Phase Localised scour around structures may result and alter the streams natural bank and channel downslope. Road drainage can concentrate diffuse flows and can also inadvertently trigger gully formation. The stormwater infrastructure of the road will increase and concentrate flows into the downslope watercourses. This may lead to erosion in the systems that compromises remaining habitat. The project will promote the establishment of disturbance-tolerant biota, including colonization by invasive alien species, weeds and pioneer plants near the riparian habitat. Although this impact is initiated during the construction phase it is likely to persist into the operational phase. Road maintenance activities will have similar impacts to the construction phase activities.	Mitigation This potential impact will be managed and mitigated by the implementation of the EMPr
Sedimentation and erosion Sedimentation and erosion refers to the alteration in the physical characteristics of wetlands and rivers as a result of increased turbidity and sediment deposition, caused by soil erosion and earthworks that are associated with construction activities, as well as instability and collapse of unstable soils during project operation. These impacts can result in the deterioration of aquatic ecosystem integrity and a reduction/loss of habitat for aquatic dependent flora & fauna.	
Construction Phase The wetland is proposed to be infilled as it is located along the road route and will therefore not be affected by sedimentation or erosion. Additionally, as it is a depression wetland system these impacts would be of low significance to the wetland despite infilling. However, the riparian streams downslope of the working corridor may be impacted upon by sedimentation and erosion. Vegetation clearing and exposure of bare soils upslope of the aquatic habitat during construction will decrease the soil binding capacity and cohesion of the upslope soils and thus increase the risk of erosion and sedimentation downslope. This may cause the burying of aquatic habitat and also cause aquatic faunal fatalities. Ineffective site stormwater management, particularly in periods of high runoff, can lead to soil erosion from confined flows. Formation of rills and gullies from increased concentrated runoff. However, the gentle slope and non perennial nature of the drainage lines will limit the effects of this impact.	Mitigation This potential impact will be further managed and mitigated by the implementation of the EMPr and monitoring the stormwater management of the construction phase.

Operational Phase Where soil erosion problems and bank stability concerns initiated during the construction phase are not timeously and adequately addressed, these can persist into the operational phase of the development project and continue to have a negative impact on water resources in the study area. The increase in hardened surface by the road can will result in further erosion/sedimentation in the non perennial streams. Surface runoff and velocities will be increased, and flows may be concentrated by stormwater infrastructure. Stormwater management during operation will be critical in ensuring that runoff characteristics mimic the natural scenario and do not lead to increased floodpeaks and flow velocities which could lead to increased erosion and sedimentation risks that could potentially affect the downstream watercourses.	Mitigation This potential impact will be managed and mitigated by the implementation of the EMPr
Water Pollution Water and/or soil pollution cause negative changes in the physical, chemical and biological characteristics of water resources (i.e. water quality). This can result in possible deterioration in aquatic ecosystem integrity and a reduction in, or loss of, species of conservation concern (i.e. rare, threatened/endangered species). The result is only disturbance tolerant species remaining. There is negligible open water within the study area. Therefore, the risk to water quality of any resources is limited.	
Construction Phase During construction there are usually a number of potential pollution inputs into the aquatic systems (such as hydrocarbons and raw cement). These pollutants alter the water quality parameters such as turbidity, nutrient levels, chemical oxygen demand and pH. These alternations impact the species composition of the systems, especially species sensitive to minor changes in these parameters. Sudden drastic changes in water quality can also have chronic effects on aquatic biota in general and result in localised extinctions. Hydrocarbons including petrol/diesel and oils/grease/lubricants associated with construction activities (machinery, maintenance, storage, handling) may potentially enter the downslope streams by means of surface runoff or through dumping by construction workers (in high rainfall events). The incorrect positioning and maintenance of the portable chemical toilets and use of the surrounding environment as ablution facilities may result in sewage and chemicals entering the systems. No wetland habitat is likely to be impacted by water pollution as it is assumed that the depression wetland is to be infilled and transformed to road area. Also, even if it should be conserved, the wetland is so rarely inundated that it is unlikely that there will be any water to receive pollutants. The streams are likely to flow very intermittently for short periods of time and are therefore at low risk of water pollution. If the No Go Map is adhered to then water pollution will become highly unlikely to occur.	Mitigation This potential impact will be managed and mitigated by the implementation of the EMPr
Operational Phase The greater the extent of hardened surfaces the lower the infiltration of stormwater and therefore the greater the surface runoff and increase in flood peaks in downslope watercourses. A change in water distribution generally results in altered wetness regimes, which in turn affect the biophysical processes and the vegetation patterns. Stormwater runoff is a threat to freshwater biodiversity not only because of the increased hydrological disturbance and habitat loss, but also because of an increased delivery of pollutants to streams. These pollutants often do not have a chronic effect on aquatic biota but their negative and collective effects may be realised over longer periods of time. The increase in	Mitigation This potential impact will be managed and mitigated by the implementation of the EMPr

