

REVISED DRAFT BASIC ASSESSMENT REPORT

in support of an

ENVIRONMENTAL AUTHORIZATION

**IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998
(ACT NO. 107 OF 1998) AND THE ENVIRONMENTAL IMPACT ASSESSMENT
REGULATIONS, 2014 AS AMENDED**

for

**PROPOSED SWIMMING POOL, RECREATIONAL FACILITIES AND
ASSOCIATED INFRASTRUCTURE AT DIE STROOM PICNIC SITE IN THE
BONTEBOK NATIONAL PARK ON ERF RE/5338, SWELLENDAM
MUNICIPALITY, WESTERN CAPE**

DFFE Ref: 14/12/16/3/3/1/3107

30 MAY 2025

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Verification	Capacity	Name	Signature	Date
Author	EAPASA Registered EAP – 2020/2326	Johmandie Pienaar		30 May 2025

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

PROJECT TITLE

PROPOSED SWIMMING POOL, RECREATIONAL FACILITIES AND ASSOCIATED INFRASTRUCTURE AT DIE STROOM PICNIC SITE IN THE BONTEBOK NATIONAL PARK ON ERF RE/5338, SWELLENDAM MUNICIPALITY – WESTERN CAPE

DFFE Ref: 14/12/16/3/3/1/3107

GENERAL PROJECT DESCRIPTION

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

The proposed swimming pool, recreational facilities and associated infrastructure at Die Stroom Picnic Site in the Bontebok National Park, Swellendam will include the following:

- Pool Backwash tank slab = 15m² for 5000liter JoJo
- Septic tank and Pump chamber = 40m²
- Pool pump room = 40m²
- Ablutions/Shower/Change Area = 105m²
- Swimming Pool = 315m²
- Terrace less Pool = 1115m²
- Fence = 210m long and 1.5m high
- Physically Disabled Ramp =80m²
- Parking = 240m²
- Underground electrical cable = 110m long (Area measured in sewer trench calculation)
- Sewer line /Soak-away = 260m long (Area = 390m²)
- Pool back-wash and soak-away = 260m long (Area measured in sewer trench calculation)
- Water supply line = 25m long (Area 25m²) (Balance of area measured in sewer trench calculation)
- Soak-away = 150m² (15m x 10m)
- 2 x Biofilters = 64m² (4m x 8m each)

Construction footprint = 0.44ha

Construction laydown areas are to be located within the existing parking areas at Die Stroom Picnic site, no areas outside of the proposed development footprint area may be cleared or used for construction laydown or stockpiling areas.

Proposed development will lead to the permanent clearance of ±0.2ha of indigenous vegetation. The final development footprint for the developments as described above = ± 0.28Ha

ACRONYMS

DFFE:	Department of Forestry, Fisheries and Environment
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
WCBSA:	Western Cape Biodiversity Spatial Plan

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	NA
	Appendix A3:	Map with the GPS co-ordinates for linear activities	NA
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 B3:	Site development plan GPS co-ordinates	✓
Appendix C:	Photographs	✓	
Appendix D:	Biodiversity overlay map	✓	
Appendix E:	Permit(s) / license(s) / exemption notice, agreements	NA	
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 may be required.	✓	
Appendix G:	Specialists Reports		
	Appendix G1: Terrestrial Biodiversity Impact Assessment	✓	
	Appendix G2: Plant Impact Assessment	✓	
	Appendix G3: Animal Impact Assessment	✓	
	Appendix G4: Aquatic Impact Assessment	✓	
	Appendix G5: Heritage Western Cape Notice of Intent	✓	
	Appendix G6: Heritage Impact Assessment	✓	

	Appendix G7: Palaeontological Impact Assessment	✓
Appendix H:	Draff EMPr	✓
Appendix I:	Updated Screening tool report and Site Sensitivity Verification Report (May 2025)	✓
Appendix J:	The impact and risk assessment for each alternative	✓
Appendix K:	Need and Desirability Motivation	✓
Appendix L:	Any other attachments must be included as subsequent appendices	
	Appendix L1: EAP CV	✓
	Appendix L2: Section 50(5) Authorisation Letter	✓
	Appendix L3: Water Supply Municipal Confirmation	✓
	Appendix L4: Technical Report for Services for Swimming Pool Development at Die Stroom in Bontebok National Park	✓

SECTION A: ADMINISTRATIVE DETAILS

<p>Duplicate this section where there is more than one Proponent</p> <p>Name of Applicant/Proponent:</p> <p>Name of contact person for Applicant/Proponent (if other):</p> <p>Company/ Trading name/State Department/Organ of State:</p> <p>Company Registration Number:</p> <p>Postal address:</p> <p>Telephone:</p> <p>E-mail:</p>	South African National Parks		
	Ms Antionet van Wyk		
	SANParks		
	NA – Public Entity		
	PO Box 787		
	Pretoria	Postal code: 0001	
	021 741 2569	Cell: 083 791 4911	
	esther.howard@sanparks.org	Fax:- NA	
	Company of EAP:	Enviro-EAP (Pty) Ltd	
	EAP name:	Johmandie Pienaar	
Postal address:	PO Box 205		
Agulhas	Postal code: 7287		
Telephone:	-	Cell: 072 240 3092	
E-mail:	johmandie@enviro-eap.co.za	Fax: (086) 435 4691	
Qualifications:	<p>EAP since March 2009</p> <p>Johmandie Pienaar (Giliomee) holds a Baccalaureus Technologiae Degree (Cum Laude) in Nature Conservation from the Cape Peninsula University of Technology and has also completed the following short courses at the Centre for Environmental Management:</p> <ul style="list-style-type: none"> • Implementing Environmental Management Systems (ISO 14001)(2009); • Occupational Health and Safety Law for Managers (2010); • Implementing an OHS Management System based on OHSAS 18001 (2010) and; 		

EAPASA registration no:	<ul style="list-style-type: none"> Occupational Health and Safety Management System OHSAS 18001 Audit: A Lead Auditor Course Based on ISO 19011 and ISO 17021 (2011). 	
	And presented by Executive Coaching & Facilitation: <ul style="list-style-type: none"> Conduct Outcome Based Assessment s(May 2015). 	
2020/2326		
Duplicate this section where there is more than one landowner Name of landowner: Name of contact person for landowner (if other): Postal address: Telephone: E-mail:	Same as proponent	
	Postal code:	
	Cell:	
	Fax:	
Name of Person in control of the land: Name of contact person for person in control of the land: Postal address: Telephone: E-mail:	Same as proponent	
	Postal code:	
	Cell:	
	Fax: ()	

Duplicate this section where there is more than one Municipal Jurisdiction Municipality in whose area of jurisdiction the proposed activity will fall: Contact person: Postal address: Telephone: E-mail:	Swellendam Municipality	
	Municipal Manager Annaleen Vorster	
	PO Box 20	
	Swellendam	
	Postal code: 6470	
	028 514 6500/025 514 8511	
Cell: -		
anneleenv@swellendam.gov.za info@swellendam.gov.za		Fax: -

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

1.	Is the proposed development (please tick):	New		Expansion	✓
2.	Is the proposed site(s) a brownfield of greenfield site? Please explain.				
Greenfield located within and around the existing Die Stroom picnic site in the Bontebok National Park.					
3.	For Linear activities or developments - Not Applicable				
3.1.	Provide the Farm(s)/Farm Portion(s)/Erf number(s) for all routes:				
NA					
3.2.	Development footprint of the proposed development for all alternatives.				NA m ²
NA					
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.				
NA					
3.4.	Indicate how access to the proposed routes will be obtained for all alternatives.				
NA					
3.5.	SG codes of the Farms/Farm	Digit of the	NA		

Clearance of 0.2ha of indigenous vegetation of Endangered – Swellendam Silcrete Fynbos	34° 04' 37.68" S	20° 25' 46.44" E
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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
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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.	YES	NO
The National Water Act, 1998 (Act No. 36 of 1998) ("NWA"). If yes, attach a copy of the comment from the DWS.	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

LEGISLATION, POLICIES, PLANS, GUIDELINES, SPATIAL TOOLS, MUNICIPAL DEVELOPMENT PLANNING FRAMEWORKS, AND INSTRUMENTS	ADMINISTERING AUTHORITY and how it is relevant to this application	TYPE Permit/license/authorisation/comment / relevant consideration (e.g. rezoning or consent use, building plan approval, Water Use License and/or General Authorisation, License in terms of the SAHRA and CARA, coastal discharge permit, etc.)
Western Cape Land Use Planning Act, 2014 ("LUPA")	Swellendam Municipality	NA – no rezoning application required
National Water Act, 1998 (Act No. 36 of 1998) [NWA] and relevant regulations	Department of Water And Sanitation	Water Use Application
National Environmental Management Act, 1998 (Act No. 107 of 1998) [NEMA] and relevant regulations	DFFE	Environmental Authorisation Application
National Heritage Resources Act 25 of 1999 [NHRA]	Heritage Western Cape South African Heritage Resource Agency	NID submitted
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) [NEMWA] and relevant regulations	DFFE	NA

National Environmental Management: Biodiversity Act 10 of 2004 [NEMBA]	DFFE	Comments to be obtained concerning expected biodiversity impacts
National Environmental Management: Air Quality Act, 39 Of 2004 [NEMAQA] and Relevant Regulations	DFFE	NA
Conservation of Agricultural Resources Act, 43 Of 1983 [CARA]	National Department of Agriculture, forestry and Fisheries Western Cape Department of Agriculture	NA
National Health Act, 61 of 2003 [NHA]	Department of Health	NA
Constitution of the Republic of South Africa, 1996	-	General application to individual rights of all on and adjacent to the sites.
Fencing Act, 31 of 1963	-	NA
National Building Regulations and Building Standards Act 103 of 1977 [NBRBSA] and relevant regulations	-	NA
National Veld and Forest Fire Act 101 of 1998 [NVFFA]	-	NA
Fertilizers, Farm Feeds, Agricultural Remedies And Stock Remedies Act, 36 Of 1947 [FFFARSRA] and Relevant Regulations	National Department of Agriculture, forestry and Fisheries Western Cape Department of Agriculture	NA

4. Protocols

Explain how the proposed activity or development complies with the requirements of the protocols referred to in the NOI and/or application form
The protocol (Published in Government Notice No. 648 GOVERNMENT GAZETTE 45421 10 MAY 2019). This gazette is also available free online at www.gpwonline.co.za) provides the criteria for the reporting of requirements for the assessment and reporting of impacts as identified in the DEA Screening tool report. A screening report has been compiled and the requirements addressed – Refer to Appendix I

As per the Site Sensitivity Verification Report (Appendix I) see below the EAP and/or specialist findings that either Confirms or Disputes the Environmental Sensitivity as Identified by the DEA Screening Tool:

THEME	DEA SCREENING REPORT SENSITIVITY	EAP AND/OR SPECIALIST RECOMMENDED LEVEL OF SENSITIVITY	EAP AND/OR SPECILIAST MOTIVATION
Agriculture	Medium	No sensitivity	The proposed development is located within a declared national park, no agricultural practices is allowed within the park hence there is no agricultural sensitivity to the site.
Animal Species	High	High (agree with DEA Screening Report Sensitivity)	The area where the swimming pool and additional picnic facilities are proposed is already within and around the existing picnic site and the footprint is minimal therefore it

			is not expected to have any significant negative impacts on existing animal species of the park. However species of conservation concern such as Bontebok are within the park therefore the sensitivity is agreed to as High. Animal Impact Assessment done.
Aquatic Biodiversity	Low	Low sensitivity (agree with DEA Screening Report Sensitivity)	The proposed site is located outside of the 1:100 year floodline of the Breerivier and not within any wetland areas. However, given the site's proximity to a Breede river and a non-perennial drainage line and the proposal to discharge sewage and pool backwash water into a soakaway system an aquatic impact assessment was conducted.
Archaeological and Cultural Heritage	Very High	Low sensitivity	No sensitive archaeological or palaeontological resources known to occur within the immediate area and no sensitive heritage resources to be negatively impacted upon by the proposed development. According to heritage specialist appointed no impact on important archaeological resources is anticipated. HIA was done.
Civil Aviation	High	No sensitivity	The proposed swimming pool and picnic facilities will not have any negative impacts on civil aviation within the area.
Defence	Low	No sensitivity	The swimming pool and picnic facilities will not have any negative impacts on defence features within the area.
Palaeontology Theme	Medium	Low sensitivity	No sensitive archaeological or palaeontological resources known to occur within the immediate area and no sensitive heritage resources to be negatively impacted upon by the proposed development. According to heritage specialist appointed no impact on important palaeontological resources is anticipated. HIA was done.
Plant Species	Medium	Medium sensitivity (agree with DEA Screening Report Sensitivity)	The proposed development will only lead to permanent clearance of ± 0.2 ha of indigenous vegetation, which is not significant in comparison to the remaining undisturbed similar indigenous vegetation areas within the Bontebok National Park. However the proposed development is located within a Protected Area with Endangered vegetation type mapped for the area Plant species impact assessment was done.
Terrestrial Biodiversity	Very High	Very High sensitivity (agree with DEA Screening Report Sensitivity)	The area where the swimming pool and additional picnic facilities are proposed is already within and around the existing picnic site and the footprint is minimal therefore it is not expected to have any significant negative impacts on existing animal and/or plant species of the park. However the proposed development is located within a Protected Area with Endangered vegetation type mapped for the area, Terrestrial Impact Assessment was done.

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— (ii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs— (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse	Development of 240m ² proposed parking areas within 32m of a non-perennial drainage line.
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.
12	The clearance of an area of 300 square metres or more of indigenous vegetation (i) Western Cape (i) Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;	Clearance of 0.2ha of indigenous vegetation of Endangered – Swellendam Silcrete Fynbos
14	The development of— (ii) infrastructure or structures with a physical footprint of 10 square metres or more; where such development occurs— (c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse; (i) Western Cape (i) Outside urban areas: (aa) A protected area identified in terms of NEMPAA, excluding conservancies; (cc) World Heritage Sites;	Development of 240m ² proposed parking areas within 32m of a non-perennial drainage line, within the Bontebok National Park (Grade II Heritage site)
<p>Note:</p> <ul style="list-style-type: none"> 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.
NA		

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.
NA		

SECTION E: PLANNING CONTEXT AND NEED AND DESIRABILITY

1.	Provide a description of the preferred alternative.
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The proposed swimming pool, recreational facilities and associated infrastructure at Die Stroom Picnic Site in the Bontebok National Park, Swellendam will include the following:

- Pool Backwash tank slab = 15m² for 5000liter JoJo
- Septic tank and Pump chamber = 40m²
- Pool pump room = 40m²
- Ablutions/Shower/Change Area = 105m²
- Swimming Pool = 315m²
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- Soak-away = 150m² (15m x 10m)
- 2 x Biofilters = 64m² (4m x 8m each)

Construction footprint = 0.44ha

Construction laydown areas are to be located within the existing parking areas at Die Stroom Picnic site, no areas outside of the proposed development footprint area may be cleared or used for construction laydown or stockpiling areas.

Proposed development will lead to the permanent clearance of ±0.2ha of indigenous vegetation.

The final development footprint for the developments as described above = ± 0.28Ha

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?
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The proposed development site falls within the Bontebok National park zoned conservation/protected area. In accordance with the parks management plan the proposed development site is located within an area mapped as Medium to Low sensitivity within the Low Intensity Leisure park use zone. The conservation objective of this zone is to maintain the zone in a largely natural state that is in keeping with the character of a Protected Area, mitigate the biodiversity impacts of the relatively high levels of tourism activity and infrastructure that are accommodated within this zone through careful planning and active management, and to ensure that both the negative effects of the activities and infrastructure are restricted to the zone. In keeping with the objectives of the Low Intensity Leisure Zone within which the proposed developments falls, the footprint of the proposed developments have been kept to a minimum with placement thereof as far as possible on already disturbed and transformed areas as part of the existing Die Stroom picnic site and placing additional proposed infrastructure such as pipelines and power cables along existing infrastructure routes.

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.
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There are no conflicting existing approvals for the proposed site.

4.	Explain how the proposed development will be in line with the following?
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4.1	The Provincial Spatial Development Framework.
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Expansion of existing picnic facilities within the Bontebok National Park in line with park management objectives and planning.

4.2	The Integrated Development Plan of the local municipality.
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Expansion of existing picnic facilities within the Bontebok National Park in line with park management objectives and planning.

4.3.	The Spatial Development Framework of the local municipality.
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Expansion of existing picnic facilities within the Bontebok National Park in line with park management objectives and planning.

4.4.	The Environmental Management Framework applicable to the area.
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No EMF adopted by the Department for the applicable area.

5.	Explain how comments from the relevant authorities and/or specialist(s) with respect to biodiversity have influenced the proposed development.
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The development as proposed will be located on an area which has been classified by the biodiversity specialist of medium sensitivity. Should development occur in line with specialist recommendations it is not expected that the proposed picnic site expansions and associated

	developments will have any unacceptable significant negative biodiversity impacts. Refer to specialists' assessments under Appendix G for further information on potential biodiversity impacts assessed.
6.	Explain how the Western Cape Biodiversity Spatial Plan (including the guidelines in the handbook) has influenced the proposed development.
	The proposed development site falls within the Bontebok National park zoned conservation/protected area. In accordance with the parks management plan the proposed development site is located within an area mapped as Medium to Low sensitivity within the Low Intensity Leisure park use zone. The conservation objective of this zone is to maintain the zone in a largely natural state that is in keeping with the character of a Protected Area, mitigate the biodiversity impacts of the relatively high levels of tourism activity and infrastructure that are accommodated within this zone through careful planning and active management, and to ensure that both the negative effects of the activities and infrastructure are restricted to the zone. In keeping with the objectives of the Low Intensity Leisure Zone within which the proposed developments falls, the footprint of the proposed developments have been kept to a minimum with placement thereof as far as possible on already disturbed and transformed areas as part of the existing Die Stroom picnic site and placing additional proposed infrastructure such as pipelines and power cables along existing infrastructure routes.
7.	Explain how the proposed development is in line with the intention/purpose of the relevant zones as defined in the ICMA.
	The development is not proposed within any high risk coastal management zones.
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.
	The screening report has not changed.
9.	Explain how the proposed development will optimise vacant land available within an urban area.
	Not applicable.
10.	Explain how the proposed development will optimise the use of existing resources and infrastructure.
	The proposed development has been designed to link in with the existing services infrastructure i.e. sewer, water, cable line routes and parking areas at Die Stroom picnic site as far as possible and no new road infrastructure will have to be developed to accommodate the proposed developments.
11.	Explain whether the necessary services are available and whether the local authority has confirmed sufficient, spare, unallocated service capacity. (
	Services infrastructure i.e. water and electricity connection points already exists at the Die Stroom picnic site. Sewage will be handled on site via an additional proposed soakaway system to link in with the existing soakaway system at the site and domestic waste will be disposed of at the municipal landfill site as per current practices.
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.
	Refer to Appendix K1 for detailed Need and Desirability motivation.
	The aim of the proposed swimming pool and picnic area upgrade next to the Breede River known as "Die Stroom" is to enhance the experience of the local community and visitors use to visiting the site and providing more safe conditions for swimming etc. It is also proposed to provide much needed additional public ablution facilities, additional parking areas and formal picnic areas to prevent the public from impacting on the surrounding natural vegetation areas like parking within natural areas because there are currently not enough formal facilities provided at the popular picnic spot, hence potentially decreasing terrestrial biodiversity impacts due to uncontrolled human activities in the long term.
	The proposed development footprint is to be kept on already disturbed areas as far as possible so as to keep impacts on natural vegetation, animal and birdlife as small as possible.

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.

Not applicable

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

Yes, PPP as per the application will be followed. Proof of all PPP to be conducted will be available under Appendix F of the Final BAR.

All registered interested and affected parties will be provided with the opportunity to comment on the basic assessment report.

The Park has a functioning Park Forum which consists of and acts on behalf of the neighbouring landowners, municipality and communities.

- Members of the Park Forum will be notified of the development and Draft BAR for comments via email notification and internal meetings held.
- Hard copies of notices indicating the availability of the Draft BAR for comments will be placed at the Park Reception building and local municipality offices. The notice will include a summary comprehensive enough to make it possible for the Interested and Affected Parties to form a fair idea of the project proposed for commenting purposes.
- The Draft Basic Assessment Report will be internally uploaded onto the SANParks website and will also be uploaded to the EAPs website for a 30 day commenting period.