vehicles on the property due to the development increases the potential for pollutants to enter the systems. If not prevented, litter, and contaminants, including sand, silt, and dirt particles, will enter storm water runoff and pollute the watercourses. As mentioned above, the intermittent flow characteristics of the riparian areas limits these impacts. During maintenance of the development there could be water pollution impacts similar to those encountered in the construction phase.	
Flow Modification This includes the changes in the quantity, timing and distribution of water inputs and flows within a watercourse. Possible ecological consequences associated with this impact may include deterioration in freshwater ecosystem integrity, reduction/loss of habitat for aquatic dependent flora & fauna, and a reduction in the supply of ecosystem goods & services. However, the activities associated with the proposal are unlikely to cause any significant flow modifications. The systems are rarely inundated/flowing and with appropriate stormwater management this should remain unchanged. It is assumed that the depression wetland will not be impacted upon through flow modification as it is proposed to be infilled. Even if the wetland habitat is preserved there will not be significant changes to the hydrological regime. The No Go Map will ensure that no flow modifications occur as the non perennial streams would be avoided and stormwater managed appropriately.	
Construction Phase Land clearing and earth works upslope of the watercourses will reduce infiltration rates and increase the surface runoff volume and velocity. Such changes in surface roughness and runoff rates may lead to some rill and gully erosion. Altered water inputs from upslope disturbances as well as modified water distribution and retention patterns will ultimately affect the hydrological integrity of water resources. However, the land upslope of the streams is already transformed from the natural condition. The road will not substantially change the infiltration rates or runoff volumes from the present state of the catchment. The stormwater runoff outlets, if poorly designed, may concentrate surface flows and alter the manner in which flow enters the systems. However, this would be only a slight increase and occur infrequently during high rainfall events.	<u>Mitigation</u> This potential impact will be managed and mitigated by the implementation of the EMPr
Operational Phase Hardened/artificial infrastructure will alter the natural processes of rainwater infiltration and surface runoff, promoting increased volumes and velocities of storm water runoff, which can be detrimental to the rivers and wetlands receiving concentrated flows from these areas. According to the SANRAL (2006), urbanisation typically increases the runoff rate by 20 -50%, compared with natural conditions. Increased volumes and velocities of storm water draining from the road and discharging into down-slope watercourses can alter the natural ecology of the systems, increasing the risk of erosion and channel incision/scouring. The impact of permanent flow modifications caused by the development is likely to be minimal. Provided that erosion is prevented there is a low likelihood of any significant flow changes.	<u>Mitigation</u> This potential impact will be managed and mitigated by the implementation of the EMPr
Cumulative Impacts Cumulative impacts on the environment can result from broader, long term changes and not only as a result of a single activity or development. They are rather from the combined effects of many activities overtime. The impacts of the proposed road, when assessed on its own, are found to be of Low significance (after mitigation). But, due to increasing rate and demand of urban development in the area the impact can become cumulatively more significant. Despite this, there are no foreseeable high negative cumulative impacts anticipated. The project will not affect any habitat identified within the national spatial datasets or impact water resource protection targets. The most effective and proactive solution is sustainable land use planning with a broader spatial	

and temporal focus. The Mossel Bay Municipality has applied this approach in the investigation of some of the areas surrounding the urban centres. The catchment of the Blinde River that joins the ocean near Dana Bay should be studied as a whole in relation to future development plans. This identification and protection of sensitive aquatic habitat on a catchment scale will minimise the amount of negative cumulative impacts.

SECTION I: FINDINGS, IMPACT MANAGEMENT AND MITIGATION MEASURES

1.	Provide a summary of the findings and impact management measures identified by all Specialist and an indication of how these findings and recommendations have influenced the proposed development.

Table 1 below summarises the impact tables above highlighting the impact significance post mitigation.

Table 2: Summary of Anticipated Impacts Post mitigation

Impact	Alternative A (Preferred Alternative)	Alternative B (Not Viable)	Alternative C (No-Go)
Construction Phase			
Erosion: Unmanaged vegetation clearing and earthworks	Low (-)	Low Medium (-)	No Impact
Impact on Terrestrial Biodiversity	Low (-)	Low Medium (-)	
Impact on Flora, SCC and Protected Tree Species	Low (-)	Low Medium (-)	
Contamination of soil	Low (-)	Low Medium (-)	
Loss of Agricultural Land	Low (-)	Low Medium (-)	
Facilitated invasion by alien flora	Low (-)		
Disturbance and habitat destruction	Low (-)	Low Medium (-)	Medium (-)
Disturbance and possible road deaths	Low (-)	Low Medium (-)	No Impact
Noise generated by construction activities	Insignificant	Insignificant Low (-)	
Traffic and road safety impacts	Low (-)	Low Medium (-)	
Temporary job creation	Medium (+)	Medium High (+)	
Capital expenditure	Medium (+)	Medium High (+)	
Operational Phase			
Impact on Terrestrial Biodiversity	Very Low (-)	Low (-)	No Impact
Impact on Flora, SCC and Protected Tree Species	Low (-)	Low Medium (-)	
Habitat Loss through unmanaged alien species	Low (-)	Low Medium (-)	Medium (-)
Emergency readiness	High (+)	Very High (+)	No Impact

Social Impact	High (+)	Very High (+)	

2.	List the impact management measures that were identified by all Specialist that will be included in the EMPr

Freshwater Specialist recommended mitigation measures

Construction footprint

• Use the smallest possible working corridor. Outside the working corridor, all watercourses are to be considered no go areas. Any unnecessary intrusion into these areas is prohibited. Where intrusion is required, the working corridor must be kept to a minimum and identified and demarcated clearly before any construction commences to minimise the impact.

• All freshwater habitats outside of the demarcated construction area must be considered 'No- Go' areas for the duration of the construction phase.

Erosion and sedimentation

• The mitigation of impacts must focus on managing the runoff generated by the road and introducing it responsibly into the receiving environment. The stormwater flows must enter the drainage areas in a diffuse flow pattern without pollutants.

• Sedimentation must be minimised with appropriate measures.

• Construction must have contingency plans for high rainfall events during construction.

• Excavated rock and sediments from the construction zone, and including any foreign materials, should not be placed within the delineated riparian areas in order to reduce the possibility of material being washed downstream.

• Stockpiling should be restricted to level areas safe from flood prone areas.

Waste

• The solid domestic waste must be removed and disposed of offsite. All post-construction building material and waste must be cleared in accordance with the EMPr.

• Spoil material must be hauled to a designated spoil site. No spoil material must be pushed down slope or discarded on site.

• Portable chemical toilets will be utilised and maintained.

• All solid waste generated during the construction process (including packets, plastic, rubble, cut plant material, waste metals etc.) must be placed in the waste collection area in the construction camp and must not be allowed to blow around the site, be accessible by animals, or be placed in piles adjacent the skips / bins. Burying of waste, rubble on site is prohibited.

Vegetation

• Clearing of riparian vegetation should be prevented or to be kept to a minimum. When practicable, prune or top the vegetation instead of grubbing/uprooting.

• It is the contractor's responsibility to continuously monitor the area for newly established alien species during the contract and establishment period, which if present must be removed. Removal of these species shall be undertaken in a way which prevents any damage to the remaining indigenous species and inhibits the re-infestation of the cleaned areas. Any use of herbicides in removing alien plant species is required to be investigated by the ECO before use, for the necessity, type proposed to be used, effectiveness and impacts of the product on aquatic biota.

• Rubble is often placed aside during construction and never removed. It buries habitat and alters the sediment composition of the area, allowing alien plants to encroach.

Pollutants

• The entire area must be protected from direct or indirect spills of pollutants, e.g. sediment, refuse, sewage, cement, oils, fuels, chemicals, wastewater etc. Should any spills of hazardous materials occur on the site or in the storage area, the relevant clean-up specialists must be contacted immediately. In the event of a spillage that cannot be contained, and which poses a serious threat to the local environment, the following Departments must be informed of the incident in accordance with Section 30 of the National Environmental Management Act, Act 107 of 1998, within forty-eight (48) hours:

o The Local Authority;

o The Department of Mineral Resources
o Department of Water and Sanitation;
• Mixing and/or decanting of all chemicals and hazardous substances must take place on a tray, shutter boards or on an impermeable surface and must be protected from stormwater.
• Cement/concrete batching is to be located in an area of low environmental sensitivity away from the river channels and pre-approved by the ECO. No batching activities shall occur on unprotected ground. Adequate surface protection will be required. Concrete batching should be restricted to a level and bunded/sealed surface above the riverbanks.
• Contaminated water containing fuel, oil or other hazardous substances must never be released into the environment. It must be disposed of at a registered hazardous landfill site.
• Stormwater exit points must include a best management practice approach to trap any additional suspended solids and pollutants originating from the proposed development.

Rehabilitation
• All disturbed areas beyond the construction site that are intentionally or accidentally disturbed during the construction phase must be rehabilitated immediately to the satisfaction of the ECO.
• Erosion features that have developed due to construction within the aquatic habitat due to the project are required to be stabilised. This may also include the need to deactivate any erosion headcuts/rills/gullies that may have developed.
• Consult WET-RehabEvaluate, WET-RehabMethods (Cowden and Kotze, 2009), and the river rehabilitation manual developed by Day et al. 2016, for further information.