The following key departments and organs of state will also be informed via email notification of the availability of the Draft Basic Assessment Report for a 30 day commenting period.

- Heritage Western Cape
- Swellendam Local Municipality
- Overberg District Municipality
- Breede Olifants Catchment Management Agency
- Cape Nature
- DEA&DP: Development Management
- DEA&DP: Pollution & Chemicals Management
- DEA&DP: Waste Management
- DEA&DP: Biodiversity and Coastal Management
- DFFE: Biodiversity and Conservation
- DFFE: Protected Areas Multilateral Programmes
- DFFE: Protected Areas Planning and Management Effectiveness
- South African Heritage Resources Agency
- SANParks Cultural Heritage Management
- IUCN World Heritage Committee

Methods used to notify each organ of state, key department and registered I&AP as well as proof thereof will be recorded and included as part of the Final BAR submitted for decision.

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

All of the State Departments and Organs of State indicated in the application form was notified of the opportunity to comment on the proposal. Evidence thereof provided in Appendix F of the BAR.

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

To be indicated in the Final Basic Assessment Report

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

To be indicated in the Final Basic Assessment Report

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.

Refer to comments and response table under Appendix F of the BAR.

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 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.

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.		
NA			
1.3.	Indicate above which aquifer your proposed development will be located and explain how this has influenced your proposed development.		
Development is not proposed above any primary aquifer or groundwater resources.			
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.		
Not applicable.			

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.		
Aquatic Impact Assessment done by Nicolaas Hanekom from Enviro-EAP in accordance with the protocols published in Government Notice No. 320 GOVERNMENT GAZETTE 431 10, 20 March 2020. This gazette is also available free online at www.gpwonline.co.za			
2.3.	Explain how the presence of watercourse(s) and/or wetlands on the property(ies) has influenced your proposed development.		
None of the proposed developments have been placed on or will have any physical impacts on existing watercourses on/near the site such as the Breerivier tributary (development will be outside of the 1:100 year floodline area) and the main course and hydrological functioning of the non-perennial drainage line crossing the picnic site is to remain as is.			

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.		
Not applicable			
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.		
Not applicable			
3.4.	Explain how estuary management plans (if applicable) has influenced the proposed development.		
-	Not applicable		
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.		

	Not applicable
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4. Biodiversity

4.1.	Were specialist studies conducted?	YES	NO
4.2.	Provide the name and/or company who conducted the specialist studies.		
A Terrestrial Biodiversity Impact Assessment was conducted by Nicolaas Hanekom from Enviro-EAP in accordance with the protocols published in Government Notice No. 320 GOVERNMENT GAZETTE 43110, 20 March 2020.			
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.		
<p>Cape Farm Mapper was used to identify mapped Protected areas, NFEPA, CBA or ESA areas. The Bontebok National Park management plan was also used to inform the proposed development taking into consideration conservation objectives of the relevant site within the park.</p> <p>Bontebok National Park is a Protected Area and in accordance with the parks management plan the proposed development site is located within an area mapped as Medium to Low sensitivity within the Low Intensity Leisure park use zone.</p> <p>Low Intensity Leisure Zone:</p> <ul style="list-style-type: none"> • <i>Characteristics:</i> The underlying characteristic of this zone is motorized self-drive access with basic facilities. The numbers of visitors are higher than in the Remote and Primitive zones. Relatively comfortable facilities are positioned in the landscape retaining the inherent natural and visual quality which enhances the visitor experience of a more natural and self providing experience. Access roads are low key, preferably gravel roads and/or tracks to provide a more wild experience. Facilities along roads are limited to picnic sites with toilet facilities. • <i>Conservation objectives of the zone:</i> The conservation objective is to maintain the zone in a largely natural state that is in keeping with the character of a Protected Area, mitigate the biodiversity impacts of the relatively high levels of tourism activity and infrastructure that are accommodated within this zone through careful planning and active management, and to ensure that both the negative effects of the activities and infrastructure are restricted to the zone. The zone should be managed within the following specific objectives: • <i>Biophysical environment objectives:</i> The zone should be kept in a largely natural state. Deviation from a natural/pristine state should be minimized and limited to restricted impact footprints as far as possible. However, it is accepted that some damage to the biophysical environment associated with tourist activities and facilities will be inevitable. • <i>Aesthetics and recreational environment objectives:</i> The zone should be maintained in a largely natural state from an aesthetics point of view. Although it is inevitable that activities and facilities will impact on the wild appearance and reduce the wilderness characteristics of the area (solitude, remoteness, wildness etc), these should be managed and limited to ensure that the area still provides a relatively natural outdoor experience. • <i>Facilities:</i> Picnic sites, view sites, information centres, ablution facilities, parking areas, education centres etc. Small (including camping) camps of low to medium density 25-35 beds. Additional facilities can include swimming pools. Trails for 4x4 vehicles can also be provided. Day visitor site are not placed within the camps. • <i>Location in Park:</i> Low intensity leisure areas were designated around a rationalized road network for game viewing, along a proposed linkage to a new entrance along the N2 highway (including the gateway precinct), along the park's boundary with urban and industrial areas to the north, the actively used section of the Breede River from Die Stroom to Aloe Hill containing most visitor facilities including the rest camp, and around the current administrative complex. Where possible environmentally sensitive areas like the eastern renosterveld lowlands and vleis, the central plains 			

and hills, and the hydrographically sensitive "Ou Reisiesbaan" basin were excluded from this zone.

In keeping with the objectives of the Low Intensity Leisure Zone within which the proposed developments falls, the footprint of the proposed developments have been kept to a minimum with placement thereof as far as possible on already disturbed and transformed areas as part of the existing Die Stroom picnic site and placing additional proposed infrastructure such as pipelines and power cables along existing infrastructure routes.

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.

The proposed development area has been mapped as part of a larger Other Natural Area.

Definition for Other Natural Area: Areas not currently identified as a priority but retain most of their natural character and perform a range of biodiversity and ecological infrastructure functions. Although not prioritised, they are still an important part of the natural ecosystem.

Objective: Minimize habitat and species loss and ensure ecosystem functionality through strategic landscape planning. Offers flexibility in permissible land-uses, but some authorisation may still be required for high-impact land-uses.

The proposed development will not lead to high biodiversity impact and will not prevent ongoing ecosystem functionality of surrounding similar undeveloped natural areas provided that the proposed specialist recommendations are implemented.

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.

Refer to 4.3 above. The development has been planned for and designed by SANParks management in line with the Bontebok National Park Management plan objectives and planning for the relevant picnic site which falls within the Low Intensity Leisure Zone of the park.

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.

Refer to 4.3 above. The development has been planned for and designed by SANParks management in line with the Bontebok National Park Management plan objectives and planning for the relevant picnic site which falls within the Low Intensity Leisure Zone of the park.

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

The indigenous vegetation type occurring on the site and surrounds is listed as Endangered Swellendam Silcrete Fynbos according to the NEMBA (10/2004): National list of ecosystems that are threatened and in need of protection (as amended 18/11/2022). The remaining indigenous vegetation on the site which has not been disturbed due to previous developments such as roads, parking and pipelines associated with the existing picnic site is in a good condition in terms of diversity and very limited alien vegetation encroachments. This vegetation type is the main indigenous vegetation type represented in the park. Overall, the park also supports fauna and avifauna species of conservation concern of particular interest is the Bontebok which roams freely in the park. In accordance with the parks management plan the proposed development site is also located within an area mapped as Medium to Low sensitivity within the **Low Intensity Leisure Park Use Zone**. Therefore, in line with the sensitivity mapping of the Bontebok National Park management plan the proposed development areas within and around the Die Stroom picnic site is to be classified of **Medium to Low Terrestrial Biodiversity Sensitivity**.

In keeping with the objectives of the Low Intensity Leisure Zone within which the proposed developments falls, the footprint of the proposed developments have been kept to a minimum with placement thereof as far as possible on already disturbed and transformed areas as part of the existing Die Stroom picnic site and placing additional proposed infrastructure such as pipelines and power cables along existing infrastructure routes.

Expected terrestrial biodiversity impacts of the proposed development can be summarised as below and will include:

- A total area of ±0.44ha will be impacted upon/cleared during the initial construction phase, however only ±0.2ha of indigenous vegetation will remain permanently cleared once the development has been completed and disturbed areas such as pipelines have rehabilitated with natural vegetation. Therefore, the permanent loss of ±0.2ha of indigenous habitat as part of Endangered Swellendam Silcrete Fynbos has been assessed and allocated a significance rating of low negative after mitigation.
- No negative impacts on any plant species of conservation concern are expected to occur during the construction phase as none of these species were recorded on the proposed development site during the time of the surveys and none are expected to occur on the particular sites. Therefore, the potential construction impacts on plant species of conservation concern have been assessed and allocated a significant rating of low negative after mitigation.
- Construction activities will impact on 0.44ha indigenous fauna and avifauna habitat associated with Endangered – Swellendam Silcrete Fynbos as part of a mapped Protected Area, however only ±0.2ha of indigenous vegetation habitat will remain permanently cleared once the development has been completed and disturbed areas such as pipelines have rehabilitated with natural vegetation. Therefore, the permanent loss of ±0.2ha of indigenous fauna and avifauna habitat as part of Endangered Swellendam Silcrete Fynbos has been assessed and allocated a significance rating of low negative after mitigation.
- No significant negative impacts on any fauna and avifauna species of conservation concern are expected to occur during the construction phase and none are expected to breed on the particular development sites as the site is already used by the public on a regular basis as a picnic site. Therefore, the potential construction impacts on fauna and avifauna species of conservation concern have been assessed and allocated a significance rating of low negative after mitigation.
- With proper maintenance and management measures implemented by the park management during the operational phase of the proposed developments it is not expected that the additional facilities and activities proposed at the Die Stroom picnic site will have a significant negative impact on remaining indigenous vegetation and existing fauna and avifauna within the applicable area. Therefore, the potential operational impacts on the terrestrial biodiversity features of the site and surrounds have been assessed and allocated a significance rating of low negative after mitigation.

Provided that the mitigation measures to reduce the significance of the potential environmental impacts of the activities as provided in the specialists reports are implemented the activities are not likely to result in long-term degradation of the receiving terrestrial biodiversity environment or significant net loss thereof.

5. Geographical Aspects

Explain whether any geographical aspects will be affected and how has this influenced the proposed activity or development.

Soil – Glenrosa and/or Mispah forms (other soils may occur), lime rare or absent in upland soils but generally present in low-lying soils

Geology – Shale, siltstone and subordinate sandstone of the Bokkeveld and Witteberg Groups, occasionally covered by various surficial deposits

Source: Soils & Geology (ENPAT – Cape Farm Mapper 20/08/2022)

The topography of the overall proposed development site slopes from northwest to southeast towards the Breerivier tributary, with an elevation of between 67m to 55m above mean sea level.

It is not expected that the proposed development will impact on any unique or sensitive geographical aspects.

6. Heritage Resources

6.1.	Was a specialist study conducted?	YES	NO
6.2.	Provide the name and/or company who conducted the specialist study.		
Heritage Impact Assessment as done by Johathan Kaplan from ACRM dated August 2024 Palaeontological Impact Assessment as done by Prof Marion Bamford dated July 2024			
6.3.	Explain how areas that contain sensitive heritage resources have influenced the proposed development.		
<p>The aim of the proposed swimming pool and picnic area upgrade next to the Breede River known as "Die Stroom" is to enhance the experience of the local community and visitors use to visiting the site and providing more safe conditions for swimming etc. It is also proposed to provide much needed additional public ablution facilities, additional parking areas and formal picnic areas to prevent the public from impacting on the surrounding natural vegetation areas by parking within natural areas etc. because there are currently not enough formal facilities provided at the popular picnic spot.</p> <p>The proposed development footprint is to be kept on already disturbed areas as far as possible so as to keep impacts on natural vegetation etc. as small as possible.</p> <p>Hence the overall impacts on the heritage resources (Bontebok National Park and its natural features as a Grade II Heritage Site) is expected to have a positive impact with no unacceptable significant negative heritage impacts expected as it will also promote more tourism to the park bringing in more funds to ensure the ongoing successful management of the park.</p> <p><u>Heritage Impact Assessment Findings:</u></p> <p>Archaeology</p> <p>A field assessment of the Project Area was conducted by ACRM on the 3rd August 2024. The following heritage resources were recorded.</p> <ul style="list-style-type: none"> > An Early Stone Age prepared (or Levallois) core, a Middle Stone Age flake and a cortex chunk (all in locally available quartzite) were recorded during the field assessment, but no evidence of any pre-colonial human occupation or settlement was encountered. > A discontinuous line of sandstone rock measuring ± 120m long was recorded in a disturbed section through the veld where the proposed new soakaway pipelines will be laid alongside the existing soakaway pipeline. No evidence of any kraal, or structure was found. No cultural remains were found, either. The 'feature' will not be impacted by the proposed new pipeline. <p>No impact on important archaeological resources is anticipated.</p> <p>Grading</p> <p>The very small number means that the archaeological resources have been graded as Not Conservation Worthy (NCW). The stone 'feature' has also been graded NCW.</p> <p>Palaeontology</p> <p>According to consulting palaeontologist, Marion Bamford (2024), the study site lies on Quaternary river terrace gravels of unknown palaeosensitivity. These sediments have been reworked and redeposited by the river action in the past and so their origin and context are unknown. The main group presented is the Bredasdorp Group, but according to Bamford (2024), it is not always possible to distinguish the formations, hence the sands along the Brede River are indicated as 'undifferentiated sand, loam or sandy loam'. Bamford (2024) notes that marine and terrestrial invertebrate shells of different species occur in the different formations of the Bredasdorp Group, but along the naturally disturbed rivers the high energy flow and flooding mixes the sediments and fragments, of any fossils within.</p> <p>According to Bamford (2024), 'it is (therefore) very unlikely that any intact fossil occurs in the river terrace gravels along the Breede River'. Hence, the palaeosensitivity of the study site is indicated as unknown (white) on the SAHRIS palaeosensitivity map. Furthermore, 'If any fossils have been eroded, transported and deposited along the Brede River, they would be very fragmented and of limited scientific value' (Bamford 2024:2).</p>			

According to Bamford (2024:13), `...there is an extremely small chance that fossils from inland may have washed down the river and been buried on the terraces...' (Therefore), `the potential impact to fossil heritage resources is extremely low'.

Built Environment

Apart from the existing infrastructure at Die Stroom Picnic Site, there are no old buildings, structures or ruins in the Project area.

Graves

No graves or typical grave features such as stone cairns were encountered during the field assessment.

Cultural Landscape

Bontebok National Park was established in 1931 with the main focus being protecting the near-extinct Bontebok. It is the smallest of South Africa's 19 National Parks, covering an area of 27.86 km². The Park is part of the Cape Floristic Region, which is a World Heritage Site.

Conclusion

The specialist study has identified no significant impact to Stone Age archaeological resources that will need to be, mitigated prior to construction excavations commencing. According to Bamford (2024), `no further palaeontological impact assessment is required'.

Recommendations

Archaeology - No further mitigation is required. No monitoring is required during construction phase excavations. If any buried human remains are uncovered during construction excavations, these must be immediately reported to the archaeologist (J Kaplan 0823210172. Burials must not be disturbed until inspected by the archaeologist.

Palaeontology - The Fossil Chance Find Protocol should be added to the EMP (Bamford 2024).

The above recommendations must be included in the Environmental Management Plan for the project, and must be monitored by the Environmental Control Office

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.

The aim of the proposed swimming pool and picnic area upgrade next to the Breede River known as "Die Stroom" is to enhance the experience of the local community and visitors use to visiting the site and providing more safe conditions for swimming etc. It is also proposed to provide much needed additional public ablution facilities, additional parking areas and formal picnic areas to prevent the public from impacting on the surrounding natural vegetation areas by parking within natural areas etc. because there are currently not enough formal facilities provided at the popular picnic spot.

The proposed development footprint is to be kept on already disturbed areas as far as possible so as to keep impacts on natural vegetation etc. as small as possible.

Hence the overall impacts on the heritage resources (Bontebok National Park and its natural features as a Grade II Heritage Site) is expected to have a positive impact with no unacceptable significant negative heritage impacts expected as it will also promote more tourism to the park bringing in more funds to ensure the ongoing successful management of the park.

8. Socio/Economic Aspects

8.1.	Describe the existing social and economic characteristics of the community in the vicinity of the proposed site.
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Bontebok National Park was established in 1931 with the main focus around conserving the near-extinct bontebok (<i>Damaliscus pygargus</i> spp. <i>pygargus</i>). It is the smallest of South Africa's 19 National Parks, covering an area of 27.86 km ² The park is part of the Cape Floristic Region, which is a World Heritage Site.	
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Communal land from Swellendam Municipality and privately owned farms, including "Die Stroom", was acquired thus formally proclaiming Bontebok National Park in 1961. The mission of the Park is not only to conserve rare and threatened species found in the Park but also to provide tourism and recreational opportunities, and facilitate socio-economic benefits to surrounding communities. Local communities frequent Die Stroom Picnic Site for recreational purposes, including to swim in the perennial Breede River which borders the site. As per the agreement between the Municipality and SANParks, the local community would still have access to Die Stroom for recreational purposes. Subsequent to the proclamation of the Consumer Protection Act (CPA), SANParks Risk Management deemed the Breede River to be unsafe for various reasons, including water quality, clarity, depth and hazardous rubble found on the river bed, the lack of lifeguards on duty and possible attacks by Zambezi (bull) sharks, which have been documented as dwellers of the Breede River. SANParks has therefore cited "swim at own risk" for the afore-mentioned reasons at the relevant picnic site. As the Breede River is traditionally utilised by the local communities for swimming, SANParks would like to provide visitors with a safe swimming environment. The proposed development will offer day visitors an enclosed swimming pool with dedicated ablutions including male and female shower facilities and toilets. The proposed development will also ensure privacy to Die Stroom Function Venue chartered to visitors at an extra cost to visitors.

8.2. Explain the socio-economic value/contribution of the proposed development.

Communal land from Swellendam Municipality and privately owned farms, including "Die Stroom", was acquired thus formally proclaiming Bontebok National Park in 1961. The mission of the Park is not only to conserve rare and threatened species found in the Park but also to provide tourism and recreational opportunities, and facilitate socio-economic benefits to surrounding communities. Local communities frequent Die Stroom Picnic Site for recreational purposes, including to swim in the perennial Breede River which borders the site. As per the agreement between the Municipality and SANParks, the local community would still have access to Die Stroom for recreational purposes. Subsequent to the proclamation of the Consumer Protection Act (CPA), SANParks Risk Management deemed the Breede River to be unsafe for various reasons, including water quality, clarity, depth and hazardous rubble found on the river bed, the lack of lifeguards on duty and possible attacks by Zambezi (bull) sharks, which have been documented as dwellers of the Breede River. SANParks has therefore cited "swim at own risk" for the afore-mentioned reasons at the relevant picnic site. As the Breede River is traditionally utilised by the local communities for swimming, SANParks would like to provide visitors with a safe swimming environment. The proposed development will offer day visitors an enclosed swimming pool with dedicated ablutions including male and female shower facilities and toilets. The proposed development will also ensure privacy to Die Stroom Function Venue chartered to visitors at an extra cost to visitors.

8.3. Explain what social initiatives will be implemented by applicant to address the needs of the community and to uplift the area.

Refer to 8.2 above.

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.

It is not expected that the proposed expansion will have any significant negative impacts on people's health in terms of noise, odours or visual characteristics. The site is located within the Bontebok National Park at an existing picnic area which is already managed by the park management to minimise noise, odours and visual impacts. Construction and operational phases will be managed in line with the requirements of the environmental management plan which contains mitigation measures to manage potential noise, odours and visual impacts of the development.

9. Protected Area Aspects and Alignment to Objectives of the Park Management Plan

9.1 Describe relevance of Protected Areas and how this was taken into consideration during the planning and assessment of the proposed development.

The footprint of the proposed development is mapped as Protected Area in the Western Cape Biodiversity Spatial Plan, , as it is located within the Bontebok National Park. The "Die Stroom" picnic site is located on the banks of the Breede River with a minor non-perennial tributary traversing the existing picnic area and proposed development area. The vegetation type mapped for the proposed development site is Swellendam Silcrete Fynbos, and with Cape Lowland Alluvial Vegetation mapped adjacent along the banks of the Breede River, both of which are listed as Endangered.