Monitoring
• The monitoring of the activities is essential to ensure the mitigation measures are implemented. Therefore, compliance with the mitigation recommendations must be monitored by a suitably qualified individual. Monitoring for non-compliance must be done on a daily basis by the contractors. Photographic records of all incidents and non-compliances must be retained. This is to ensure that the impacts on the aquatic habitat are adequately managed and mitigated against and the successful rehabilitation of any disturbed areas within any system occurs.
• A monitoring programme shall be in place, not only to ensure compliance with the EMPr throughout the construction phase, but also to monitor any post-construction environmental issues and impacts. The monitoring should be regular and additional visits must be taken when there is potential risk to freshwater habitat.
• Any contractors found working inside the 'No-Go' areas should be fined as per a fining schedule/system setup for the project.

Botanical Specialist recommended mitigation measures

- During the construction phase, demarcate/fence off the development footprint. Restrict all construction activities, such as stockpiling and parking, to already disturbed areas away from natural vegetation. The contractor(s) must be made aware of the sensitive surroundings. The fynbos and old land areas outside the road footprint must be declared a 'no-go' area and not be disturbed in any way.
- Remove topsoil and/or seedbearing plant material from fynbos and old land areas to be disturbed for use in the rehabilitation of disturbed areas after construction.
- Engage in alien clearing, focussing on invasive species such as rooikrans, port jackson and prickly pear. In terms of the NEMBA (Act 10 of 2004) Alien and Invasive Species List (2016), these species are category 1b invaders that require compulsory control as part of an invasive species control programme. This will become a long-term maintenance requirement. One-year old seedlings can be hand-pulled, preferably when soil is wet after a rainfall. If left to grow, removal becomes more difficult and costly. The use of heavy plant, such as bush cutters or D9 Caterpillar, for alien clearing is not recommended. Port jackson stumps must also be treated with herbicides to prevent coppicing.
- Allow 24 months for the monitoring of rehabilitation success and alien infestation post construction.

- The contractor(s) must be made aware of the presence of SCC and protected tree (Pittosporum viridiflorum) species. Removal of the latter requires a permit from the Department of Forestry.
- During the staking out of the construction footprint take cognisance of the presence of recorded SCC and protected trees. Try and avoid these as far as practically possible. It is recommended that a botanist be involved during this process.
- Search and rescue bulbs from the construction footprint for replanting in the adjacent areas or rehabilitation of disturbed areas after construction. Topsoil, cuttings and seedbearing plant material can also be salved for this purpose, especially cuttings from Carpobrotus and Pelargonium species. Bulbs should be removed along with some soil, placed in gel, bagged and then taken to a nursery for temporary storage or transplanted directly in the receiving area.

Terrestrial Animal (Invertebrate) Species Impact Assessment mitigation measures

- Clearing of natural vegetation should be prevented or to be kept to a minimum where necessary.
- The smallest possible working corridor, particularly along the southern fynbos habitats, must be used.
- No off-road driving should be allowed by construction vehicles.
- All temporary/permanent fences to be erected will need to be of sufficient low height and mesh size to allow fauna (small rodents, antelope, etc.) to move freely through and to not act as a barrier to dispersal. The southern parts of the access road will bisect an area of fynbos and must not impede migration of the local fauna from and across the project area.
- Any drainage/water run-off trenches required to be built alongside the road should be shallow and broad with low-angle sides (<30 degrees) so as not to trap fossorial invertebrates (e.g. dung beetles) and small vertebrates (e.g. snakes, tortoises).
- Several arboreal ant nests of Crematogaster peringueyi were found at along the proposed road. Considering the importance of these ant nests for the larvae of certain butterflies, the nests could potentially be translocated through search-and-rescue to the immediate vicinity outside the road footprint. Some success has been achieved with this strategy in other parts of the Western Cape. A specialist (such as the author of this report) would need to be contracted for this.
- Any alien vegetation found on the project area, particularly in the southern fynbos areas, should be removed by an alien plant clearing team during the construction phase; invasive alien plants are seen as a significant threat to the habitat of the invertebrate SCC (Hochkirch et al., 2018; Mecenero et al., 2013).
- Removal and future monitoring of alien plants, particularly from southern fynbos habitats.

A Traffic Impact Assessment, compiled SMEC, dated June 2020, the conclusions and recommendations are as follows:

For future growth purposes, it was assumed that the remaining erven in the Dana Bay will be 50% developed within 5 years, and 100% developed within 10 years. It is anticipated that the other planned developments will be 50% developed within 5 years, and 100% developed within 10 years. It is anticipated that Phase 1 of the land use development would generate 894 and 871 new vehicular trips during the Weekday AM and PM Peak Hours respectively, and Phase 1 + 2 of the land use development would generate 1 788 and 1 743 new vehicular trips during the Weekday AM and PM Peak Hours respectively.

In the event that the Dana Bay Alternate Access would serve as a primary or secondary access to the area, the following road improvements would be required:

• Construct a diamond interchange with single lane on- and off-ramps; and
• The bridge over the N2 Freeway to comprise one lanes per direction, as well as a short right-turn lane; and
• Traffic signals serving as junction control at the north terminal and south terminal of the diamond interchange.

3.	List the specialist investigations and the impact management measures that will **not** be implemented and provide an explanation as to why these measures will not be implemented.

All proposed impact management measures will be incorporated into the EMPr and implemented during the construction phase

4.	Explain how the proposed development will impact the surrounding communities.

The proposal will provide an emergency access road for the residents of Dana Bay.
It will also provide temporary job opportunities for the local community during the construction phase.

5.	Explain how the risk of climate change may influence the proposed activity or development and how has the potential impacts of climate change been considered and addressed.

The proposal is located between 1.7km and 3km north of the coastline, in addition the site is located on the top of the coastal Plateau and will not be impacted by climate change and rising sea levels.

6.	Explain whether there are any conflicting recommendations between the specialists. If so, explain how these have been addressed and resolved.

No conflicting recommendations

7.	Explain how the findings and recommendations of the different specialist studies have been integrated to inform the most appropriate mitigation measures that should be implemented to manage the potential impacts of the proposed activity or development.

All Specialist recommendations will be incorporated into the EMPr as mitigation measures.

8.	Explain how the mitigation hierarchy has been applied to arrive at the best practicable environmental option.

The mitigation hierarchy refers to the steps taken to mitigate environmental impacts relating to a proposed development. The hierarchy begins with the most beneficial method of mitigation and moves to the least beneficial, as illustrated below.

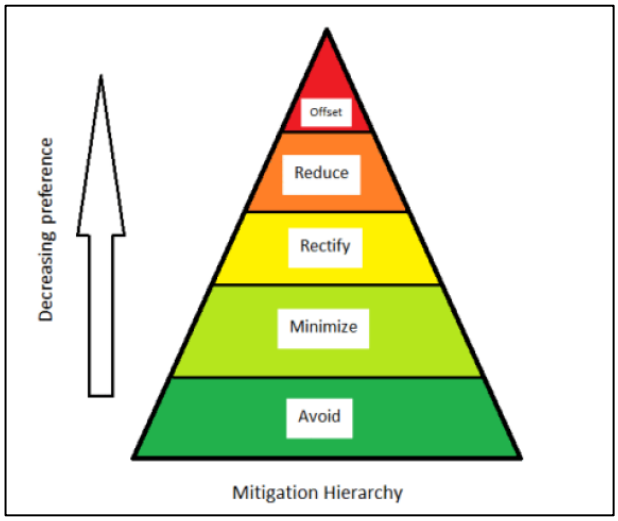


Figure 24: The mitigation hierarchy

This hierarchy was considered while determining the best practicable environmental option for the proposed development. Impacts have further been reduced through the inclusion of additional mitigation measures into the EMPr.

No offsets are required for the proposed development.

SECTION J: GENERAL

1. Environmental Impact Statement

1.1.	Provide a summary of the key findings of the EIA.

The key findings of the EIA show that the positive impacts of providing an emergency access road in the western reaches of Dana Bay in the operational phase and the temporary jobs created during the construction phase outweigh the potential negative effects to the natural environment.

As seen from the summary of anticipated impacts post mitigation measures (Table 1 and 2) all negative construction phase impacts can be mitigated to a low significance, with the two positive impacts having a medium significance. The same can be said for the potential operational phase negative impacts which are also of low significance after mitigation and the two positive impacts having a high significance.

The presence of the water course located west of the route and the two unused dams influenced the route determination to avoid those areas. The specialist study did however find the presence of a small depression wetland along the proposed route.

The wetland identified is not connected to the river network and the water source is likely to be rainfall dominated and prolonged flooding from restricted infiltration by a sub-surface clay layer. There is only temporary wetness and thus it is dominated by grass species.

Mitigation measures recommended by the specialists will be incorporated into the EMPr and implemented to minimise and manage the impacts to the vegetation and freshwater aspects of the site.

The TIA undertaken for the Alternative B revealed the need for a large diamond intersection with the N2, this was considered a nonviable option due to the high costs associated. As such the Alternative A (Preferred), proposes a gravel road, locked at both ends for use in emergency situations.

1.2.	Provide a map that that superimposes the preferred activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. (Attach map to this BAR as Appendix B2)
1.3.	Provide a summary of the positive and negative impacts and risks that the proposed activity or development and alternatives will have on the environment and community.