The desired management objective for Protected Areas is: “Must be kept in a natural state, with a management plan focused on maintaining or improving the state of biodiversity. A benchmark for biodiversity” (CapeNature 2024) The general guidelines for Protected Areas include inter alia:

- The management plan must identify allowable activities, which should be consistent at least with the CBA 1 category; the location of these allowable activities should be captured in a zonation plan in the management plan.
- Activities relating to the construction of roads, administrative or tourism infrastructure and services (such as water reticulation systems, power lines, etc.) that are required to support the primary function of the protected area and its allowable activities, are subject to NEMA authorisation and the protected area management plan.

The specific guidelines state “implementation of the protected area management plan”.

The management plan of a protected area is the guideline which informs permissible development within a National Environmental Management: Protected Areas Act (NEM:PAA) protected area. Decision making on National Environmental Management Act (NEMA) applications are guided by the management plan. Section 19(1)(a) of the Regulations for the Proper Administration of Special Nature Reserves, National Parks and World Heritage Sites states that no development contemplated in section 50(5) of the Act shall be implemented in any area other than an area specifically designated for such development in a management plan.

The Bontebok National Park Management Plan (2013 – 2023) refers to a day visitor facility and picnic area in the concept development plan for development within the timeframes of the plan and is included in the associated map (SANParks 2013). The location is within the low intensity leisure zone. The development proposal can therefore be considered to be aligned to the management plan.

In keeping with the objectives of the Low Intensity Leisure Zone within which the proposed developments falls, the footprint of the proposed developments have been kept to a minimum with placement thereof as far as possible on already disturbed and transformed areas as part of the existing Die Stroom picnic site and placing additional proposed infrastructure such as pipelines and power cables along existing infrastructure routes.

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 sites alternative.	
The proposed development site is at Die Stroom picnic site within the Bontebok National Park.	
Provide a description of any other property and site alternatives investigated.	
Due to the location of the existing Die Stroom picnic site within the Bontebok National Park and the need for the proposed developments identified at this specific site there are no other reasonable or feasible property or site alternatives to assess other than what is proposed.	
Provide a motivation for the preferred property and site alternative including the outcome of the site selectin matrix.	
Due to the location of the existing Die Stroom picnic site within the Bontebok National Park and the need for the proposed developments identified at this specific site there are no other reasonable or feasible property or site alternatives to assess other than what is proposed.	
Provide a full description of the process followed to reach the preferred alternative within the site.	
The EAP and specialists assessed the significance of potential impacts associated with each reasonable and feasible alternative available and the alternative with the least potential negative environmental impacts was deemed the preferred alternative.	
Provide a detailed motivation if no property and site alternatives were considered.	
Due to the location of the existing Die Stroom picnic site within the Bontebok National Park and the need for the proposed developments identified at this specific site there are no other reasonable or feasible property or site alternatives to assess other than what is proposed.	
List the positive and negative impacts that the property and site alternatives will have on the environment.	

Refer to Section H4 below for a list of all the positive and negative impacts assessed.	
1.2.	Activity alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.
Provide a description of the preferred activity alternative.	
<p>The only activity alternative considered is the proposed swimming pool, recreational facilities and associated infrastructure at Die Stroom Picnic Site in the Bontebok National Park which will include the following:</p> <ul style="list-style-type: none"> • Pool Backwash tank slab = 15m² for 5000liter JoJo • Septic tank and Pump chamber = 40m² • Pool pump room = 40m² • Ablutions/Shower/Change Area = 105m² • Swimming Pool = 315m² • Terrace less Pool = 1115m² • Fence = 210m long and 1.5m high • Physically Disabled Ramp =80m² • Parking = 240m² • Underground electrical cable = 110m long (Area measured in sewer trench calculation) • Sewer line /Soak-away = 260m long (Area = 390m²) • Pool back-wash and soak-away = 260m long (Area measured in sewer trench calculation) • Water supply line = 25m long (Area 25m²) (Balance of area measured in sewer trench calculation) • Soak-away = 150m² (15m x 10m) • 2 x Biofilters = 64m² (4m x 8m each) <p>Construction footprint = 0.44ha Proposed development will lead to the permanent clearance of ±0.2ha of indigenous vegetation. The final development footprint for the developments as described above = ± 0.28Ha</p>	
Provide a description of any other activity alternatives investigated.	
No other reasonable or feasible activity alternatives exists as the reason for the proposed development is to expand the existing picnic facilities in accordance with the recreational needs that exists at the specific site as identified by park management.	
Provide a motivation for the preferred activity alternative.	
As far as possible the proposed development has been placed on already cleared and impacted areas and along existing roads and pipeline routes to minimise impacts on the natural environment and indigenous vegetation. The proposed development is also to be located behind the existing picnic area, outside of the 1:100 year floodline area of the Breerivier.	
Provide a detailed motivation if no activity alternatives exist.	
No other reasonable or feasible activity alternatives exists as the reason for the proposed development is to expand the existing picnic facilities in accordance with the recreational needs that exists at the specific site as identified by park management.	
List the positive and negative impacts that the activity alternatives will have on the environment.	
Refer to Section H4 below for a list of all the positive and negative impacts assessed.	
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.	
<p>The only activity alternative considered is the proposed swimming pool, recreational facilities and associated infrastructure at Die Stroom Picnic Site in the Bontebok National Park which will include the following:</p> <ul style="list-style-type: none"> • Pool Backwash tank slab = 15m² for 5000liter JoJo • Septic tank and Pump chamber = 40m² • Pool pump room = 40m² • Ablutions/Shower/Change Area = 105m² • Swimming Pool = 315m² • Terrace less Pool = 1115m² • Fence = 210m long and 1.5m high • Physically Disabled Ramp =80m² • Parking = 240m² • Underground electrical cable = 110m long (Area measured in sewer trench calculation) • Sewer line /Soak-away = 260m long (Area = 390m²) • Pool back-wash and soak-away = 260m long (Area measured in sewer trench calculation) 	

- Water supply line = 25m long (Area 25m²) (Balance of area measured in sewer trench calculation)
- Soak-away = 150m² (15m x 10m)
- 2 x Biofilters = 64m² (4m x 8m each)

Construction footprint = 0.44ha

Proposed development will lead to the permanent clearance of ±0.2ha of indigenous vegetation.

The final development footprint for the developments as described above = ± 0.28Ha

Provide a description of any other design or layout alternatives investigated.

The layout/design alternative as proposed is the only reasonable and feasible alternative assessed as it was designed in accordance with the roads, services infrastructure and picnic facilities which already exists at Die Stroom picnic site as well as what is still required and how it will link in to existing developments and infrastructure.

Provide a motivation for the preferred design or layout alternative.

As far as possible the proposed development has been placed on already cleared and impacted areas and along existing roads and pipeline routes to minimise impacts on the natural environment and indigenous vegetation. The proposed development is also to be located behind the existing picnic area, outside of the 1:100 year floodline area of the Breerivier.

Provide a detailed motivation if no design or layout alternatives exist.

The layout/design alternative as proposed is the only reasonable and feasible alternative assessed as it was designed in accordance with the roads, services infrastructure and picnic facilities which already exists at Die Stroom picnic site as well as what is still required and how it will link in to existing developments and infrastructure.

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

Refer to Section H4 below for a list of all the positive and negative impacts assessed.

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.
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Provide a description of the preferred technology alternative:

Technology to be used in the proposed development alternative will be similar to existing technology currently being used at the existing picnic facilities and must link in with existing facilities and infrastructure.

Technologies Alternative 1 (as per the preferred alternative) includes:

- Septic tank and Pump chamber = 40m²
- Pool back-wash and soak-away = 260m long
- Underground electrical cable = 110m long
- Soak-away = 150m² (15m x 10m)
- 2 x Biofilters = 64m² (4m x 8m each)

Also water and energy saving technologies to be installed as far as funding allows. The following energy/resources saving methods must be incorporated into the buildings and facilities as proposed where funding allows:

- All facilities to be provided with energy saving compact fluorescent lamps (CLF's).
- All electric geysers should be insulated with geyser blankets.
- All electric geyser thermostats should be set at the most optimal temperature.
- All fitted appliances should have an energy rating and the most efficient models must be considered.
- Energy efficient security/outdoor light technology should be used as far as possible to reduce the energy requirements of the outdoor light network.
- Rainwater harvesting from roofs and gutters must be implemented to collect and store rainwater runoff. This can be used to provide supplementary water which can be used as grey water or irrigation.
- Shower installations must be fitted with low-flow shower heads in school bathrooms.
- Geysers should be installed vertically to save electricity.
- Ensure that the maximum flow rate from hand wash basin tops does not exceed 6L per minute.
- Indoor traps must be fitted with aerators to increase the efficiency by redirecting the flow and amount of water used.
- Flush toilets must be fitted with dual or multi flush mechanisms to ensure that the amount of water required is controlled by the user.

<ul style="list-style-type: none"> o Solar electricity devices should be installed and made use of as far as possible i.e. solar geysers. 	
Provide a description of any other technology alternatives investigated.	
<p><i>Technology Alternative 2 includes:</i></p> <ul style="list-style-type: none"> • Installing a self-contained sewage treatment plant. <p>Technology Alternative 3 includes:</p> <ul style="list-style-type: none"> • Installing a conservancy tank which is serviced by the municipality. 	
Provide a motivation for the preferred technology alternative.	
<p>In terms of sewage management, a closed septic tank with pump is proposed at the new ablution facilities and swimming pool site. Sewage and all pool backwash water are to be pumped to the proposed additional soakaway which is to be placed adjacent to the existing soakaway currently used at the picnic site. Water and sewer pipelines and electrical cables are all proposed underground to be placed along existing routes and roads crossing the non-perennial drainage lines to ensure minimal impact on the environment.</p>	
Provide a detailed motivation if no alternatives exist.	
<p><i>Technology Alternative 2 includes:</i></p> <ul style="list-style-type: none"> • Installing a self-contained sewage treatment plant. <p><i>Reason/s why this alternative is not reasonable or feasible -</i> As stated by park management the alternative of a self-contained sewage treatment plant cannot be considered as a reasonable or feasible options because SANParks (the applicant and developer) does not have sufficient funds to firstly install a sewage treatment plant and secondly to appoint suitable trained staff to operate such a plant. The Bontebok National Park is not a high-income park and therefore does not have the budget for a recycling system. The staff at the park is also not qualified to manager such a system.</p> <p><i>Technology Alternative 3 includes:</i></p> <ul style="list-style-type: none"> • Installing a conservancy tank which is serviced by the municipality. <p><i>Reason/s why this alternative is not reasonable or feasible -</i> As stated by park management the alternative of a self-contained sewage treatment plant cannot be considered as a reasonable or feasible options because SANParks (the applicant and developer) does not have sufficient funds for municipal costs involved with conservancy tanks management. A conservancy tank for waste water to be collected by the municipality and disposed of at the municipal waste water treatment works is also costly and poses high risk of environmental pollution due to overflow if not property managed.</p>	
List the positive and negative impacts that the technology alternatives will have on the environment.	
Refer to Section H4 below for a list of all the positive and negative impacts assessed.	
1.5.	Operational alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.
Provide a description of the preferred operational alternative.	
<p>Only operational alternative considered was the maintenance and management associated with the proposed new swimming pool, ablution facilities and picnic site expansions and related infrastructure to be maintained by the park management after construction completion. Once operational, the only operational activities that will be undertaken are related to maintenance and upkeep of the development and associated infrastructure. These operations must also be done in accordance with the prescribed EMPr. Refer to Appendix H: EMPr for all proposed mitigation measures.</p>	
Provide a description of any other operational alternatives investigated.	
<p>Once operational, the only operational activities that will be undertaken are related to maintenance and upkeep of the development and associated infrastructure. These operations must also be done in accordance with the prescribed EMPr. Refer to Appendix H: EMPr for all proposed mitigation measures.</p>	
Provide a motivation for the preferred operational alternative.	
<p>Only operational alternative considered was the maintenance and management associated with the proposed new swimming pool, ablution facilities and picnic site expansions and related infrastructure to be maintained by the park management after construction completion. Once operational, the only operational activities that will be undertaken are related to maintenance and upkeep of the</p>	

development and associated infrastructure. These operations must also be done in accordance with the prescribed EMPr. Refer to Appendix H: EMPr for all proposed mitigation measures.

Provide a detailed motivation if no alternatives exist.

Once operational, the only operational activities that will be undertaken are related to maintenance and upkeep of the development and associated infrastructure. These operations must also be done in accordance with the prescribed EMPr. Refer to Appendix H: EMPr for all proposed mitigation measures.

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

Refer to Section H4 below for a list of all the positive and negative impacts assessed.

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.

If the proposed Die Stroom picnic site swimming pool, recreational facilities and infrastructure upgrades are not to proceed it is not expected that any significant detrimental impacts will occur in terms of the terrestrial features of the site and surrounds and processes will continue as is. However, the aim of the proposed swimming pool and picnic area upgrade next to the Breerivier is to enhance the experience of the local community and visitors use to visiting the site and provide safer conditions for swimming etc. It is also proposed to provide much needed additional public ablution facilities, additional parking areas and formal picnic areas to prevent the public from impacting on the surrounding natural vegetation areas like parking within natural areas because there are currently not enough formal facilities provided at the popular picnic spot, hence potentially decreasing terrestrial biodiversity impacts due to uncontrolled human activities in the long term.

1.7. Provide an 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.

NA

1.8. Provide a concluding statement indicating the preferred alternatives, including the preferred location of the activity.

PROPERTY AND SITE/LOCATION ALTERNATIVES ASSESSED:

Property Alternative - Due to the location of the existing Die Stroom picnic site within the Bontebok National Park and the need for the proposed developments identified at this specific site there are no other reasonable or feasible property or site alternatives to assess other than what is proposed.

ACTIVITY ALTERNATIVES ASSESSED:

Activity Alternative 1 – The only activity alternative considered is the proposed swimming pool, recreational facilities and associated infrastructure at Die Stroom Picnic Site in the Bontebok National Park which will include the following:

- Pool Backwash tank slab = 15m² for 5000liter JoJo
- Septic tank and Pump chamber = 40m²
- Pool pump room = 40m²
- Ablutions/Shower/Change Area = 105m²
- Swimming Pool = 315m²
- Terrace less Pool = 1115m²
- Fence = 210m long and 1.5m high
- Physically Disabled Ramp =80m²
- Parking = 240m²
- Underground electrical cable = 110m long (Area measured in sewer trench calculation)
- Sewer line /Soak-away = 260m long (Area = 390m²)
- Pool back-wash and soak-away = 260m long (Area measured in sewer trench calculation)
- Water supply line = 25m long (Area 25m²) (Balance of area measured in sewer trench calculation)
- Soak-away = 150m² (15m x 10m)
- 2 x Biofilters = 64m² (4m x 8m each)

Construction footprint = 0.44ha

Proposed development will lead to the permanent clearance of ±0.2ha of indigenous vegetation.

The final development footprint for the developments as described above = ± 0.28Ha

As far as possible the proposed development has been placed on already cleared and impacted areas and along existing roads and pipeline routes to minimise impacts on the natural environment and indigenous vegetation. The proposed development is also to be located behind the existing picnic area, outside of the 1:100 year floodline area of the Breerivier.

No other reasonable or feasible activity alternatives exists as the reason for the proposed development is to expand the existing picnic facilities in accordance with the recreational needs that exists at the specific site as identified by park management.

LAYOUT ALTERNATIVES ASSESSED:

Layout Alternative 1 – The only activity alternative considered is the proposed swimming pool, recreational facilities and associated infrastructure at Die Stroom Picnic Site in the Bontebok National Park which will include the following:

- Pool Backwash tank slab = 15m² for 5000liter JoJo
- Septic tank and Pump chamber = 40m²
- Pool pump room = 40m²
- Ablutions/Shower/Change Area = 105m²
- Swimming Pool = 315m²
- Terrace less Pool = 1115m²
- Fence = 210m long and 1.5m high
- Physically Disabled Ramp =80m²
- Parking = 240m²
- Underground electrical cable = 110m long (Area measured in sewer trench calculation)
- Sewer line /Soak-away = 260m long (Area = 390m²)
- Pool back-wash and soak-away = 260m long (Area measured in sewer trench calculation)
- Water supply line = 25m long (Area 25m²) (Balance of area measured in sewer trench calculation)
- Soak-away = 150m² (15m x 10m)
- 2 x Biofilters = 64m² (4m x 8m each)

Construction footprint = 0.44ha

Proposed development will lead to the permanent clearance of ±0.2ha of indigenous vegetation.

The final development footprint for the developments as described above = ± 0.28Ha

As far as possible the proposed development has been placed on already cleared and impacted areas and along existing roads and pipeline routes to minimise impacts on the natural environment and indigenous vegetation. The proposed development is also to be located behind the existing picnic area, outside of the 1:100 year floodline area of the Breerivier.

The layout/design alternative as proposed is the only reasonable and feasible alternative assessed as it was designed in accordance with the roads, services infrastructure and picnic facilities which already exists at Die Stroom picnic site as well as what is still required and how it will link in to existing developments and infrastructure.

TECHNOLOGY ALTERNATIVES ASSESSED:

Technology to be used in the proposed development alternative will be similar to existing technology currently being used at the existing picnic facilities and must link in with existing facilities and infrastructure.

Technologies Alternative 1 (as per the preferred alternative) includes:

- Septic tank and Pump chamber = 40m²
- Pool back-wash and soak-away = 260m long
- Underground electrical cable = 110m long
- Soak-away = 150m² (15m x 10m)
- 2 x Biofilters = 64m² (4m x 8m each)

Also water and energy saving technologies to be installed as far as funding allows. The following energy/resources saving methods must be incorporated into the buildings and facilities as proposed where funding allows:

- All facilities to be provided with energy saving compact fluorescent lamps (CLF's).
- All electric geysers should be insulated with geyser blankets.
- All electric geyser thermostats should be set at the most optimal temperature.

- All fitted appliances should have an energy rating and the most efficient models must be considered.
- Energy efficient security/outdoor light technology should be used as far as possible to reduce the energy requirements of the outdoor light network.
- Rainwater harvesting from roofs and gutters must be implemented to collect and store rainwater runoff. This can be used to provide supplementary water which can be used as grey water or irrigation.
- Shower installations must be fitted with low-flow shower heads in school bathrooms.
- Geysers should be installed vertically to save electricity.
- Ensure that the maximum flow rate from hand wash basin tops does not exceed 6L per minute.
- Indoor traps must be fitted with aerators to increase the efficiency by redirecting the flow and amount of water used.
- Flush toilets must be fitted with dual or multi flush mechanisms to ensure that the amount of water required is controlled by the user.
- Solar electricity devices should be installed and made use of as far as possible i.e. solar geysers.

Technology Alternative 2 includes:

- Installing a self-contained sewage treatment plant.

Reason/s why this alternative is not reasonable or feasible - As stated by park management the alternative of a self-contained sewage treatment plant cannot be considered as a reasonable or feasible options because SANParks (the applicant and developer) does not have sufficient funds to firstly install a sewage treatment plant and secondly to appoint suitable trained staff to operate such a plant. The Bontebok National Park is not a high-income park and therefore does not have the budget for a recycling system. The staff at the park is also not qualified to manage such a system.

Technology Alternative 3 includes:

- Installing a conservancy tank which is serviced by the municipality.

Reason/s why this alternative is not reasonable or feasible - As stated by park management the alternative of a self-contained sewage treatment plant cannot be considered as a reasonable or feasible options because SANParks (the applicant and developer) does not have sufficient funds for municipal costs involved with conservancy tanks management. A conservancy tank for waste water to be collected by the municipality and disposed of at the municipal waste water treatment works is also costly and poses high risk of environmental pollution due to overflow if not properly managed.

OPERATIONAL ALTERNATIVES ASSESSED:

Only operational alternative considered was the maintenance and management associated with the proposed new swimming pool, ablution facilities and picnic site expansions and related infrastructure to be maintained by the park management after construction completion. Once operational, the only operational activities that will be undertaken are related to maintenance and upkeep of the development and associated infrastructure. These operations must also be done in accordance with the prescribed EMPr. Refer to Appendix H: EMPr for all proposed mitigation measures.