Table 3: Summary of Anticipated Impacts Post mitigation

Impact	Alternative A (Preferred Alternative)	Alternative B (Not Viable)	Alternative C (No-Go)
Construction Phase			
Erosion: Unmanaged vegetation clearing and earthworks	Low (-)	Low Medium (-)	No Impact
Impact on Terrestrial Biodiversity	Low (-)	Low Medium (-)	
Impact on Flora, SCC and Protected Tree Species	Low (-)	Low Medium (-)	
Contamination of soil	Low (-)	Low Medium (-)	
Loss of Agricultural Land	Low (-)	Low Medium (-)	
Facilitated invasion by alien flora	Low (-)		
Disturbance and habitat destruction	Low (-)	Low Medium (-)	Medium (-)
Disturbance and possible road deaths	Low (-)	Low Medium (-)	No Impact
Noise generated by construction activities	Insignificant	Insignificant Low (-)	

Traffic and road safety impacts	Low (-)	Low Medium (-)	
Temporary job creation	Medium (+)	Medium High (+)	
Capital expenditure	Medium (+)	Medium High (+)	
Operational Phase			
Impact on Terrestrial Biodiversity	Very Low (-)	Low (-)	No Impact
Impact on Flora, SCC and Protected Tree Species	Low (-)	Low Medium (-)	
Habitat Loss through unmanaged alien species	Low (-)	Low Medium (-)	Medium (-)
Emergency readiness	High (+)	Very High (+)	No Impact
Social Impact	High (+)	Very High (+)	

2. Recommendation of the Environmental Assessment Practitioner ("EAP")

2.1.	Provide Impact management outcomes (based on the assessment and where applicable, specialist assessments) for the proposed activity or development for inclusion in the EMPr

Potential impacts were assessed and mitigation measures to minimise the negative impacts were explored in greater depth Section G of this BAR.

Within the Environmental Management Programme (attached as Appendix H) the Environmental Impact Management has been separated into 4 sections, Planning and design phase; Pre-construction Phase, Construction phase and post construction rehabilitation phase.

Table 4: Impact management objectives and impact management outcomes included in the EMPr

PLANNING AND DESIGN PHASE	
IMPACT MANAGEMENT OBJECTIVES	**IMPACT MANAGEMENT OUTCOMES**
To appoint a suitably qualified and experienced Environmental Control Officer	The conditions of Environmental Authorisation and the requirements of the EMPr are implemented and monitored during all phases of the development, which will promote sound environmental management on site.
To compile a detailed design and site layout plan that adheres to the conditions of the Environmental Authorisation	Development is compliant with Environmental Authorisation and the EMPr
To ensure the EMPr adheres to the requirements of the Environmental Authorisation and makes provision for the final detailed site layout.	Good environmental management is promoted on site
PRE-CONSTRUCTION PHASE	
Identify and demarcate no-go areas, working areas and site facilities	Future construction activities will be restricted to within the designated areas & environmentally sensitive areas (no-go areas) will be protected from disturbance
To set up and equip the site camp and associated site facilities in a manner that will promote good environmental management.	Site camp facilities do not impact significantly on environment. The equipment required to implement the provisions of the EMPr are provided on site.

Environmental Control Officer to conduct an inspection prior to the commencement of construction activities on site	Good environmental management is promoted and enforced by the ECO during the full pre-construction and construction phases. Site facilities are appropriately located on site. Construction workers receive environmental awareness training before commencing work on site
CONSTRUCTION PHASE	
To prevent soil loss on site (erosion)	Soil erosion is kept to a minimum and the nearby aquatic systems are not impacted significantly as a result of soil erosion.
To ensure soil is not contaminated through careless or unmanaged construction activities.	The environment (including soil, surface water and groundwater) is not contaminated
To prevent avoidable loss of agricultural land	The pasturelands outside of the development footprint are not adversely affected by construction activities and construction vehicle movements
To create habitat free of alien vegetation	The level of alien infestation decreases over time.
To prevent avoidable noise impacts	No loud music or non-construction related noise emanates from the site
To create employment opportunities with potential for skills transfer, for members of the local community	The local community benefits from the employment opportunities created during the construction phase.
POST CONSTRUCTION REHABILITATION PHASE	
To rehabilitate all areas disturbed by construction activities in an environmentally sensitive manner	The site is neat and tidy and all exposed surfaces are suitably covered/ stabilised. There is no construction-related waste or pollution remaining on site.

In order to obtain/reach the impact management objects the corresponding mitigation measures prescribed in the BAR and EMPr must be implemented.

The Impact monitoring will be undertaken by an appointed and independent ECO.

The impact management outcomes will be monitored by the appointed ECO, in addition to the implementation of mitigation measures during the duration of the development, if all management mitigation measures are implemented successfully the resulting impact management outcomes will mean that the develop was undertaken with no significant or avoidable impacts to the environment.

2.2.	Provide a description of any aspects that were conditional to the findings of the assessment either by the EAP or specialist that must be included as conditions of the authorisation.

All Specialists and commenting authority recommendation have been incorporated into the BAR and EMPr, the EMPr must be complied with during the construction and rehabilitation phase and as such the implementation of the EMPr is conditional of the impact significance rating post implementation of the mitigation measures.

Other recommended condition of Authorisation:

- A combined search and rescue plan and Rehabilitation plan for the disturbed areas must be compiled, attached to the Amended EMPr and approved by the CA before commencement (with the approval of the Amended EMPr)
- Laydown areas, storage areas and the site camp area must be approved by the ECO and Engineer.