THE NO-DEVELOPMENT OPTIONS ASSESSED:

If the proposed Die Stroom picnic site swimming pool, recreational facilities and infrastructure upgrades are not to proceed it is not expected that any significant detrimental impacts will occur in terms of the terrestrial features of the site and surrounds and processes will continue as is. However, the aim of the proposed swimming pool and picnic area upgrade next to the Breerivier is to enhance the experience of the local community and visitors use to visiting the site and provide safer conditions for swimming etc. It is also proposed to provide much needed additional public ablution facilities, additional parking areas and formal picnic areas to prevent the public from impacting on the surrounding natural vegetation areas like parking within natural areas because there are currently not enough formal facilities provided at the popular picnic spot, hence potentially decreasing terrestrial biodiversity impacts due to uncontrolled human activities in the long term.

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).

All areas falling outside of the proposed 0.44ha development area must be considered as no-go areas and proposed developments must be clearly demarcated before construction starts and remain demarcated throughout the construction phase. These requirements have been included in the EMP.

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 were developed based on the Department of Environmental Affairs' Integrated Environmental Management Series guideline documents.

Criteria	Description		
Nature	a description of what causes the effect, what will be affected, and how it will be affected.		
	Type	Score	Description
Extent (E)	None (No)	1	Footprint
	Site (S)	2	On site or within 100 m of the site
	Local (L)	3	Within a 20 km radius of the centre of the site
	Regional (R)	4	Beyond a 20 km radius of the site
	National (Na)	5	Crossing provincial boundaries or on a national / land wide scale
Duration (D)	Short term (S)	1	0 – 1 years
	Short to medium (S-M)	2	2 – 5 years
	Medium term (M)	3	5 – 15 years
	Long term (L)	4	> 15 years
	Permanent (P)	5	Will not cease
Magnitude (M)	Small (S)	0	will have no effect on the environment
	Minor (Mi)	2	will not result in an impact on processes
	Low (L)	4	will cause a slight impact on processes
	Moderate (Mo)	6	processes continuing but in a modified way
	High (H)	8	processes are altered to the extent that they temporarily cease
Probability (P) the likelihood of the impact actually occurring. Probability is estimated on a scale, and a score assigned	Very improbable (VP)	1	probably will not happen
	Improbable (I)	2	some possibility, but low likelihood
	Probable (P)	3	distinct possibility
	Highly probable (HP)	4	most likely
	Definite (D)	5	impact will occur regardless of any prevention measures
Significance (S)	Determined through a synthesis of the characteristics described above: S = (E+D+M) x P Significance can be assessed as low, medium or high		
Low: < 30 points:	The impact would not have a direct influence on the decision to develop in the area		
Medium: 30 – 60 points:	The impact could influence the decision to develop in the area unless it is effectively mitigated		
High: > 60 points:	The impact must have an influence on the decision process to develop in the area		
No significance	When no impact will occur or the impact will not affect the environment		
Status	Positive (+) Negative (-)		
The degree to which the impact can be reversed	Completely reversible (R)	90-100%	The impact can be mostly to completely reversed with the implementation of the correct mitigation and rehabilitation measures.
	Partly reversible (PR)	6-89%	The impact can be partly reversed providing that mitigation measures as stipulated in the EMP are implemented and rehabilitation measures are undertaken
	Irreversible (IR)	0-5%	The impact cannot be reversed, regardless of the mitigation or rehabilitation measures taking place
The degree to which the impact may cause irreplaceable loss of resources	Resource will not be lost (R)	1	The resource will not be lost or destroyed provided that mitigation and rehabilitation measures as stipulated in the EMP are implemented
	Resource may be partly destroyed (PR)	2	Partial loss or destruction of the resources will occur even though all management and mitigation measures as stipulated in the EMP are implemented
	Resource cannot be replaced (IR)	3	The resource cannot be replaced no matter which management or mitigation measures are implemented.
The degree to which the impact can be mitigated	Completely mitigatable (CM)	1	The impact can be completely mitigated providing that all management and mitigation measures as stipulated in the EMP are implemented

	Partly mitigatable (PM)	2	The impact cannot be completely mitigated even though all management and mitigation measures as stipulated in the EMP are implemented. Implementation of these measures will provide a measure of mitigatability
	Un-mitigatable (UM)	3	The impact cannot be mitigated no matter which management or mitigation measures are implemented.

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 1:	<p><u>CONSTRUCTION PHASE- LAYOUT ALTERNATIVE 1</u></p> <ul style="list-style-type: none"> • Disturbance to subsurface geological layers (medium negative impact before mitigation and low negative impact with mitigation measures); • Soil erosion (medium negative impact before mitigation and low negative impact with mitigation measures); • Compaction of soil (medium negative impact before mitigation and low negative impact with mitigation measures); • Increase in and accumulation of stormwater runoff (high negative impact before mitigation and low negative impact with mitigation measures); • Impacts of construction activities on the hydrological functioning of the site and surrounds which includes the Breerivier and a non-perennial tributary (medium negative impact before mitigation and low negative impact with mitigation measures); • Impacts of construction activities on indigenous vegetation associated with Endangered – Swellendam Silcrete Fynbos also part of a mapped Protected Area (medium negative impact before mitigation and low negative impact with mitigation measures); • Impacts of construction activities on indigenous vegetation Species of Conservation Concern (low negative impact before mitigation and low negative impact with mitigation measures); • Impacts of construction activities on indigenous fauna and avifauna habitat associated with Endangered – Swellendam Silcrete Fynbos as part of a mapped Protected Area (medium negative impact before mitigation and low negative impact with mitigation measures) • Impacts of construction activities on indigenous fauna and avifauna Species of Conservation Concern (low negative impact before mitigation and low negative impact with mitigation measures) • Introduction of alien and weed plant species (medium negative impact before mitigation and low negative impact with mitigation measures) • Increased temporary construction jobs (low positive impact) • Increased traffic due to the construction activities requiring various vehicles to come onto and leave the site. (medium negative impact before mitigation and low negative impact with mitigation measures) • Impact of litter or waste from the construction site on the surrounding communities (medium negative impact before mitigation and low negative impact with mitigation measures) • Dust and emissions pollution arising from ground clearing and other construction activities (medium negative impact before mitigation and low negative impact with mitigation measures) • The potential impact of the proposed development on archaeological, paleontological and heritage remains (high negative impact before mitigation and low negative impact with mitigation measures) • The potential impact of the proposed development on the Outstanding Universal Value of a World Heritage Site (medium negative impact before mitigation and low negative impact with mitigation measures)
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	<ul style="list-style-type: none"> • Noise due to construction machinery (low negative impact before mitigation and low negative impact with mitigation measures) • Visual impact of construction of proposed serviced erven (medium negative impact before mitigation and low negative impact with mitigation measures) <p><u>OPERATIONAL PHASE- LAYOUT ALTERNATIVE 1</u></p> <ul style="list-style-type: none"> • Increase in storm water runoff due to removal of vegetation and hardening of surfaces which may lead to erosion of surrounding areas (medium negative impact before mitigation and low negative impact with mitigation measures); • Impacts of operational activities on the hydrological functioning of the site and surrounds (high negative impact before mitigation and low negative impact with mitigation measures); • Impacts of operational activities of the picnic site, swimming pool, ablution facilities and associated soakaway on surface and groundwater resources (medium negative impact before mitigation and low negative impact with mitigation measures) • Impacts of operational activities on remaining and surrounding indigenous vegetation (medium negative impact before mitigation and low negative impact with mitigation measures); • Impacts of operational activities on the indigenous animal and bird life (medium negative impact before mitigation and low negative impact with mitigation measures); • Introduction of alien and weed plant species (medium negative impact before mitigation and low negative impact with mitigation measures) • Expanding and upgrading of recreational facilities available at Die Stroom picnic site in the Bontebok National Park (high positive impact) • Additional load on services infrastructure such as electricity, water, sewage and waste handling (high negative impact before mitigation and medium negative impact with mitigation measures) • The potential impact of the proposed development on the Outstanding Universal Value of a World Heritage Site (medium negative impact before mitigation and low negative impact with mitigation measures) • Noise due to operations of proposed expansions and upgrades to Die Stroom picnic site (medium negative impact before mitigation and low negative impact with mitigation measures) • Visual impact of school expansions which includes sport fields and primary school facilities etc (medium negative impact before mitigation and low negative impact with mitigation measures) <p><u>DECOMMISSIONING AND CLOSURE PHASE- LAYOUT ALTERNATIVE 1</u></p> <p>It is not anticipated that decommissioning will occur in the near future. Should decommissioning occur, the expected impacts are similar to those listed in the construction phase above with the additional positive impact of rehabilitating the decommissioned area to a near natural/indigenous state and significant negative impact of destroying recreational facilities within a national park much needed to attract the local community and general public to the park. Impacts must be mitigated and managed according to the best practise techniques/management measures available for that time.</p>
No-go Alternative:	<p><u>NO-GO/NO-DEVELOPMENT ALTERNATIVE</u></p> <p>If the proposed Die Stroom picnic site swimming pool, recreational facilities and infrastructure upgrades are not to proceed it is not expected that any significant detrimental impacts will occur in terms of the terrestrial features of the site and surrounds and processes will continue as is. However, the aim of the proposed</p>

	swimming pool and picnic area upgrade next to the Breerivier is to enhance the experience of the local community and visitors use to visiting the site and provide safer conditions for swimming etc. It is also proposed to provide much needed additional public ablution facilities, additional parking areas and formal picnic areas to attract the public to the park and to prevent the public from impacting on the surrounding natural vegetation areas like parking within natural areas because there are currently not enough formal facilities provided at the popular picnic spot, hence potentially decreasing terrestrial biodiversity impacts due to uncontrolled human activities in the long term.
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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.
<p><u>TERRESTRIAL BIODIVERSITY IMPACT ASSESSMENT, PROPOSED SWIMMING POOL, RECREATIONAL FACILITIES AND ASSOCIATED INFRASTRUCTURE AT DIE STROOM PICNIC SITE IN THE BONTEBOK NATIONAL PARK ON ERF RE/5338, SWELLENDAM -NICOLAAS HANEKOM – MAY 20205</u></p>	
<p><u>TERRESTRIAL BIODIVERSITY IMPACTS ASSESSMENT</u></p>	
<p>(a) Impacts that may result from the planning, design and construction phases (briefly describe and compare the impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that may occur as a result of the planning, design and construction phases.</p>	
<p>Nature of potential impact: Impacts of construction activities on indigenous vegetation associated with Endangered – Swellendam Silcrete Fynbos also part of a mapped Protected Area</p>	
<p>Discussion: No viable populations of plant species of conservation concern was specifically recorded on the proposed development site, however the indigenous vegetation is part of the Endangered Swellendam Silcrete Fynbos vegetation, located within a Protected Area – Bontebok National Park and the DFFE Screening Report allocated a plant species theme sensitivity rating of Medium to the overall proposed development areas, and it surrounds which the specialist agrees with. However the transformed areas are of Low sensitivity. The remaining indigenous vegetation on the sites which have not been disturbed due to previous developments such as roads, parking and pipelines associated with the existing picnic site is in a good condition in terms of diversity and very limited alien vegetation encroachments.</p> <p>One <i>Aspalathus burchelliana</i> (Endangered) was recorded next to the road edge within the proposed development area. However ongoing human impacts (with or without the proposed development) will most likely lead to the destruction of the specimen if not relocated, hence relocation is proposed by the botanical specialist away from the road edge and outside of the proposed development footprint area.</p> <p>In keeping with the objectives of the Low Intensity Leisure Zone within which the proposed developments falls, the footprint of the proposed developments have been kept to a minimum with placement thereof as far as possible on already disturbed and transformed areas as part of the existing Die Stroom picnic site and placing additional proposed infrastructure such as pipelines and power cables along existing infrastructure routes.</p> <p>Swellendam Silcrete Fynbos is well represented in the Bontebok National Park. The permanent loss of 0.2ha of Swellendam Silcrete Fynbos which is habitat that can support local plant SCC is not expected to be significant as extensive similar habitat will remain within the park which still supports viable populations of the SCC in the park.</p>	
<p>Cumulative impacts: During construction a total area of ±0.44ha will be impacted upon/cleared however only ±0.2ha of indigenous vegetation will be permanently cleared.</p>	
<p>Mitigation:</p>	

- Clearance of indigenous vegetation must be kept to a minimum clearly demarcating the proposed development area before construction commencement, maintaining the demarcation throughout the construction phase and only clearing the area required for the development.
- During site clearance topsoil must be separated from subsoil and stored separately (and clearly marked) throughout construction phase. Topsoil must be protected from wind and water erosion and returned to rehabilitated areas as soon as possible to promote successful rehabilitation
- All unused construction materials must be removed from site immediately after construction completion.
- No waste pollution may occur due to the construction activities and all waste must be contained and disposed of at the municipal landfill site on a daily basis.
- All landscaping of undeveloped and areas disturbed during construction must be done with indigenous vegetation.
- Grass for landscaping must be limited to *Cynodon dactylon* (kweekgras) or *Panicum maximum* (buffelsgras), no kikuyu grass (*Pennisetum clandestinum*) may be used or planted for landscaping of disturbed areas.
- Planted grass such as for the proposed picnic area must be prevented from encroaching further into the remaining and rehabilitating indigenous vegetation landscaped and undeveloped areas.

Criteria	Layout Alternative 1		No-Go Alternative	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Extent	1	1		
Duration	5	5		
Magnitude	2	1		
Probability	5	4		
Significance	40 - Medium	28 - Low		
Status	Medium Negative Significance without Mitigation	Low Negative Significance with Mitigation		
Reversibility	100% Reversible			
Irreplaceable loss of resources	2 – Partly, some loss of indigenous vegetation will occur but will be limited.			
Can impacts be mitigated?	2 – Partly, some loss of indigenous vegetation will occur but will be limited.			

Not Applicable (No construction activities to take place during the No-Go Alternative)

Nature of potential impact:

Impacts of construction activities on indigenous vegetation Species of Conservation Concern

Discussion:

One *Aspalathus burchelliana* (Endangered) was recorded next to the road edge within the proposed development area. However ongoing human impacts (with or without the proposed development) will most likely lead to the destruction of the specimen if not relocated, hence relocation is proposed by the botanical specialist away from the road edge and outside of the proposed development footprint area.

In keeping with the objectives of the Low Intensity Leisure Zone within which the proposed developments falls, the footprint of the proposed developments have been kept to a minimum with placement thereof as far as possible on already disturbed and transformed areas as part of the existing Die Stroom picnic site and placing additional proposed infrastructure such as pipelines and power cables along existing infrastructure routes.

Swellendam Silcrete Fynbos is well represented in the Bontebok National Park. The permanent loss of 0.2ha of Swellendam Silcrete Fynbos which is habitat that can support local plant SCC is not

expected to be significant as extensive similar habitat will remain within the park which still supports viable populations of the SCC in the park.

Cumulative impacts:

It is not expected that the proposed construction activities will lead to the loss of any plant species of conservation concern.

Mitigation:

- Clearance of indigenous vegetation must be kept to a minimum clearly demarcating the proposed development area before construction commencement, maintaining the demarcation throughout the construction phase and only clearing the area required for the development.
- Search and rescue of viable indigenous vegetation species must be conducted prior to site clearance within the demarcated development areas. Indigenous species rescued can be used for landscaping of impacted construction areas after construction completion. Specific viable species to be rescued prior to site clearance must be identified by a suitable botanical specialist once the proposed development site has been demarcated.
- During site clearance topsoil must be separated from subsoil and stored separately (and clearly marked) throughout construction phase. Topsoil must be protected from wind and water erosion and returned to rehabilitated areas as soon as possible to promote successful rehabilitation.
- One *Aspalathus burchelliana* was recorded next to the road edge within the proposed development area. Ongoing human impacts (with or without the proposed development) will most likely lead to the destruction of the specimen if not relocated, hence relocation is proposed by the botanical specialist away from the road edge and outside of the proposed development footprint area.
- Park management will be responsible for rescue/removal of these plants and to take care of these plants until it can be used on site for landscaping and rehabilitation purposes.
- All unused construction materials must be removed from site immediately after construction completion.
- No waste pollution may occur due to the construction activities and all waste must be contained and disposed of at the municipal landfill site on a daily basis.
- All landscaping of undeveloped and areas disturbed during construction must be done with indigenous vegetation.
- Grass for landscaping must be limited to *Cynodon dactylon* (kweekgras) or *Panicum maximum* (buffelsgras), no kikuyu grass (*Pennisetum clandestinum*) may be used or planted for landscaping of disturbed areas.
- Planted grass such as for the proposed picnic area must be prevented from encroaching further into the remaining and rehabilitating indigenous vegetation landscaped and undeveloped areas.

Criteria	Layout Alternative 1		No-Go Alternative	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Extent	1	1		
Duration	5	5		
Magnitude	2	2		
Probability	2	2		
Significance	16 - Low	16 - Low		
Status	Low Negative Significance without Mitigation	Low Negative Significance with Mitigation		
Reversibility	100% Reversible			
Irreplaceable loss of resources	2 – Partly, some loss of indigenous vegetation will occur but will be limited.			
Can impacts be mitigated?	2 – Partly, some loss of indigenous vegetation will occur but will be limited.			

Not Applicable (No construction activities to take place during the No-Go Alternative)

Nature of potential impact:

Impacts of construction activities on indigenous fauna and avifauna habitat associated with Endangered – Swellendam Silcrete Fynbos as part of a mapped Protected Area

Discussion:

The habitat was assessed to have a high sensitivity due to the presence of endangered vegetation type and it is located in the Bontebok National Park. The Bontebok National Park Management Plan (2013 – 2023) refers to a day visitor facility and picnic area in the concept development plan for development within the timeframes of the plan and is included in the associated map (SANParks 2013). The location is within the low intensity leisure zone. The development proposal can therefore be considered to be aligned to the management plan at a broad scale.

Bontebok *Damaliscus pygargus pygargus* was assessed having a high sensitivity rating. There are recent records of bontebok within the Die Stroom picnic site. Based on the available information, the proposed footprint is within confirmed habitat for an SCC and the sensitivity therefore be rated as high in accordance with the protocols. Since the bontebok is known to be at the stroom area, it is proof that they area adapted and that the human activities do not impact on them. Furthermore, the park is responsible for the management of this species and the current management actions are sufficient and appropriate which is evidence of them being in the area. The swimming pool and parking area will take up a small area of their habitat and they will not be affected.

African Marsh Harrier *Circus ranivorus* and Black Harrier *Circus ranivorus* was assessed having a medium sensitivity rating. These species was not recorded on site and only likely to roam the area. *Rhabdomys pumilio* (although not recorded its presence is know from historic visits) is expected to occur in the project area suggesting that it could use the project area for foraging. Primary nesting habitat is not present on the impacted areas. They will simply move into the bigger surrounding area during construction. The current picnic site and activities already impacted on them.

The other species mapped in the screen tool report or known to be in the area was assessed to have a low sensitivity.

The development of the site would have a **Low Negative** impact on animal species. The proposed development will have relatively little animal species impacts provided that appropriate management measures included in the EMPr and adhered to.

Cumulative impacts:

During construction a total area of ±0.44ha will be impacted upon/cleared however only ±0.2ha of indigenous vegetation will be permanently cleared.

Mitigation:

- Clearance of indigenous vegetation must be kept to a minimum clearly demarcating the proposed development area before construction commencement, maintaining the demarcation throughout the construction phase and only clearing the area required for the development.
- All unused construction materials must be removed from site immediately after construction completion.
- No waste pollution may occur due to the construction activities and all waste must be contained and disposed of at the municipal landfill site on a daily basis.
- All landscaping of undeveloped and areas disturbed during construction must be done with indigenous vegetation.
- Construction activities must be completed as quickly as possible to limit disturbance caused to animal and bird life as far as possible

Criteria	Layout Alternative 1		No-Go Alternative	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Extent	1	1		
Duration	5	5		
Magnitude	4	1		
Probability	5	4		
Significance	50 - Medium	28 – Low		
Status	Medium Negative	Low Negative		

Not Applicable (No construction activities to take place during the No-Go Alternative)

	Significance without Mitigation	Significance with Mitigation			
Reversibility	100% Reversible				
Irreplaceable loss of resources	2 – Partly, some loss of indigenous vegetation will occur but will be limited.				
Can impacts be mitigated?	2 – Partly, some loss of indigenous vegetation will occur but will be limited.				