- The Areas outside the Road reserve in the fynbos areas must be regarded as No-Go areas. Activities within the Fynbos Areas must be limited to the absolute necessary.

2.3.	Provide a reasoned opinion as to whether the proposed activity or development should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be included in the authorisation.

Taking the findings of the various specialists inputs into consideration and that the proposal in itself is to provide an emergency access road out of Dana Bay for its residents and people that work there, ensuring their safety and peace of mind, it is my reasoned opinion that the proposal should be authorised. Considering that all potential negative impacts can be mitigated to that of a low negative significance it must be a condition of Environmental authorisation that the EMPr be implemented and compliance therewith be monitored by an ECO.

2.4.	Provide a description of any assumptions, uncertainties and gaps in knowledge that relate to the assessment and mitigation measures proposed.

- It is assumed that all the information provided by the specialists and on which the report is based is correct and valid at the time receipt thereof.
- It is assumed that the proposed mitigation measures, as listed in this report and the EMPr (Appendix H), will be implemented and adhered to by all the relevant stakeholders involved.

<u>The following limitations and assumptions apply to the Botanical Assessment:</u>
Fieldwork was carried out at the end of the winter season and again in late spring. Flowering plants that only flower at other times of the year (e.g. autumn to early winter), such as certain bulbs, may have been missed. The overall confidence in the completeness and accuracy of the botanical findings is however considered to be good.
Notwithstanding the above limitation and the fact that the vegetation is highly transformed in places, the specialist is of the opinion that the survey and findings are adequate to aid decision making.

<u>Terrestrial Biodiversity (Invertebrate) Assessment limitations and assumptions</u>

- It is assumed that all third-party information used (e.g. GIS data and species historical records) was correct at the time of generating this report.
- A site visit was undertaken during spring (late September) on a warm and sunny day, ideal for most invertebrate SCC activity. Undertaking a site visit in spring is an ideal time to detect most of the listed invertebrate SCC at the project site.

<u>Freshwater Assessment limitations and assumptions</u>

- The location of the proposed road was provided by the client in shapefile format. However, the extent of the road in width is not shown.
- No alternatives were provided for assessment as of yet.
- No stormwater plan was provided by the client as of yet.
- Aquatic ecosystems vary both temporally and spatially. Once-off surveys such as this are therefore likely to miss certain ecological information due to seasonality, thus limiting accuracy and confidence.
- Infield soil and vegetation sampling was only undertaken within a specific focal area around the proposed development, while the remaining watercourses were delineated at a desktop level with limited accuracy.
- No detailed assessment of aquatic fauna/biota was undertaken.
- The vegetation information provided is based on observation not formal vegetation plots. As such species documented in this report should be considered as a list of dominant and/or indicator wetland/riparian species and only provide a very general indication of the composition of the riverine vegetation communities.
- The assessment of impacts and recommendation of mitigation measures was informed by the site-specific ecological concerns arising from the field survey and based on the assessor's working knowledge and experience with similar development projects. The degree of confidence is considered good.

	• The study does not include flood line determination or offset calculations. • The past land use disturbances to the soil profile and vegetation composition of this area, as well as the highly seasonal nature of the systems, decrease the accuracy of infield delineations.
2.5.	The period for which the EA is required, the date the activity will be concluded and when the post construction monitoring requirements should be finalised.

An Environmental Authorisation Validity Period of 5 years is requested.

Approximately 1 year is desired for the negotiations and expropriation process to acquire ownership of the proposed road reserve from the landowner.

2 Years for Pre-commencement activities (allocating and acquiring funds, tendering process and appointing of construction team. etc)
1 Year for construction
1 Year for the rehabilitation and follow up alien clearing

3. Water

Since the Western Cape is a water scarce area explain what measures will be implemented to avoid the use of potable water during the development and operational phase and what measures will be implemented to reduce your water demand, save water and measures to reuse or recycle water.
Water will only be used during the construction phase for inter alia the compaction of ground material. The operational phase of the proposal will not require water or other bulk services.

4. Waste

Explain what measures have been taken to reduce, reuse or recycle waste.
An integrated waste management system will be a condition of authorisation and incorporated into the EMPr.

5. Energy Efficiency

8.1.	Explain what design measures have been taken to ensure that the development proposal will be energy efficient.
The proposal will not require energy in the operational phase.	

SECTION K: DECLARATIONS

DECLARATION OF THE APPLICANT

Note: Duplicate this section where there is more than one Applicant.