Nature of potential impact:

Impacts of construction activities on indigenous fauna and avifauna Species of Conservation Concern

Discussion:

No fauna or avifauna species of conservation concern was recorded within the proposed development site during the time of the surveys however fauna and avifauna species of conservation concern are present within the national park i.e. Bontebok. Evidence of mole heaps, termites, mice and weasels were also observed throughout the site. The proposed development areas are however also located on and adjacent to the existing Die Stroom picnic site and the ongoing human activities within this area makes it highly unlikely that the particular proposed development site is being used as preferred breeding or nesting areas for the indigenous fauna and avifauna species and these areas will most likely only be occasionally visited by fauna and avifauna species when looking for food. It is therefore also highly unlikely that any fauna or avifauna species of conservation concern or their associated preferred habitat and breeding areas will be significantly impacted by the proposed development.

There is also a probability that at least some animal and/or bird SCCs known to occur within the general area may frequent the site and surrounds. Apart from the Bontebok antelope these SCC are also likely to include Denham's Bustard (*Neotis denhami*) and Black Harrier (*Circus maurus*), however the construction and operational phase of the proposed developments are not expected to impact on the presence and habits of these species any more than the current picnic site activities are impacting upon them.

Bontebok *Damaliscus pygargus pygargus* was assessed having a high sensitivity rating. There are recent records of bontebok within the Die Stroom picnic site. Based on the available information, the proposed footprint is within confirmed habitat for an SCC and the sensitivity therefore be rated as high in accordance with the protocols. Since the bontebok is known to be at the stroom area, it is proof that they area adapted and that the human activities do not impact on them. Furthermore, the park is responsible for the management of this species and the current management actions are sufficient and appropriate which is evidence of them being in the area. The swimming pool and parking area will take up a small area of their habitat and they will not be affected.

African Marsh Harrier *Circus ranivorus* and Black Harrier *Circus ranivorus* was assessed having a medium sensitivity rating. These species was not recorded on site and only likely to roam the area. *Rhabdomys pumilio* (although not recorded its presence is know from historic visits) is expected to occur in the project area suggesting that it could use the project area for foraging. Primary nesting habitat is not present on the impacted areas. They will simply move into the bigger surrounding area during construction. The current picnic site and activities already impacted on them.

The other species mapped in the screen tool report or known to be in the area was assessed to have a low sensitivity.

The development of the site would have a **Low Negative** impact on animal species. The proposed development will have relatively little animal species impacts provided that appropriate management measures included in the EMPr and adhered to.

Cumulative impacts:

Potential cumulative impacts of the construction activities may be loss or disturbance to fauna and avifauna species of conservation concern

Mitigation:

- Clearance of indigenous vegetation must be kept to a minimum clearly demarcating the proposed development area before construction commencement, maintaining the demarcation throughout the construction phase and only clearing the area required for the development.
- All unused construction materials must be removed from site immediately after construction completion.
- No waste pollution may occur due to the construction activities and all waste must be contained and disposed of at the municipal landfill site on a daily basis.
- All landscaping of undeveloped and areas disturbed during construction must be done with indigenous vegetation.
- Construction activities must be completed as quickly as possible to limit disturbance caused to animal and bird life as far as possible
- No trapping, hunting or any injury to animal or birdlife may occur during construction activities.
- Search and rescue operations must be conducted before site clearance activities commences and should any local animal or birdlife be found within the construction area they must be carefully moved to the adjacent natural areas by park management not to be impacted upon.

Criteria	Layout Alternative 1		No-Go Alternative	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Extent	2	2		
Duration	1	1		
Magnitude	6	6		
Probability	3	3		
Significance	27 – Low	27 – Low		
Status	Low Negative Significance without Mitigation	Low Negative Significance with Mitigation		
Reversibility	100% Reversible			
Irreplaceable loss of resources	2 – Partly, some disturbance will occur but will be limited.			
Can impacts be mitigated?	2 – Partly, some disturbance will occur but will be limited.			

Not Applicable (No construction activities to take place during the No-Go Alternative)

(b) Impacts that may result from the **operational phase** (briefly describe and compare impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the operational phase.

Nature of potential impact:

Impacts of operational activities on remaining and surrounding indigenous vegetation as part of Endangered – Swellendam Silcrete Fynbos

Discussion:

Ongoing human activities on the site and surrounds due to it being used as a picnic site may lead indigenous vegetation degradation if not properly managed. However, the site has already been managed by park management for a number of years and will continue to be managed as such once additional developments have been completed.

Cumulative impacts:

Cumulative impacts of the operational activities on indigenous vegetation are related to ongoing human impacts during the use of the new facilities which may cause pollution or loss of indigenous vegetation species if not managed.

Mitigation:

- The discharge of stormwater must not lead to waste pollution or erosion of surrounding indigenous vegetation areas.

- Ongoing monitoring of erosion within and around the development site and should any signs of erosion be detected immediate rectification and further prevention measures must be put in place under the guidance of a qualified ecological specialist so as to prevent any additional cumulative impacts on the environment.
- The impacted site must be monitored for alien vegetation encroachment and should alien vegetation encroach on the impacted site it must be removed and monitored in accordance with parks alien vegetation management plan.
- All infrastructure and developments must be maintained in a good working condition not leading to any environmental degradation.
- Swimming pool water and sewage may not be discharged into the environment and must be managed in a closed system which must be maintained and monitored for leakages.
- Good waste management practices must be implemented not allowing any waste to accumulate or be disposed of in surrounding natural areas or landscaped indigenous vegetation areas.
- Undeveloped and landscaped indigenous vegetation areas on the property must be maintained in such a manner that the use of the facilities at Die Stroom picnic site does not lead to destruction of any additional indigenous vegetation. To achieve this the park must maintain the swimming pool fencing, remove any alien vegetation on the which may encroach on natural areas, make sure that planted indigenous grass does not encroach on adjacent undeveloped and landscaped indigenous vegetation areas and place sign boards conspicuously along the edge of the undeveloped areas indicating that indigenous vegetation may not be picked/destroyed and is to be conserved at all times.

Criteria	Layout Alternative 1		No-Go Alternative	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Extent	2	1		
Duration	5	5		
Magnitude	4	2		
Probability	3	2		
Significance	33 – Medium	16 – Low		
Status	Medium Negative Significance without Mitigation	Low Negative Significance with Mitigation		
Reversibility	100% Reversible			
Irreplaceable loss of resources	2 – Partly, some disturbance will occur but will be limited.			
Can impacts be mitigated?	2 – Partly, some disturbance will occur but will be limited.			

Not Applicable (No construction activities to take place during the No-Go Alternative)

Nature of potential impact:

Impacts of operational activities on the indigenous animal and bird life including species of conservation concern.

Discussion:

Ongoing human activities on the site and surrounds due to it being used as a picnic site may lead to disturbances to animal and birdlife if not properly managed. However, the site has already been managed by park management for a number of years and will continue to be managed as such once additional developments have been completed.

There is also a probability that at least some animal and/or bird SCCs known to occur within the general area may frequent the site and surrounds. Apart from the Bontebok antelope these SCC are also likely to include Denham's Bustard (*Neotis denhami*) and Black Harrier (*Circus maurus*), however the construction and operational phase of the proposed developments are not expected to impact on the presence and habits of these species any more than the current picnic site activities are impacting upon them.

Bontebok *Damaliscus pygargus pygargus* was assessed having a high sensitivity rating. There are recent records of bontebok within the Die Stroom picnic site. Based on the available information, the proposed footprint is within confirmed habitat for an SCC and the sensitivity therefore be rated as high in accordance with the protocols. Since the bontebok is known to be at the stroom area, it is proof that they area adapted and that the human activities do not impact on them. Furthermore, the park is responsible for the management of this species and the current management actions are sufficient and appropriate which is evidence of them being in the area. The swimming pool and parking area will take up a small area of their habitat and they will not be affected.

African Marsh Harrier *Circus ranivorus* and Black Harrier *Circus ranivorus* was assessed having a medium sensitivity rating. These species was not recorded on site and only likely to roam the area. *Rhodomys pumilio* (although not recorded its presence is know from historic visits) is expected to occur in the project area suggesting that it could use the project area for foraging. Primary nesting habitat is not present on the impacted areas. They will simply move into the bigger surrounding area during construction. The current picnic site and activities already impacted on them.

Cumulative impacts:

Cumulative impacts of the operational activities on animal and bird life will be disturbances caused to local animal and bird life due to ongoing human activities such as recreational use of the swimming pool and facilities provided.

Mitigation:

- No trapping, hunting or any injury to animal or birdlife may occur during operational activities. Should any local animal or birdlife be found within the fenced swimming pool area during operational activities they must either be left undisturbed or carefully be moved to the adjacent natural areas by park management not to be impacted upon.
- The discharge of stormwater and management of effluent must not lead to waste pollution or erosion of surrounding indigenous vegetation areas.
- Ongoing monitoring of erosion within and around the development site and should any signs of erosion be detected immediate rectification and further prevention measures must be put in place under the guidance of a qualified ecological specialist so as to prevent any additional cumulative impacts on the environment.
- The impacted site must be monitored for alien vegetation encroachment and should alien vegetation encroach on the impacted site it must be removed and monitored in accordance with the parks alien vegetation management plan.
- All infrastructure and developments must be maintained in a good working condition not leading to any environmental degradation.
- Good waste management practices must be implemented not allowing any waste to accumulate or be disposed of in surrounding natural areas or landscaped indigenous vegetation areas.
- No high intensity lights may be left on during the night that shines outwards unto the adjacent indigenous vegetation areas as this will lead to light pollution impacting on especially nocturnal animal and bird species.
- Undeveloped and landscaped indigenous vegetation areas on the property must be maintained in such a manner that the use of the facilities at Die Stroom picnic site does not lead to destruction of any additional indigenous vegetation. To achieve this the park must maintain the swimming pool fencing, remove any alien vegetation on the which may encroach on natural areas, make sure that planted indigenous grass does not encroach on adjacent undeveloped and landscaped indigenous vegetation areas and place sign boards conspicuously along the edge of the undeveloped areas indicating that indigenous vegetation may not be picked/destroyed and is to be conserved at all times.

Criteria	Layout Alternative 1		No-Go Alternative	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Extent	2	1		
Duration	5	5		
Magnitude	6	2		
Probability	3	2		
Significance	39 – Medium	16 – Low		

Not Applicable (No construction activities to take place during the No-Go Alternative)

Status	Medium Negative Significance without Mitigation	Low Negative Significance with Mitigation			
Reversibility	100% Reversible				
Irreplaceable loss of resources	2 – Partly, some loss of indigenous vegetation will occur but will be limited.				
Can impacts be mitigated?	2 – Partly, some loss of indigenous vegetation will occur but will be limited.				

(c) Impacts that may result from the **No-Development Option**

If the proposed Die Stroom picnic site swimming pool, recreational facilities and infrastructure upgrades are not to proceed it is not expected that any significant detrimental impacts will occur in terms of the terrestrial features of the site and surrounds and processes will continue as is. However, the aim of the proposed swimming pool and picnic area upgrade next to the Breerivier is to enhance the experience of the local community and visitors use to visiting the site and provide safer conditions for swimming etc. It is also proposed to provide much needed additional public ablution facilities, additional parking areas and formal picnic areas to prevent the public from impacting on the surrounding natural vegetation areas like parking within natural areas because there are currently not enough formal facilities provided at the popular picnic spot, hence potentially decreasing terrestrial biodiversity impacts due to uncontrolled human activities in the long term.

1. CONCLUSION AND RECOMMENDATIONS

One plant species of conservation concern (“SCC”) were recorded on the specific proposed development site to be impacted upon during the time of the surveys and animal species of conservation concern such as Bontebok has been previously recorded within the vicinity of Die Stroom Picnic site, the indigenous vegetation type occurring on the site and surrounds is listed as Endangered Swellendam Silcrete Fynbos according to the NEMBA: National list of ecosystems that are threatened and in need of protection (as amended 18/11/2022) and the development area is also located within the Bontebok National Park which is home to animal and bird species of conservation concern as well as several recorded plant species of conservation concern. The remaining indigenous vegetation on the site which has not been disturbed due to previous developments such as roads, parking and pipelines associated with the existing picnic site is in a good condition in terms of diversity and very limited alien vegetation encroachments. This vegetation type is the main indigenous vegetation type represented in the park. Overall, the park also supports fauna and avifauna species of conservation concern of particular interest is the Bontebok which roams freely in the park. In accordance with the parks management plan the proposed development site is also located within an area mapped as Medium to Low sensitivity within the **Low Intensity Leisure Park Use Zone**. Therefore, in line with the sensitivity mapping of the Bontebok National Park management plan the proposed development areas within and around the Die Stroom picnic site is to be classified of **Medium to Low Terrestrial Biodiversity Sensitivity**.

In keeping with the objectives of the Low Intensity Leisure Zone within which the proposed developments falls, the footprint of the proposed developments have been kept to a minimum with placement thereof as far as possible on already disturbed and transformed areas as part of the existing Die Stroom picnic site and placing additional proposed infrastructure such as pipelines and power cables along existing infrastructure routes.

Expected terrestrial biodiversity impacts of the proposed development can be summarised as below and will include:

- A total area of ±0.44ha will be impacted upon/cleared during the initial construction phase, however only ±0.2ha of indigenous vegetation will remain permanently cleared once the development has been completed and disturbed areas such as pipelines have rehabilitated with natural vegetation. Therefore, the permanent loss of ±0.2ha of indigenous habitat as part of Endangered Swellendam Silcrete Fynbos has been assessed and allocated a significance rating of low negative after mitigation.
- No negative impacts on any viable populations of plant species of conservation concern are expected to occur during the construction phase as the only species of conservation concern that was recorded within the development site is *Aspalathus burchelliana* (Endangered) which was recorded on the edge of the existing access road to the site and relocation is proposed outside of the development footprint area. Therefore, the potential construction impacts on plant species of conservation concern have been

- assessed and allocated a significant rating of low negative after mitigation.
- Construction activities will impact on 0.44ha indigenous fauna and avifauna habitat associated with Endangered – Swellendam Silcrete Fynbos as part of a mapped Protected Area, however only ±0.2ha of indigenous vegetation habitat will remain permanently cleared once the development has been completed and disturbed areas such as pipelines have rehabilitated with natural vegetation. Therefore, the permanent loss of ±0.2ha of indigenous fauna and avifauna habitat as part of Endangered Swellendam Silcrete Fynbos has been assessed and allocated a significance rating of low negative after mitigation.
- No significant negative impacts on any fauna and avifauna species of conservation concern are expected to occur during the construction phase and none are expected to breed on the particular development sites as the site is already used by the public on a regular basis as a picnic site. Therefore, the potential construction impacts on fauna and avifauna species of conservation concern have been assessed and allocated a significance rating of low negative after mitigation.
- With proper maintenance and management measures implemented by the park management during the operational phase of the proposed developments it is not expected that the additional facilities and activities proposed at the Die Stroom picnic site will have a significant negative impact on remaining indigenous vegetation and existing fauna and avifauna within the applicable area. Therefore, the potential operational impacts on the terrestrial biodiversity features of the site and surrounds have been assessed and allocated a significance rating of low negative after mitigation.

To achieve the objective of having an overall low terrestrial biodiversity impact the following management and mitigation measures are proposed and must be incorporated into the Environmental Management Plan:

- Clearance of indigenous vegetation must be kept to a minimum clearly demarcating the proposed development area before construction commencement, maintaining the demarcation throughout the construction phase and only clearing the area required for the development
- During site clearance topsoil must be separated from subsoil and stored separately (and clearly marked) throughout construction phase. Topsoil must be protected from wind and water erosion and returned to rehabilitated areas as soon as possible to promote successful rehabilitation
- All unused construction materials must be removed from site immediately after construction completion.
- No waste pollution may occur due to the construction activities and all waste must be contained and disposed of at the municipal landfill site on a daily basis.
- All landscaping of undeveloped and areas disturbed during construction must be done with indigenous vegetation.
- Grass for landscaping must be limited to *Cynodon dactylon* (kweekgras) or *Panicum maximum* (buffelsgras), no kikuyu grass (*Pennisetum clandestinum*) may be used or planted for landscaping of disturbed areas.
- Planted grass such as for the proposed picnic area must be prevented from encroaching further into the remaining and rehabilitating indigenous vegetation landscaped and undeveloped areas.
- Search and rescue of viable indigenous vegetation species must be conducted prior to site clearance within the demarcated development areas. Indigenous species rescued can be used for landscaping of impacted construction areas after construction completion. Specific viable species to be rescued prior to site clearance must be identified by a suitable botanical specialist once the proposed development site has been demarcated.
- Park management will be responsible for rescue/removal of these plants and to take care of these plants until it can be used on site for landscaping and rehabilitation purposes.
- Construction activities must be completed as quickly as possible to limit disturbance caused to animal and bird life as far as possible.
- No trapping, hunting or any injury to animal or birdlife may occur during construction activities.
- Search and rescue operations must be conducted before site clearance activities commences and should any local animal or birdlife be found within the construction area they must be carefully moved to the adjacent natural areas by park management not to be impacted upon.
- The discharge of stormwater must not lead to waste pollution or erosion of surrounding indigenous vegetation areas.
- Ongoing monitoring of erosion within and around the development site and should any signs of erosion be detected immediate rectification and further prevention measures must be put in place under the guidance of a qualified ecological specialist so as to prevent any additional cumulative impacts on the environment.
- The impacted site must be monitored for alien vegetation encroachment and should alien vegetation encroach on the impacted site it must be removed and monitored in accordance with parks alien vegetation management plan.
- All infrastructure and developments must be maintained in a good working condition not leading to any environmental degradation.

- Swimming pool water and sewage may not be discharged into the environment and must be managed in a closed system which must be maintained and monitored for leakages.
- Good waste management practices must be implemented not allowing any waste to accumulate or be disposed of in surrounding natural areas or landscaped indigenous vegetation areas.
- Undeveloped and landscaped indigenous vegetation areas on the property must be maintained in such a manner that the use of the facilities at Die Stroom picnic site does not lead to destruction of any additional indigenous vegetation. To achieve this the park must maintain the swimming pool fencing, remove any alien vegetation on the site which may encroach on natural areas, make sure that planted indigenous grass does not encroach on adjacent undeveloped and landscaped indigenous vegetation areas and place sign boards conspicuously along the edge of the undeveloped areas indicating that indigenous vegetation may not be picked/destroyed and is to be conserved at all times.
- One *Aspalathus burchelliana* was recorded next to the road edge within the proposed development area. Ongoing human impacts (with or without the proposed development) will most likely lead to the destruction of the specimen if not relocated, hence relocation is proposed by the botanical specialist away from the road edge and outside of the proposed development footprint area.
- No trapping, hunting or any injury to animal or birdlife may occur during operational activities. Should any local animal or birdlife be found within the fenced swimming pool area during operational activities they must either be left undisturbed or carefully be moved to the adjacent natural areas by park management not to be impacted upon.
- No high intensity lights may be left on during the night that shines outwards unto the adjacent indigenous vegetation areas as this will lead to light pollution impacting on especially nocturnal animal and bird species.

Provided that the mitigation measures to reduce the significance of the potential environmental impacts of the activities as listed above are implemented, then the activities are not likely to result in long-term degradation of the receiving terrestrial biodiversity environment or significant net loss thereof.

PLANT SPECIES IMPACT ASSESSMENT PROPOSED SWIMMING POOL, RECREATIONAL FACILITIES AND ASSOCIATED INFRASTRUCTURE AT DIE STROOM PICNIC SITE IN THE BONTEBOK NATIONAL PARK ON ERF RE/5338, SWELLENDAM – NICOLAAS HANEKOM -MAY 2025

PLANT SPECIES IMPACTS ASSESSMENT

(a) Impacts that may result from the planning, design and **construction phases** (briefly describe and compare the impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that may occur as a result of the planning, design and construction phases.

Nature of potential impact:

Impacts of construction activities on indigenous vegetation associated with Endangered – Swellendam Silcrete Fynbos also part of a mapped Protected Area

Discussion:

No viable populations of plant species of conservation concern was specifically recorded on the proposed development site, however the indigenous vegetation is part of the Endangered Swellendam Silcrete Fynbos vegetation, located within a Protected Area – Bontebok National Park and the DFFE Screening Report allocated a plant species theme sensitivity rating of **Medium** to the overall proposed development areas, and it surrounds which the specialist agrees with. However the transformed areas are of **Low sensitivity**. The remaining indigenous vegetation on the sites which have not been disturbed due to previous developments such as roads, parking and pipelines associated with the existing picnic site is in a good condition in terms of diversity and very limited alien vegetation encroachments.

One *Aspalathus burchelliana* (Endangered) was recorded next to the road edge within the proposed development area. However ongoing human impacts (with or without the proposed development) will most likely lead to the destruction of the specimen if not relocated, hence relocation is proposed by the botanical specialist away from the road edge and outside of the proposed development footprint area.

In keeping with the objectives of the Low Intensity Leisure Zone within which the proposed developments falls, the footprint of the proposed developments have been kept to a minimum with placement thereof as far as possible on already disturbed and transformed areas as part of the

existing Die Stroom picnic site and placing additional proposed infrastructure such as pipelines and power cables along existing infrastructure routes.

Swellendam Silcrete Fynbos is well represented in the Bontebok National Park. The permanent loss of 0.2ha of Swellendam Silcrete Fynbos which is habitat that can support local plant SCC is not expected to be significant as extensive similar habitat will remain within the park which still supports viable populations of the SCC in the park.

Cumulative impacts:

During construction a total area of ±0.44ha will be impacted upon/cleared however only ±0.2ha of indigenous vegetation will be permanently cleared.

Mitigation:

- Clearance of indigenous vegetation must be kept to a minimum clearly demarcating the proposed development area before construction commencement, maintaining the demarcation throughout the construction phase and only clearing the area required for the development.
- During site clearance topsoil must be separated from subsoil and stored separately (and clearly marked) throughout construction phase. Topsoil must be protected from wind and water erosion and returned to rehabilitated areas as soon as possible to promote successful rehabilitation
- All unused construction materials must be removed from site immediately after construction completion.
- No waste pollution may occur due to the construction activities and all waste must be contained and disposed of at the municipal landfill site on a daily basis.
- All landscaping of undeveloped and areas disturbed during construction must be done with indigenous vegetation.
- Grass for landscaping must be limited to *Cynodon dactylon* (kweekgras) or *Panicum maximum* (buffelsgras), no kikuyu grass (*Pennisetum clandestinum*) may be used or planted for landscaping of disturbed areas.
- Planted grass such as for the proposed picnic area must be prevented from encroaching further into the remaining and rehabilitating indigenous vegetation landscaped and undeveloped areas.

Criteria	Layout Alternative 1		No-Go Alternative	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Extent	1	1		
Duration	5	5		
Magnitude	2	1		
Probability	5	4		
Significance	40 - Medium	28 - Low		
Status	Medium Negative Significance without Mitigation	Low Negative Significance with Mitigation		
Reversibility	100% Reversible			
Irreplaceable loss of resources	2 – Partly, some loss of indigenous vegetation will occur but will be limited.			
Can impacts be mitigated?	2 – Partly, some loss of indigenous vegetation will occur but will be limited.			

Not Applicable (No construction activities to take place during the No-Go Alternative)

Nature of potential impact:

Impacts of construction activities on indigenous vegetation Species of Conservation Concern

Discussion:

One *Aspalathus burchelliana* (Endangered) was recorded next to the road edge within the proposed development area. However ongoing human impacts (with or without the proposed development) will most likely lead to the destruction of the specimen if not relocated, hence

relocation is proposed by the botanical specialist away from the road edge and outside of the proposed development footprint area.

In keeping with the objectives of the Low Intensity Leisure Zone within which the proposed developments falls, the footprint of the proposed developments have been kept to a minimum with placement thereof as far as possible on already disturbed and transformed areas as part of the existing Die Stroom picnic site and placing additional proposed infrastructure such as pipelines and power cables along existing infrastructure routes.

Swellendam Silcrete Fynbos is well represented in the Bontebok National Park. The permanent loss of 0.2ha of Swellendam Silcrete Fynbos which is habitat that can support local plant SCC is not expected to be significant as extensive similar habitat will remain within the park which still supports viable populations of the SCC in the park.

Cumulative impacts:

It is not expected that the proposed construction activities will lead to the loss of any plant species of conservation concern.

Mitigation:

- Clearance of indigenous vegetation must be kept to a minimum clearly demarcating the proposed development area before construction commencement, maintaining the demarcation throughout the construction phase and only clearing the area required for the development.
- Search and rescue of viable indigenous vegetation species must be conducted prior to site clearance within the demarcated development areas. Indigenous species rescued can be used for landscaping of impacted construction areas after construction completion. Specific viable species to be rescued prior to site clearance must be identified by a suitable botanical specialist once the proposed development site has been demarcated.
- During site clearance topsoil must be separated from subsoil and stored separately (and clearly marked) throughout construction phase. Topsoil must be protected from wind and water erosion and returned to rehabilitated areas as soon as possible to promote successful rehabilitation.
- One *Aspalathus burchelliana* was recorded next to the road edge within the proposed development area. Ongoing human impacts (with or without the proposed development) will most likely lead to the destruction of the specimen if not relocated, hence relocation is proposed by the botanical specialist away from the road edge and outside of the proposed development footprint area.
- Park management will be responsible for rescue/removal of these plants and to take care of these plants until it can be used on site for landscaping and rehabilitation purposes.
- All unused construction materials must be removed from site immediately after construction completion.
- No waste pollution may occur due to the construction activities and all waste must be contained and disposed of at the municipal landfill site on a daily basis.
- All landscaping of undeveloped and areas disturbed during construction must be done with indigenous vegetation.
- Grass for landscaping must be limited to *Cynodon dactylon* (kweekgras) or *Panicum maximum* (buffelsgras), no kikuyu grass (*Pennisetum clandestinum*) may be used or planted for landscaping of disturbed areas.
- Planted grass such as for the proposed picnic area must be prevented from encroaching further into the remaining and rehabilitating indigenous vegetation landscaped and undeveloped areas.

Criteria	Layout Alternative 1		No-Go Alternative	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Extent	1	1		
Duration	5	5		
Magnitude	2	2		
Probability	2	2		
Significance	16 - Low	16 - Low		

Not Applicable (No construction activities to take place during the No-Go Alternative)

Status	Low Negative Significance without Mitigation	Low Negative Significance with Mitigation			
Reversibility	100% Reversible				
Irreplaceable loss of resources	2 – Partly, some loss of indigenous vegetation will occur but will be limited.				
Can impacts be mitigated?	2 – Partly, some loss of indigenous vegetation will occur but will be limited.				

(b) Impacts that may result from the **operational phase** (briefly describe and compare impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the operational phase.

Nature of potential impact: Impacts of operational activities on remaining and surrounding indigenous vegetation as part of Endangered – Swellendam Silcrete Fynbos				
Discussion: Ongoing human activities on the site and surrounds due to it being used as a picnic site may lead indigenous vegetation degradation if not properly managed. However, the site has already been managed by park management for a number of years and will continue to be managed as such once additional developments have been completed.				
Cumulative impacts: Cumulative impacts of the operational activities on indigenous vegetation are related to ongoing human impacts during the use of the new facilities which may cause pollution or loss of indigenous vegetation species if not managed.				
Mitigation:				
<ul style="list-style-type: none"> • The discharge of stormwater must not lead to waste pollution or erosion of surrounding indigenous vegetation areas. • Ongoing monitoring of erosion within and around the development site and should any signs of erosion be detected immediate rectification and further prevention measures must be put in place under the guidance of a qualified ecological specialist so as to prevent any additional cumulative impacts on the environment. • The impacted site must be monitored for alien vegetation encroachment and should alien vegetation encroach on the impacted site it must be removed and monitored in accordance with parks alien vegetation management plan. • All infrastructure and developments must be maintained in a good working condition not leading to any environmental degradation. • Swimming pool water and sewage may not be discharged into the environment and must be managed in a closed system which must be maintained and monitored for leakages. • Good waste management practices must be implemented not allowing any waste to accumulate or be disposed of in surrounding natural areas or landscaped indigenous vegetation areas. • Undeveloped and landscaped indigenous vegetation areas on the property must be maintained in such a manner that the use of the facilities at Die Stroom picnic site does not lead to destruction of any additional indigenous vegetation. To achieve this the park must maintain the swimming pool fencing, remove any alien vegetation on the which may encroach on natural areas, make sure that planted indigenous grass does not encroach on adjacent undeveloped and landscaped indigenous vegetation areas and place sign boards conspicuously along the edge of the undeveloped areas indicating that indigenous vegetation may not be picked/destroyed and is to be conserved at all times. 				
Criteria	Layout Alternative 1		No-Go Alternative	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Extent	2	1		

Duration	5	5			Not Applicable (No construction activities to take place during the No-Go Alternative)
Magnitude	4	2			
Probability	3	2			
Significance	33 – Medium	16 – Low			
Status	Medium Negative Significance without Mitigation	Low Negative Significance with Mitigation			
Reversibility	100% Reversible				
Irreplaceable loss of resources	2 – Partly, some disturbance will occur but will be limited.				
Can impacts be mitigated?	2 – Partly, some disturbance will occur but will be limited.				

(c) Impacts that may result from the **No-Development Option**

If the proposed Die Stroom picnic site swimming pool, recreational facilities and infrastructure upgrades are not to proceed it is not expected that any significant detrimental impacts will occur in terms of the plant sensitivity features of the site and surrounds and processes will continue as is. However, the aim of the proposed swimming pool and picnic area upgrade next to the Breerivier is to enhance the experience of the local community and visitors use to visiting the site and provide safer conditions for swimming etc. It is also proposed to provide much needed additional public ablution facilities, additional parking areas and formal picnic areas to prevent the public from impacting on the surrounding natural vegetation areas like parking within natural areas because there are currently not enough formal facilities provided at the popular picnic spot, hence potentially decreasing vegetation impacts due to uncontrolled human activities in the long term.

2. CONCLUSION AND RECOMMENDATIONS

No viable populations of plant species of conservation concern was specifically recorded on the proposed development site, however the indigenous vegetation is part of the Endangered Swellendam Silcrete Fynbos vegetation, located within a Protected Area – Bontebok National Park and the DFFE Screening Report allocated a plant species theme sensitivity rating of **Medium** to the overall proposed development areas, and it surrounds which the specialist agrees with. However, the transformed areas are of **Low sensitivity**. The remaining indigenous vegetation on the sites which have not been disturbed due to previous developments such as roads, parking and pipelines associated with the existing picnic site is in a good condition in terms of diversity and very limited alien vegetation encroachments.

One *Aspalathus burchelliana* (Endangered) was recorded next to the road edge within the proposed development area. However ongoing human impacts (with or without the proposed development) will most likely lead to the destruction of the specimen if not relocated, hence relocation is proposed by the botanical specialist away from the road edge and outside of the proposed development footprint area

In keeping with the objectives of the Low Intensity Leisure Zone within which the proposed developments falls, the footprint of the proposed developments have been kept to a minimum with placement thereof as far as possible on already disturbed and transformed areas as part of the existing Die Stroom picnic site and placing additional proposed infrastructure such as pipelines and power cables along existing infrastructure routes.

Swellendam Silcrete Fynbos is well represented in the Bontebok National Park. The permanent loss of 0.2ha of Swellendam Silcrete Fynbos which is habitat that can support local plant SCC is not expected to be significant as extensive similar habitat will remain within the park which still supports viable populations of the SCC in the park.

Expected plant species/vegetation impacts of the proposed development can be summarised as below and will include:

- A total area of ±0.44ha will be impacted upon/cleared during the initial construction phase, however only ±0.2ha of indigenous vegetation will remain permanently cleared once the development has been completed and disturbed areas such as pipelines have rehabilitated with natural vegetation. Therefore, the permanent loss of ±0.2ha of indigenous habitat as part of Endangered Swellendam Silcrete Fynbos has been assessed and allocated a significance rating of low negative after mitigation.

- No negative impacts on any viable populations of plant species of conservation concern are expected to occur during the construction phase as the only species of conservation concern that was recorded within the development site is *Aspalathus burchelliana* (Endangered) which was recorded on the edge of the existing access road to the site and relocation is proposed outside of the development footprint area. Therefore, the potential construction impacts on plant species of conservation concern have been assessed and allocated a significant rating of low negative after mitigation.
- With proper maintenance and management measures implemented by the park management during the operational phase of the proposed developments it is not expected that the additional facilities and activities proposed at the Die Stroom picnic site will have a significant negative impact on remaining indigenous vegetation. Therefore, the potential operational impacts on the indigenous vegetation of the site and surrounds have been assessed and allocated a significance rating of low negative after mitigation.

To achieve the objective of having an overall low plant species impact the following management and mitigation measures are proposed and must be incorporated into the Environmental Management Plan:

- Clearance of indigenous vegetation must be kept to a minimum clearly demarcating the proposed development area before construction commencement, maintaining the demarcation throughout the construction phase and only clearing the area required for the development
- During site clearance topsoil must be separated from subsoil and stored separately (and clearly marked) throughout construction phase. Topsoil must be protected from wind and water erosion and returned to rehabilitated areas as soon as possible to promote successful rehabilitation
- All unused construction materials must be removed from site immediately after construction completion.
- No waste pollution may occur due to the construction activities and all waste must be contained and disposed of at the municipal landfill site on a daily basis.
- All landscaping of undeveloped and areas disturbed during construction must be done with indigenous vegetation.
- Grass for landscaping must be limited to *Cynodon dactylon* (kweekgras) or *Panicum maximum* (buffelsgras), no kikuyu grass (*Pennisetum clandestinum*) may be used or planted for landscaping of disturbed areas.
- Planted grass such as for the proposed picnic area must be prevented from encroaching further into the remaining and rehabilitating indigenous vegetation landscaped and undeveloped areas.
- Search and rescue of viable indigenous vegetation species must be conducted prior to site clearance within the demarcated development areas. Indigenous species rescued can be used for landscaping of impacted construction areas after construction completion. Specific viable species to be rescued prior to site clearance must be identified by a suitable botanical specialist once the proposed development site has been demarcated.
- Park management will be responsible for rescue/removal of these plants and to take care of these plants until it can be used on site for landscaping and rehabilitation purposes.
- The discharge of stormwater must not lead to waste pollution or erosion of surrounding indigenous vegetation areas.
- Ongoing monitoring of erosion within and around the development site and should any signs of erosion be detected immediate rectification and further prevention measures must be put in place under the guidance of a qualified ecological specialist so as to prevent any additional cumulative impacts on the environment.
- The impacted site must be monitored for alien vegetation encroachment and should alien vegetation encroach on the impacted site it must be removed and monitored in accordance with parks alien vegetation management plan.
- All infrastructure and developments must be maintained in a good working condition not leading to any environmental degradation.
- Swimming pool water and sewage may not be discharged into the environment and must be managed in a closed system which must be maintained and monitored for leakages.
- Good waste management practices must be implemented not allowing any waste to accumulate or be disposed of in surrounding natural areas or landscaped indigenous vegetation areas.
- Undeveloped and landscaped indigenous vegetation areas on the property must be maintained in such a manner that the use of the facilities at Die Stroom picnic site does not lead to destruction of any additional indigenous vegetation. To achieve this the park must maintain the swimming pool fencing, remove any alien vegetation on the which may encroach on natural areas, make sure that planted indigenous grass does not encroach on adjacent undeveloped and landscaped indigenous vegetation areas and place sign boards conspicuously along the edge of the undeveloped areas indicating that indigenous vegetation may not be picked/destroyed and is to be conserved at all times.
- One *Aspalathus burchelliana* was recorded next to the road edge within the proposed development area. Ongoing human impacts (with or without the proposed development) will most likely lead to the

destruction of the specimen if not relocated, hence relocation is proposed by the botanical specialist away from the road edge and outside of the proposed development footprint area.

Provided that the mitigation measures to reduce the significance of the potential environmental impacts of the activities as listed above are implemented, then the activities are not likely to result in long-term degradation of the receiving indigenous vegetation or significant net loss thereof.

ANIMAL SPECIES IMPACT ASSESSMENT FOR THE PROPOSED SWIMMING POOL, RECREATIONAL FACILITIES AND ASSOCIATED INFRASTRUCTURE AT DIE STROOM PICNIC SITE IN THE BONTEBOK NATIONAL PARK ON ERF RE/5338, SWELLENDAM – NICOLAAS HANEKOM – MAY 2025

ANIMAL SPECIES IMPACTS ASSESSMENT

(a) Impacts that may result from the planning, design and **construction phases** (briefly describe and compare the impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that may occur as a result of the planning, design and construction phases.

Nature of potential impact:

Impacts of construction activities on indigenous fauna and avifauna habitat associated with Endangered – Swellendam Silcrete Fynbos as part of a mapped Protected Area

Discussion:

The habitat was assessed to have a high sensitivity due to the presence of endangered vegetation type and it is located in the Bontebok National Park. The Bontebok National Park Management Plan (2013 – 2023) refers to a day visitor facility and picnic area in the concept development plan for development within the timeframes of the plan and is included in the associated map (SANParks 2013). The location is within the low intensity leisure zone. The development proposal can therefore be considered to be aligned to the management plan at a broad scale.

Bontebok *Damaliscus pygargus pygargus* was assessed having a high sensitivity rating. There are recent records of bontebok within the Die Stroom picnic site. Based on the available information, the proposed footprint is within confirmed habitat for an SCC and the sensitivity therefore be rated as high in accordance with the protocols. Since the bontebok is known to be at the stroom area, it is proof that they area adapted and that the human activities do not impact on them. Furthermore, the park is responsible for the management of this species and the current management actions are sufficient and appropriate which is evidence of them being in the area. The swimming pool and parking area will take up a small area of their habitat and they will not be affected.

African Marsh Harrier *Circus ranivorus* and Black Harrier *Circus ranivorus* was assessed having a medium sensitivity rating. These species was not recorded on site and only likely to roam the area. *Rhabdomys pumilio* (although not recorded its presence is know from historic visits) is expected to occur in the project area suggesting that it could use the project area for foraging. Primary nesting habitat is not present on the impacted areas. They will simply move into the bigger surrounding area during construction. The current picnic site and activities already impacted on them.

The other species mapped in the screen tool report or known to be in the area was assessed to have a low sensitivity.

The development of the site would have a **Low Negative** impact on animal species. The proposed development will have relatively little animal species impacts provided that appropriate management measures included in the EMPr and adhered to.

Cumulative impacts:

During construction a total area of ±0.44ha will be impacted upon/cleared however only ±0.2ha of indigenous vegetation will be permanently cleared.

Mitigation:

- Clearance of indigenous vegetation must be kept to a minimum clearly demarcating the proposed development area before construction commencement, maintaining the demarcation throughout the construction phase and only clearing the area required for the development.
- All unused construction materials must be removed from site immediately after construction

completion.

- No waste pollution may occur due to the construction activities and all waste must be contained and disposed of at the municipal landfill site on a daily basis.
- All landscaping of undeveloped and areas disturbed during construction must be done with indigenous vegetation.
- Construction activities must be completed as quickly as possible to limit disturbance caused to animal and bird life as far as possible

Criteria	Layout Alternative 1		No-Go Alternative	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Extent	1	1		
Duration	5	5		
Magnitude	4	1		
Probability	5	4		
Significance	50 - Medium	28 – Low		
Status	Medium Negative Significance without Mitigation	Low Negative Significance with Mitigation		
Reversibility	100% Reversible			
Irreplaceable loss of resources	2 – Partly, some loss of indigenous vegetation will occur but will be limited.			
Can impacts be mitigated?	2 – Partly, some loss of indigenous vegetation will occur but will be limited.			

Not Applicable (No construction activities to take place during the No-Go Alternative)

Nature of potential impact:

Impacts of construction activities on indigenous fauna and avifauna Species of Conservation Concern

Discussion:

No fauna or avifauna species of conservation concern was recorded within the proposed development site during the time of the surveys however fauna and avifauna species of conservation concern are present within the national park i.e. Bontebok. Evidence of mole heaps, termites, mice and weasels were also observed throughout the site. The proposed development areas are however also located on and adjacent to the existing Die Stroom picnic site and the ongoing human activities within this area makes it highly unlikely that the particular proposed development site is being used as preferred breeding or nesting areas for the indigenous fauna and avifauna species and these areas will most likely only be occasionally visited by fauna and avifauna species when looking for food. It is therefore also highly unlikely that any fauna or avifauna species of conservation concern or their associated preferred habitat and breeding areas will be significantly impacted by the proposed development.

There is also a probability that at least some animal and/or bird SCCs known to occur within the general area may frequent the site and surrounds. Apart from the Bontebok antelope these SCC are also likely to include Denham's Bustard (*Neotis denhami*) and Black Harrier (*Circus maurus*), however the construction and operational phase of the proposed developments are not expected to impact on the presence and habits of these species any more than the current picnic site activities are impacting upon them.