I S. NAIDOO, ID number 6210245252084 in my personal capacity or duly authorised thereto hereby declare/affirm that all the information submitted or to be submitted as part of this application form is true and correct, and that:

- I am fully aware of my responsibilities in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), the Environmental Impact Assessment ("EIA") Regulations, and any relevant Specific Environmental Management Act and that failure to comply with these requirements may constitute an offence in terms of relevant environmental legislation;
- I am aware of my general duty of care in terms of Section 28 of the NEMA;

- I am aware that it is an offence in terms of Section 24F of the NEMA should I commence with a listed activity prior to obtaining an Environmental Authorisation;

- I appointed the Environmental Assessment Practitioner ("EAP") (if not exempted from this requirement) which:
  - meets all the requirements in terms of Regulation 13 of the NEMA EIA Regulations; or
  - meets all the requirements other than the requirement to be independent in terms of Regulation 13 of the NEMA EIA Regulations, but a review EAP has been appointed who does meet all the requirements of Regulation 13 of the NEMA EIA Regulations;

- I will provide the EAP and any specialist, where applicable, and the Competent Authority with access to all information at my disposal that is relevant to the application;

- I will be responsible for the costs incurred in complying with the NEMA EIA Regulations and other environmental legislation including but not limited to –
  - costs incurred for the appointment of the EAP or any legitimately person contracted by the EAP;
  - costs in respect of any fee prescribed by the Minister or MEC in respect of the NEMA EIA Regulations;
  - Legitimate costs in respect of specialist(s) reviews; and
  - the provision of security to ensure compliance with applicable management and mitigation measures;

- I am responsible for complying with conditions that may be attached to any decision(s) issued by the Competent Authority, hereby indemnify, the government of the Republic, the Competent Authority and all its officers, agents and employees, from any liability arising out of the content of any report, any procedure or any action for which I or the EAP is responsible in terms of the NEMA EIA Regulations and any Specific Environmental Management Act.

Note: If acting in a representative capacity, a certified copy of the resolution or power of attorney must be attached.

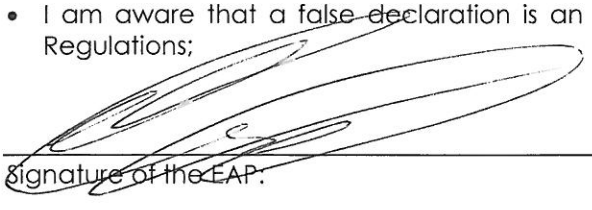
Signature of the Applicant: Date: 08/12/2022

Mossel Bay Municipality
Name of company (if applicable):

DECLARATION OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

I **Michael Jon Bennett**, EAPASA Registration number **2021/3163** as the appointed EAP hereby declare/affirm the correctness of the:

- Information provided in this BAR and any other documents/reports submitted in support of this BAR;
- The inclusion of comments and inputs from stakeholders and I&APs;
- The inclusion of inputs and recommendations from the specialist reports where relevant; and
- Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties, and that:
- In terms of the general requirement to be independent:
  - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the activity or application and that there are no circumstances that may compromise my objectivity; or
  - am not independent, but another EAP that meets the general requirements set out in Regulation 13 of NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review EAP must be submitted);
- In terms of the remainder of the general requirements for an EAP, am fully aware of and meet all of the requirements and that failure to comply with any the requirements may result in disqualification;
- I have disclosed, to the Applicant, the specialist (if any), the Competent Authority and registered interested and affected parties, all material information that have or may have the potential to influence the decision of the Competent Authority or the objectivity of any report, plan or document prepared or to be prepared as part of this application;
- I have ensured that information containing all relevant facts in respect of the application was distributed or was made available to registered interested and affected parties and that participation will be facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments;
- I have ensured that the comments of all interested and affected parties were considered, recorded, responded to and submitted to the Competent Authority in respect of this application;
- I have ensured the inclusion of inputs and recommendations from the specialist reports in respect of the application, where relevant;
- I have kept a register of all interested and affected parties that participated in the public participation process; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations;



Signature of the EAP: Date: 10/01/2023

Sharples Environmental Services cc

Name of company (if applicable):

DECLARATION OF THE REVIEW EAP

I ……, EAPASA Registration number …….. as the appointed Review EAP hereby declare/affirm that:

- I have reviewed all the work produced by the EAP;
- I have reviewed the correctness of the information provided as part of this Report;
- I meet all of the general requirements of EAPs as set out in Regulation 13 of the NEMA EIA Regulations;
- I have disclosed to the applicant, the EAP, the specialist (if any), the review specialist (if any), the Department and I&APs, all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations.

Signature of the EAP: Date:

Name of company (if applicable):

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

I ……, as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
  - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or

  - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);

- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;

- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and

- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.

Signature of the EAP: Date:

Name of company (if applicable):

DECLARATION OF THE REVIEW SPECIALIST

I ……., as the appointed Review Specialist hereby declare/affirm that:

- I have reviewed all the work produced by the Specialist(s):
- I have reviewed the correctness of the specialist information provided as part of this Report;
- I meet all of the general requirements of specialists as set out in Regulation 13 of the NEMA EIA Regulations;
- I have disclosed to the applicant, the EAP, the review EAP (if applicable), the Specialist(s), the Department and I&APs, all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations.

Signature of the EAP: Date:

Name of company (if applicable):