Bontebok *Damaliscus pygargus pygargus* was assessed having a high sensitivity rating. There are recent records of bontebok within the Die Stroom picnic site. Based on the available information, the proposed footprint is within confirmed habitat for an SCC and the sensitivity therefore be rated as high in accordance with the protocols. Since the bontebok is known to be at the stroom area, it is proof that they area adapted and that the human activities do not impact on them. Furthermore, the park is responsible for the management of this species and the current management actions are sufficient and appropriate which is evidence of them being in the area. The swimming pool and parking area will take up a small area of their habitat and they will not be affected.

African Marsh Harrier *Circus ranivorus* and Black Harrier *Circus ranivorus* was assessed having a medium sensitivity rating. These species was not recorded on site and only likely to roam the area. *Rhabdomys pumilio* (although not recorded its presence is know from historic visits) is expected to occur in the project area suggesting that it could use the project area for foraging. Primary nesting habitat is not present on the impacted areas. They will simply move into the bigger surrounding area during construction. The current picnic site and activities already impacted on them.

The other species mapped in the screen tool report or known to be in the area was assessed to have a low sensitivity.

The development of the site would have a **Low Negative** impact on animal species. The proposed development will have relatively little animal species impacts provided that appropriate management measures included in the EMPr and adhered to.

Cumulative impacts:

Potential cumulative impacts of the construction activities may be loss or disturbance to fauna and avifauna species of conservation concern

Mitigation:

- Clearance of indigenous vegetation must be kept to a minimum clearly demarcating the proposed development area before construction commencement, maintaining the demarcation throughout the construction phase and only clearing the area required for the development.
- All unused construction materials must be removed from site immediately after construction completion.
- No waste pollution may occur due to the construction activities and all waste must be contained and disposed of at the municipal landfill site on a daily basis.
- All landscaping of undeveloped and areas disturbed during construction must be done with indigenous vegetation. .
- Construction activities must be completed as quickly as possible to limit disturbance caused to animal and bird life as far as possible
- No trapping, hunting or any injury to animal or birdlife may occur during construction activities.
- Search and rescue operations must be conducted before site clearance activities commences and should any local animal or birdlife be found within the construction area they must be carefully moved to the adjacent natural areas by park management not to be impacted upon.

Criteria	Layout Alternative 1		No-Go Alternative	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Extent	2	2		
Duration	1	1		
Magnitude	6	6		
Probability	3	3		
Significance	27 – Low	27 – Low		
Status	Low Negative Significance without Mitigation	Low Negative Significance with Mitigation		
Reversibility	100% Reversible			
Irreplaceable loss of resources	2 – Partly, some disturbance will occur but will be limited.			
Can impacts be mitigated?	2 – Partly, some disturbance will occur but will be limited.			

Not Applicable (No construction activities to take place during the No-Go Alternative)

(b) Impacts that may result from the **operational phase** (briefly describe and compare impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation

that are likely to occur as a result of the operational phase.

Nature of potential impact:

Impacts of operational activities on the indigenous animal and bird life including species of conservation concern.

Discussion:

Ongoing human activities on the site and surrounds due to it being used as a picnic site may lead to disturbances to animal and birdlife if not properly managed. However, the site has already been managed by park management for a number of years and will continue to be managed as such once additional developments have been completed.

There is also a probability that at least some animal and/or bird SCCs known to occur within the general area may frequent the site and surrounds. Apart from the Bontebok antelope these SCCs are also likely to include Denham's Bustard (*Neotis denhami*) and Black Harrier (*Circus maurus*), however the construction and operational phase of the proposed developments are not expected to impact on the presence and habits of these species any more than the current picnic site activities are impacting upon them.

Bontebok *Damaliscus pygargus pygargus* was assessed having a high sensitivity rating. There are recent records of bontebok within the Die Stroom picnic site. Based on the available information, the proposed footprint is within confirmed habitat for an SCC and the sensitivity therefore be rated as high in accordance with the protocols. Since the bontebok is known to be at the stroom area, it is proof that they are adapted and that the human activities do not impact on them. Furthermore, the park is responsible for the management of this species and the current management actions are sufficient and appropriate which is evidence of them being in the area. The swimming pool and parking area will take up a small area of their habitat and they will not be affected.

African Marsh Harrier *Circus ranivorus* and Black Harrier *Circus ranivorus* was assessed having a medium sensitivity rating. These species were not recorded on site and are only likely to roam the area. *Rhabdomys pumilio* (although not recorded its presence is known from historic visits) is expected to occur in the project area suggesting that it could use the project area for foraging. Primary nesting habitat is not present on the impacted areas. They will simply move into the bigger surrounding area during construction. The current picnic site and activities already impacted on them.

Cumulative impacts:

Cumulative impacts of the operational activities on animal and bird life will be disturbances caused to local animal and bird life due to ongoing human activities such as recreational use of the swimming pool and facilities provided.

Mitigation:

- No trapping, hunting or any injury to animal or birdlife may occur during operational activities. Should any local animal or birdlife be found within the fenced swimming pool area during operational activities they must either be left undisturbed or carefully be moved to the adjacent natural areas by park management not to be impacted upon.
- The discharge of stormwater and management of effluent must not lead to waste pollution or erosion of surrounding indigenous vegetation areas.
- Ongoing monitoring of erosion within and around the development site and should any signs of erosion be detected immediate rectification and further prevention measures must be put in place under the guidance of a qualified ecological specialist so as to prevent any additional cumulative impacts on the environment.
- The impacted site must be monitored for alien vegetation encroachment and should alien vegetation encroach on the impacted site it must be removed and monitored in accordance with the parks alien vegetation management plan.
- All infrastructure and developments must be maintained in a good working condition not leading to any environmental degradation.
- Good waste management practices must be implemented not allowing any waste to accumulate or be disposed of in surrounding natural areas or landscaped indigenous vegetation areas.
- No high intensity lights may be left on during the night that shines outwards onto the adjacent indigenous vegetation areas as this will lead to light pollution impacting on especially nocturnal animal and bird species.

- Undeveloped and landscaped indigenous vegetation areas on the property must be maintained in such a manner that the use of the facilities at Die Stroom picnic site does not lead to destruction of any additional indigenous vegetation. To achieve this the park must maintain the swimming pool fencing, remove any alien vegetation on the which may encroach on natural areas, make sure that planted indigenous grass does not encroach on adjacent undeveloped and landscaped indigenous vegetation areas and place sign boards conspicuously along the edge of the undeveloped areas indicating that indigenous vegetation may not be picked/destroyed and is to be conserved at all times.

Criteria	Layout Alternative 1		No-Go Alternative	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Extent	2	1		
Duration	5	5		
Magnitude	6	2		
Probability	3	2		
Significance	39 – Medium	16 – Low		
Status	Medium Negative Significance without Mitigation	Low Negative Significance with Mitigation		
Reversibility	100% Reversible			
Irreplaceable loss of resources	2 – Partly, some loss of indigenous vegetation will occur but will be limited.			
Can impacts be mitigated?	2 – Partly, some loss of indigenous vegetation will occur but will be limited.			

Not Applicable (No construction activities to take place during the No-Go Alternative)

(c) Impacts that may result from the **No-Development Option**

If the proposed Die Stroom picnic site swimming pool, recreational facilities and infrastructure upgrades are not to proceed it is not expected that any significant detrimental impacts will occur in terms of the terrestrial features of the site and surrounds and processes will continue as is. However, the aim of the proposed swimming pool and picnic area upgrade next to the Breerivier is to enhance the experience of the local community and visitors use to visiting the site and provide safer conditions for swimming etc. It is also proposed to provide much needed additional public ablution facilities, additional parking areas and formal picnic areas to prevent the public from impacting on the surrounding natural vegetation areas like parking within natural areas because there are currently not enough formal facilities provided at the popular picnic spot, hence potentially decreasing terrestrial biodiversity impacts due to uncontrolled human activities in the long term.

Cumulative Impacts

Cumulative impacts arise from the combined presence of several similar developments within an area which affect animal species. There are other developments that also represents a source of disturbance and habitat loss, which when combined with the proposed development would result in some cumulative impact. However, when taken in context of the broader landscape, the cumulative impacts are not likely to be highly significant given the animal species known to occur in the broader area.

3. CONCLUSION AND RECOMMENDATIONS

The sampling and analysis of the site during the optimum season and year, provides suitable data and results to present an informed decision on the local animal species. The lists of species for the site are based on those observed at the site, during the survey and previously, as well as those likely to occur in the area based on their distribution and habitat preferences. This represents a sufficiently conservative and cautious approach. During the site visit, the different biodiversity features, habitat, vegetation and landscape units present were identified and recorded in the field. Walk-through-surveys were conducted of representative habitats and areas of interest and species observed were recorded. Searches for listed species of conservation concern at the site were conducted.

The habitat was assessed to have a high sensitivity due to the presence of endangered vegetation type and it is located in the Bontebok National Park. The Bontebok National Park Management Plan (2013 – 2023) refers to a day visitor facility and picnic area in the concept development plan for development within the timeframes of the plan and is included in the associated map (SANParks 2013). The location is within the low intensity leisure zone. The development proposal can therefore be considered to be aligned to the management plan at a broad scale.

Bontebok *Damaliscus pygargus pygargus* was assessed having a high sensitivity rating. There are recent records of bontebok within the Die Stroom picnic site. Based on the available information, the proposed footprint is within confirmed habitat for an SCC and the sensitivity therefore be rated as high in accordance with the protocols. Since the bontebok is known to be at the stroom area, it is proof that they area adapted and that the human activities do not impact on them. Furthermore, the park is responsible for the management of this species and the current management actions are sufficient and appropriate which is evidence of them being in the area. The swimming pool and parking area will take up a small area of their habitat and they will not be affected.

African Marsh Harrier *Circus ranivorus* and Black Harrier *Circus ranivorus* was assessed having a medium sensitivity rating. These species was not recorded on site and only likely to roam the area. *Rhabdomys pumilio* (although not recorded its presence is know from historic visits) is expected to occur in the project area suggesting that it could use the project area for foraging. Primary nesting habitat is not present on the impacted areas. They will simply move into the bigger surrounding area during construction. The current picnic site and activities already impacted on them.

The other species mapped in the screen tool report or known to be in the area was assessed to have a low sensitivity.

The development of the site would have a **Low Negative** impact on animal species. The proposed development will have relatively little animal species impacts provided that appropriate management measures included in the EMPr and adhered to.

Mitigation measures proposed:

- Clearance of indigenous vegetation must be kept to a minimum clearly demarcating the proposed development area before construction commencement, maintaining the demarcation throughout the construction phase and only clearing the area required for the development.
- All unused construction materials must be removed from site immediately after construction completion.
- No waste pollution may occur due to the construction activities and all waste must be contained and disposed of at the municipal landfill site on a daily basis.
- All landscaping of undeveloped and areas disturbed during construction must be done with indigenous vegetation.
- Construction activities must be completed as quickly as possible to limit disturbance caused to animal and bird life as far as possible.
- No trapping, hunting or any injury to animal or birdlife may occur during construction activities.
- Search and rescue operations must be conducted before site clearance activities commences and should any local animal or birdlife be found within the construction area they must be carefully moved to the adjacent natural areas by park management not to be impacted upon.
- No trapping, hunting or any injury to animal or birdlife may occur during operational activities. Should any local animal or birdlife be found within the fenced swimming pool area during operational activities they must either be left undisturbed or carefully be moved to the adjacent natural areas by park management not to be impacted upon.
- The discharge of stormwater and management of effluent must not lead to waste pollution or erosion of surrounding indigenous vegetation areas.
- Ongoing monitoring of erosion within and around the development site and should any signs of erosion be detected immediate rectification and further prevention measures must be put in place under the guidance of a qualified ecological specialist so as to prevent any additional cumulative impacts on the environment.
- The impacted site must be monitored for alien vegetation encroachment and should alien vegetation encroach on the impacted site it must be removed and monitored in accordance with the parks alien vegetation management plan.
- All infrastructure and developments must be maintained in a good working condition not leading to any environmental degradation.
- Good waste management practices must be implemented not allowing any waste to accumulate or be disposed of in surrounding natural areas or landscaped indigenous vegetation areas.
- No high intensity lights may be left on during the night that shines outwards unto the adjacent indigenous vegetation areas as this will lead to light pollution impacting on especially nocturnal animal and bird

species.

- Undeveloped and landscaped indigenous vegetation areas on the property must be maintained in such a manner that the use of the facilities at Die Stroom picnic site does not lead to destruction of any additional indigenous vegetation. To achieve this the park must maintain the swimming pool fencing, remove any alien vegetation on the which may encroach on natural areas, make sure that planted indigenous grass does not encroach on adjacent undeveloped and landscaped indigenous vegetation areas and place sign boards conspicuously along the edge of the undeveloped areas indicating that indigenous vegetation may not be picked/destroyed and is to be conserved at all times.

No additional survey or further assessment is in the authors view recommended.

Provided that activities are restricted to the site and the mitigation measures to reduce the impacts of the activities are implemented, then the activities are not likely to result in long-term degradation of the receiving environment or significant net loss of SCC animal species.

AQUATIC BIODIVERSITY IMPACT ASSESSMENT PROPOSED SWIMMING POOL, RECREATIONAL FACILITIES AND ASSOCIATED INFRASTRUCTURE AT DIE STROOM PICNIC SITE IN THE BONTEBOK NATIONAL PARK ON ERF RE/5338, SWELLENDAM – NICOLAAS HANEKOM – MAY 2025

AQUATIC BIODIVERSITY IMPACTS ASSESSMENT

(a) Impacts that may result from the planning, design and **construction phases** (briefly describe and compare the impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that may occur as a result of the planning, design and construction phases.

Nature of impact:

Increase in and accumulation of storm water runoff

Discussion:

Removal of vegetated areas may cause an increase in storm water runoff and excavations may lead to accumulation/damming thereof on the site and surrounds.

Cumulative impacts:

Increase in storm water runoff could cause erosion and/or damming of water which may lead to additional negative impacts like further habitat degradation and transformation.

Mitigation:

- Undertake storm water management measures as recommended in the environmental management program.
- Monitor for erosion. Should erosion be present, undertake maintenance activities to rectify and prevent further erosion.
- Demarcate no-go areas before construction commences and maintain demarcation throughout construction phase.
- All roads need to be maintained and monitored. Visible signs of possible erosion must be immediately rehabilitated.
- Monitor impacted areas for erosion and accumulation of water on an ongoing basis and implement mitigation measures as and if required.
- Stormwater discharge flow must be managed and restricted in such a manner that it does not cause erosion.
- Rehabilitate or stabilise eroded areas immediately to prevent increase/spread of erosion.
- Appropriate and effective storm water management measures must be put in place to ensure that erosion and environmental degradations outside of the proposed development footprint area does not occur, but the storm water measures implemented must not impede storm water flow to such an extent that it is completely stopped. Current hydrological processes outside of the proposed development footprint area must continue to function as is.
- Conduct and complete construction activities as far as possible during the dry summer months.
- Only excavate materials from proposed construction sites as according to approved layout plans.
- Do not remove any plant or soil materials from outside of the development areas.

- Do not create any additional access routes.

Criteria	Layout Alternative 1		No-Go Alternative	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Extent	2	1		
Duration	5	2		
Magnitude	10	6		
Probability	5	3		
Significance	85 - High	27 - Low		
Status	High negative significance if not mitigated	Low negative significance if mitigated		
Reversibility	100%			
Irreplaceable loss of resources	2 Partly – While increase in storm water runoff is inevitable erosion can still be prevented and mitigated if required.			
Can impacts be mitigated?	2 Partly – While increase in storm water runoff is inevitable erosion can still be prevented and mitigated if required.			

Neutral (Site remains as is)

Nature of potential impact:

Impacts of construction activities on the hydrological functioning of the site and surrounds which includes the Breerivier and a non-perennial tributary

Discussion:

Construction activities may temporarily impact hydrological processes i.e. stormwater runoff.

Cumulative impacts:

Due to removal of indigenous vegetation stormwater runoff on the exposed surfaces may lead to erosion of the site and surrounds and stormwater runoff may follow “new” flow paths altering the current hydrological processes of the site and surrounds

Mitigation:

- Clearance of indigenous vegetation must be kept to a minimum clearly demarcating the proposed development area before construction commencement, maintaining the demarcation throughout the construction phase and only clearing the area required for the development.
- Construction activities must be completed as quickly as possible to limit disturbance caused ecology as far as possible.
- All unused construction materials must be removed from site immediately after construction completion.
- No concrete/cement mixing may take place on any permeable soil surface and must at all times be contained within an impermeable mixing area and no mixing waste water may enter the environment.
- No waste pollution may occur due to the construction activities and all waste must be contained and disposed of at the municipal landfill site on a daily basis.
- Revegetation of the impacted undeveloped areas must be done as soon as possible after construction completion and only indigenous vegetation species may be used for rehabilitation and landscaping.

Criteria	Layout Alternative 1		No-Go Alternative	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Extent	2	1		
Duration	1	1		
Magnitude	6	2		
Probability	5	2		
Significance	45 - Medium	8 - Low		
Status	Medium Negative	Low Negative		

Not Applicable (No construction activities to take place during the No-Go Alternative)

	Significance without Mitigation	Significance with Mitigation			
Reversibility	100% Reversible				
Irreplaceable loss of resources	2 – Partly, some loss of indigenous vegetation will occur but will be limited.				
Can impacts be mitigated?	2 – Partly, some loss of indigenous vegetation will occur but will be limited.				

(b) Impacts that may result from the **operational phase** (briefly describe and compare impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the operational phase.

Nature of impact: Increase in storm water runoff due to removal of vegetation and hardening of surfaces which may lead to erosion of surrounding areas						
Discussion: Due to the removal of vegetation and hardening of surfaces the stormwater discharge may lead to erosion of surrounding environments if not mitigated.						
Cumulative impacts: Erosion may lead to loss in topsoil and impact on surrounding undeveloped natural areas.						
Mitigation:						
<ul style="list-style-type: none"> Stormwater discharge flow must be managed and restricted in such a manner that it does not cause erosion. Rehabilitate or stabilise eroded areas immediately to prevent increase/spread of erosion. Stormwater infrastructure must not cause erosion of the surrounding remaining undeveloped areas, but still allow current hydrological processes to continue as is. Park management must maintain all stormwater infrastructure on a regular basis to ensure that it is working effectively and is not blocked with waste and is not causing erosion. 						
	Layout Alternatives 1				No-Go Alternative	
Criteria	Without Mitigation	With Mitigation			Without Mitigation	With Mitigation
Extent	3	1			Neutral (Site remains as is)	
Duration	5	1				
Magnitude	6	2				
Probability	4	2				
Significance	56 - Medium	8 - Low				
Status	Medium negative significance if not mitigated	Low negative significance if mitigated				
Reversibility	100%					
Irreplaceable loss of resources	2 Partly – While increase in storm water runoff is inevitable erosion can still be prevented and mitigated if required.					
Can impacts be mitigated?	2 Partly – While increase in storm water runoff is inevitable erosion can still be prevented and mitigated if required.					
Nature of potential impact: Impacts of operational activities on the hydrological functioning of the site and surrounds						
Discussion: Operational activities may impact hydrological processes i.e. stormwater runoff within the non-perennial drainage line.						

Cumulative impacts:

Due to removal of indigenous vegetation stormwater runoff on the exposed areas may lead to erosion of the site and surrounds and stormwater runoff may follow “new” flow paths altering the current hydrological processes of the site and surrounds

Mitigation:

- The discharge of stormwater must not lead to waste pollution of the surrounding environments.
- Discharge of stormwater must be controlled and must be done in such a manner that it does not cause erosion of the site or surrounds, should any erosion be detected this must be rectified immediately and prevention measures must be put in place.
- All stormwater infrastructure must be maintained in a good condition not leading to any environmental degradation.

Criteria	Layout Alternative 1		No-Go Alternative	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Extent	2	1		
Duration	5	1		
Magnitude	6	2		
Probability	5	2		
Significance	65 - High	8 – Low		
Status	High Negative Significance without Mitigation	Low Negative Significance with Mitigation		
Reversibility	100% Reversible			
Irreplaceable loss of resources	2 – Partly, some loss of indigenous vegetation will occur but will be limited.			
Can impacts be mitigated?	2 – Partly, some loss of indigenous vegetation will occur but will be limited.			

Not Applicable (No construction activities to take place during the No-Go Alternative)

Nature of potential impact:

Impacts of operational activities of the picnic site, swimming pool, ablution facilities and associated soakaway on surface and groundwater resources.

Discussion:

As far as possible the proposed development has been placed on already cleared and impacted areas and along existing roads and pipeline routes to minimise impacts on the natural watercourses. The proposed development is also to be located behind the existing picnic area, outside of the 1:100 year floodline area of the Breerivier and the soakaway is proposed adjacent to the existing soakaway away from the Breerivier tributary and non-perennial drainage line crossing the site.

The proposed development is not expected to impact on the quality of the surface or groundwater water if property managed. The depth of the groundwater on site is 31.15 meters below ground level (mbgl). The Aquifer is classified as a minor aquafer with ground water quality of EC (mS/m) 370 – 520. The soils are shallow (< 450 mm) on hard or weathering rock, with or without intermittent diverse soils. Lime generally present in part or most of the landscape. The clay content of these soils is < 15%. The soakaway will be located next to the existing soakaway. It will be above the groundwater level, which is approximately 31 mbgl with a significant buffer area and protected by impermeable hard

weathered rock. The seep of the overflow of the soakaway will flow above the impermeable hard weathered rock with a subsurface hydrological flow in the subsurface shallow (< 450 mm) Glenrosa and/or Mispah soil layer.

Cumulative impacts:

Cumulative impacts of the operational activities of the picnic site and associated infrastructure are related to polluted discharge from the new facilities which may cause pollution of the groundwater and surface water resources within the area.

Mitigation:

- Clearance of indigenous vegetation and physical disturbance on site must be kept to a minimum clearly demarcating the proposed development area before construction commencement, maintaining the demarcation throughout the construction phase and only clearing the area required for the development.
- All unused construction materials must be removed from site immediately after construction completion.
- No waste pollution may occur due to the construction activities and all waste must be contained and disposed of at the municipal landfill site on a daily basis.
- All landscaping of undeveloped and areas disturbed during construction must be done with indigenous vegetation.
- Grass for landscaping must be limited to *Cynodon dactylon* (kweekgras) or *Panicum maximum* (buffelsgras), no kikuyu grass (*Pennisetum clandestinum*) may be used or planted for landscaping of disturbed areas.
- Planted grass such as for the proposed picnic area must be prevented from encroaching further into the remaining and rehabilitating indigenous vegetation landscaped and undeveloped areas.
- The discharge of stormwater must not lead to waste pollution or erosion of surrounding undeveloped areas.
- Ongoing monitoring of erosion within and around the development site and should any signs of erosion be detected immediate rectification and further prevention measures must be put in place under the guidance of a qualified ecological specialist so as to prevent any additional cumulative impacts on the environment.
- The impacted site must be monitored for alien vegetation encroachment and should alien vegetation encroach on the impacted site it must be removed and monitored in accordance with parks alien vegetation management plan.
- All infrastructure and developments must be maintained in a good working condition not leading to any environmental degradation.
- Swimming pool water and sewage may not be discharged into the environment and must be managed in a closed system which must be maintained and monitored for leakages.
- No high intensity lights may be left on during the night that shines outwards as this will lead to light pollution impacting on especially nocturnal aquatic animal and bird species.
- Use only existing access roads and do not create any new access roads to proposed development sites especially through the drainage line.
- No pollution of surface water or ground water resources may occur due to activities on the property and soakaway discharge must monitored and if any signs of pollution is detected rectification measures must be implemented.

Criteria	Layout Alternative 1		No-Go Alternative	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
Extent	2	1		
Duration	5	5		
Magnitude	4	2		
Probability	5	2		

Not Applicable (No construction activities to take place during the No-Go Alternative)

Significance	55 – Medium	16 – Low		
Status	Medium Negative Significance without Mitigation	Low Negative Significance with Mitigation		
Reversibility	100% Reversible			
Irreplaceable loss of resources	2 – Partly, some disturbance will occur but will be limited.			
Can impacts be mitigated?	2 – Partly, some disturbance will occur but will be limited.			

Cumulative Impacts

Cumulative impacts arise from the combined presence of several similar developments within an area which affect aquatic biodiversity and ecological processes operating at broader scales or which each have a small impact which becomes significant when combined. There are other developments that also represents a source of disturbance and habitat loss, which when combined with the proposed development would result in some cumulative impact. However, when taken in context of the broader landscape, the cumulative impacts are not likely to be highly significant given the aquatic biodiversity features of the area.

4. CONCLUSION AND RECOMMENDATIONS

Enviro-EAP (Pty) Ltd was appointed to undertake a Present Ecological State (PES) and Ecological Importance and Sensitivity (EIS) analysis of the freshwater and riparian resources.

NFEPA wetlands were mapped associated with the Breede river and its flood plain. The delineated wetlands are all located within the 1:100 year flood line and not on the development area. There are no aquatic biodiversity features in the development area. The closest is the non-perennial river which is in a high ecological state. However, the non-perennial river is traversed by the existing access roads at two locations and inundated next to the Breede River. The electrical cable and potable water and wastewater pipelines will be located within the disturbance footprint of the access road which traverses the non-perennial river. Existing culverts under the roads allow for adequate flow of water under the roads. The one parking area is the closest to the non-perennial river and riparian area. The parking lot avoids the watercourse and an appropriate buffer is between the non-perennial river and parking lot.

The proposed development is not expected to impact on the quality of the surface or groundwater water if property managed. The depth of the groundwater on site is 31.15 meters below ground level (mbgl). The Aquifer is classified as a minor aquafer with ground water quality of EC (mS/m) 370 – 520. The soils are shallow (< 450 mm) on hard or weathering rock, with or without intermittent diverse soils. Lime generally present in part or most of the landscape. The clay content of these soils is < 15%. The soakaway will be located next to the existing soakaway. It will be above the groundwater level, which is approximately 31 mbgl with a significant buffer area and protected by impermeable hard weathered rock. The seep of the overflow of the soakaway will flow above the impermeable hard weathered rock with a subservice hydrological flow in the in the subsurface shallow (< 450 mm) Glenrosa and/or Mispah soil layer.

The information gathered from the site survey does not differ from the Environmental Screen report. The development of the site as per the proposed development will have a **low negative** impact on aquatic biodiversity due to the transformed nature of the site.

The following mitigation measures is proposed to avoid impacts and where avoidance is not possible to mitigate the significance of the potential impacts on surface and groundwater resources:

- Undertake storm water management measures as recommended in the environmental management program.

- Monitor for erosion. Should erosion be present, undertake maintenance activities to rectify and prevent further erosion.
- Demarcate no-go areas before construction commences and maintain demarcation throughout construction phase.
- All roads need to be maintained and monitored. Visible signs of possible erosion must be immediately rehabilitated.
- Monitor impacted areas for erosion and accumulation of water on an ongoing basis and implement mitigation measures as and if required.
- Stormwater discharge flow must be managed and restricted in such a manner that it does not cause erosion.
- Rehabilitate or stabilise eroded areas immediately to prevent increase/spread of erosion.
- Appropriate and effective storm water management measures must be put in place to ensure that erosion and environmental degradations outside of the proposed development footprint area does not occur, but the storm water measures implemented must not impede storm water flow to such an extent that it is completely stopped. Current hydrological processes outside of the proposed development footprint area must continue to function as is.
- Conduct and complete construction activities as far as possible during the dry summer months.
- Only excavate materials from proposed construction sites as according to approved layout plans.
- Do not remove any plant or soil materials from outside of the development areas.
- Do not create any additional access routes.
- Clearance of indigenous vegetation and physical disturbance on site must be kept to a minimum clearly demarcating the proposed development area before construction commencement, maintaining the demarcation throughout the construction phase and only clearing the area required for the development.
- Construction activities must be completed as quickly as possible to limit disturbance caused ecology as far as possible.
- No concrete/cement mixing may take place on any permeable soil surface and must at all times be contained within an impermeable mixing area and no mixing waste water may enter the environment.
- No waste pollution may occur due to the construction activities and all waste must be contained and disposed of at the municipal landfill site on a daily basis.
- Revegetation of the impacted undeveloped areas must be done as soon as possible after construction completion and only indigenous vegetation species may be used for rehabilitation and landscaping.
- All unused construction materials must be removed from site immediately after construction completion.
- No waste pollution may occur due to the construction activities and all waste must be contained and disposed of at the municipal landfill site on a daily basis.
- All landscaping of undeveloped and areas disturbed during construction must be done with indigenous vegetation.
- Grass for landscaping must be limited to *Cynodon dactylon* (kweekgras) or *Panicum maximum* (buffelsgras), no kikuyu grass (*Pennisetum clandestinum*) may be used or planted for landscaping of disturbed areas.
- Planted grass such as for the proposed picnic area must be prevented from encroaching further into the remaining and rehabilitating indigenous vegetation landscaped and undeveloped areas.
- The discharge of stormwater must not lead to waste pollution or erosion of surrounding undeveloped areas.
- Ongoing monitoring of erosion within and around the development site and should any signs of erosion be detected immediate rectification and further prevention measures must be put in place under the guidance of a qualified ecological specialist so as to prevent any additional cumulative impacts on the environment.
- The impacted site must be monitored for alien vegetation encroachment and should alien vegetation encroach on the impacted site it must be removed and monitored in accordance with parks alien vegetation management plan.
- All infrastructure and developments must be maintained in a good working condition not leading to any environmental degradation.
- Swimming pool water and sewage may not be discharged into the environment and must be managed in a closed system which must be maintained and monitored for leakages.

- No high intensity lights may be left on during the night that shines outwards as this will lead to light pollution impacting on especially nocturnal aquatic animal and bird species.
- Use only existing access roads and do not create any new access roads to proposed development sites especially through the drainage line.
- No pollution of surface water or ground water resources may occur due to activities on the property and soakaway discharge must be monitored and if any signs of pollution is detected rectification measures must be implemented.
- Discharge of stormwater must be controlled and must be done in such a manner that it does not cause erosion of the site or surrounds, should any erosion be detected this must be rectified immediately and prevention measures must be put in place.
- All stormwater infrastructure must be maintained in a good condition not leading to any environmental degradation.

Heritage Impact Assessment, August 2024, Jonathan Kaplan ACRM (and Prof Marion Bamford)

Archaeology

A field assessment of the Project Area was conducted by ACRM on the 3rd August 2024. The following heritage resources were recorded.

- An Early Stone Age prepared (or Levallois) core, a Middle Stone Age flake and a cortex chunk (all in locally available quartzite) were recorded during the field assessment, but no evidence of any pre-colonial human occupation or settlement was encountered.
- A discontinuous line of sandstone rock measuring ± 120m long was recorded in a disturbed section through the veld where the proposed new soakaway pipelines will be laid alongside the existing soakaway pipeline. No evidence of any kraal, or structure was found. No cultural remains were found, either. The 'feature' will not be impacted by the proposed new pipeline.

No impact on important archaeological resources is anticipated.

Grading

The very small number means that the archaeological resources have been graded as Not Conservation Worthy (NCW). The stone 'feature' has also been graded NCW.

Palaeontology

According to consulting palaeontologist, Marion Bamford (2024), the study site lies on Quaternary river terrace gravels of unknown palaeosensitivity. These sediments have been reworked and redeposited by the river action in the past and so their origin and context are unknown. The main group presented is the Bredasdorp Group, but according to Bamford (2024), it is not always possible to distinguish the formations, hence the sands along the Brede River are indicated as 'undifferentiated sand, loam or sandy loam'. Bamford (2024) notes that marine and terrestrial invertebrate shells of different species occur in the different formations of the Bredasdorp Group, but along the naturally disturbed rivers the high energy flow and flooding mixes the sediments and fragments, of any fossils within.

According to Bamford (2024), 'it is (therefore) very unlikely that any intact fossil occurs in the river terrace gravels along the Brede River'. Hence, the palaeosensitivity of the study site is indicated as unknown (white) on the SAHRIS palaeosensitivity map. Furthermore, 'If any fossils have been eroded, transported and deposited along the Brede River, they would be very fragmented and of limited scientific value' (Bamford 2024:2).

According to Bamford (2024:13), '...there is an extremely small chance that fossils from inland may have washed down the river and been buried on the terraces...' (Therefore), 'the potential impact to fossil heritage resources is extremely low'.

Built Environment

Apart from the existing infrastructure at Die Stroom Picnic Site, there are no old buildings, structures or ruins in the Project area.

Graves

No graves or typical grave features such as stone cairns were encountered during the field assessment.

Cultural Landscape

Bontebok National Park was established in 1931 with the main focus being protecting the near-extinct Bontebok. It is the smallest of South Africa's 19 National Parks, covering an area of 27.86 km². The Park is part of the Cape Floristic Region, which is a World Heritage Site.

Conclusion

The specialist study has identified no significant impact to Stone Age archaeological resources that will need to be, mitigated prior to construction excavations commencing. According to Bamford (2024), 'no further palaeontological impact assessment is required'.

Recommendations

Archaeology - No further mitigation is required. No monitoring is required during construction phase excavations. If any buried human remains are uncovered during construction excavations, these must be immediately reported to the archaeologist (J Kaplan 0823210172. Burials must not be disturbed until inspected by the archaeologist.

Palaeontology - The Fossil Chance Find Protocol should be added to the EMP (Bamford 2024).

The above recommendations must be included in the Environmental Management Plan for the project, and must be monitored by the Environmental Control Office

2.	List the impact management measures that were identified by all Specialist that will be included in the EMPr
All recommendations and impact management measures as provided by specialists and listed above have been included in the EMPr.	
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.
Not applicable.	
4.	Explain how the proposed development will impact the surrounding communities.
Potential impacts on the surrounding communities were assessed in detail under Appendix J – refer to Section H4 for a summary of all the potential impacts assessed.	
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.
It is not expected that the proposed picnic site developments will contribute to climate change.	
6.	Explain whether there are any conflicting recommendations between the specialists. If so, explain how these have been addressed and resolved.
There are no conflicting recommendations between specialists findings.	
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 specialists' recommendations have been included in the EMPr requirements and informed the preferred location, layout, operational and activity alternatives as proposed.	
8.	Explain how the mitigation hierarchy has been applied to arrive at the best practicable environmental option.
The key mitigation measures recommended should be impact avoidance. Where adverse impacts cannot reasonably be avoided, the activities should be managed through the effective implementation of the EMP with a strong emphasis on post-construction rehabilitation where required.	
In order to determine the best practicable environmental option for the development proposal the site was assessed by the EAP and specialists and all potential environmental constraints were identified to avoid negative impacts. Impacts identified that could not be avoided have been mitigated and managed as per the EMPr requirements.	
As such the mitigation hierarchy has been effectively applied to this development proposal resulting in the best practicable environmental option (preferred alternative) presented for consideration by the competent authority.	

SECTION J: GENERAL

1. Environmental Impact Statement

1.1.	Provide a summary of the key findings of the EIA.
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The impact assessment findings for the preferred site, activity and layout alternative before and after recommended mitigation is summarised below.

CONSTRUCTION PHASE- LAYOUT ALTERNATIVE 1

- Disturbance to subsurface geological layers (medium negative impact before mitigation and low negative impact with mitigation measures);
- Soil erosion (medium negative impact before mitigation and low negative impact with mitigation measures);
- Compaction of soil (medium negative impact before mitigation and low negative impact with mitigation measures);
- Increase in and accumulation of stormwater runoff (high negative impact before mitigation and low negative impact with mitigation measures);
- Impacts of construction activities on the hydrological functioning of the site and surrounds which includes the Breerivier and a non-perennial tributary (medium negative impact before mitigation and low negative impact with mitigation measures);
- Impacts of construction activities on indigenous vegetation associated with Endangered – Swellendam Silcrete Fynbos also part of a mapped Protected Area (medium negative impact before mitigation and low negative impact with mitigation measures);
- Impacts of construction activities on indigenous vegetation Species of Conservation Concern (low negative impact before mitigation and low negative impact with mitigation measures);
- Impacts of construction activities on indigenous fauna and avifauna habitat associated with Endangered – Swellendam Silcrete Fynbos as part of a mapped Protected Area (medium negative impact before mitigation and low negative impact with mitigation measures)
- Impacts of construction activities on indigenous fauna and avifauna Species of Conservation Concern (low negative impact before mitigation and low negative impact with mitigation measures)
- Introduction of alien and weed plant species (medium negative impact before mitigation and low negative impact with mitigation measures)
- Increased temporary construction jobs (low positive impact)
- Increased traffic due to the construction activities requiring various vehicles to come onto and leave the site. (medium negative impact before mitigation and low negative impact with mitigation measures)
- Impact of litter or waste from the construction site on the surrounding communities (medium negative impact before mitigation and low negative impact with mitigation measures)
- Dust and emissions pollution arising from ground clearing and other construction activities (medium negative impact before mitigation and low negative impact with mitigation measures)
- The potential impact of the proposed development on archaeological, paleontological and heritage remains (high negative impact before mitigation and low negative impact with mitigation measures)
- The potential impact of the proposed development on the Outstanding Universal Value of a World Heritage Site (medium negative impact before mitigation and low negative impact with mitigation measures)
- Noise due to construction machinery (low negative impact before mitigation and low negative impact with mitigation measures)
- Visual impact of construction of proposed serviced erven (medium negative impact before mitigation and low negative impact with mitigation measures)

OPERATIONAL PHASE- LAYOUT ALTERNATIVE 1

- Increase in storm water runoff due to removal of vegetation and hardening of surfaces which may lead to erosion of surrounding areas (medium negative impact before mitigation and low negative impact with mitigation measures);
- Impacts of operational activities on the hydrological functioning of the site and surrounds (high negative impact before mitigation and low negative impact with mitigation measures);
- Impacts of operational activities of the picnic site, swimming pool, ablution facilities and associated soakaway on surface and groundwater resources (medium negative impact before mitigation and low negative impact with mitigation measures)
- Impacts of operational activities on remaining and surrounding indigenous vegetation (medium negative impact before mitigation and low negative impact with mitigation measures);
- Impacts of operational activities on the indigenous animal and bird life (medium negative impact before mitigation and low negative impact with mitigation measures);
- Introduction of alien and weed plant species (medium negative impact before mitigation and low negative impact with mitigation measures)
- Expanding and upgrading of recreational facilities available at Die Stroom picnic site in the Bontebok National Park (high positive impact)
- Additional load on services infrastructure such as electricity, water, sewage and waste handling (high negative impact before mitigation and medium negative impact with mitigation measures)
- The potential impact of the proposed development on the Outstanding Universal Value of a World Heritage Site (medium negative impact before mitigation and low negative impact with mitigation measures)
- Noise due to operations of proposed expansions and upgrades to Die Stroom picnic site (medium negative impact before mitigation and low negative impact with mitigation measures)
- Visual impact of school expansions which includes sport fields and primary school facilities etc (medium negative impact before mitigation and low negative impact with mitigation measures)

DECOMMISSIONING AND CLOSURE PHASE- LAYOUT ALTERNATIVE 1

It is not anticipated that decommissioning will occur in the near future. Should decommissioning occur, the expected impacts are similar to those listed in the construction phase above with the additional positive impact of rehabilitating the decommissioned area to a near natural/indigenous state and significant negative impact of destroying recreational facilities within a national park much needed to attract the local community and general public to the park. Impacts must be mitigated and managed according to the best practise techniques/management measures available for that time.

1.2.	Provide a map 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)
	Refer to Appendix B
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.
Refer to Section H4 for a summary of the potential impact findings.	

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 EMP
Impact management mitigation measures as included in the EMP (based on the assessments) for the preferred layout, activity and site alternative:	

CONSTRUCTION PHASE IMPACT MITIGATION MEASURES:

- Mitigation and management for affecting geology is to ensure that removal of geological material and hardening are kept to a minimum and only within proposed development areas.
- Any cumulative impacts due to compaction/hardening of substrata such as damming of storm water elsewhere must be managed and mitigated as per the requirements of the environmental management plan.
- Demarcate no-go areas before any land clearing occurs under the supervision of an ECO. Demarcation must be clearly visible and effective and no-go area must remain demarcated throughout construction phase.
- Access to roads and other areas must be controlled to avoid disturbance of areas outside the development footprint. Personnel should be restricted to the construction camp site and immediate construction areas only.
- Undertake specific erosion monitoring and maintenance throughout the construction phase as and if required.
- Undertake dust suppression as needed.
- Monitor soil erosion on a regular basis and rehabilitate impacted areas as soon as possible under supervision of appointed ECO.
- Appropriate and effective storm water management measures must be put in place to ensure that erosion and environmental degradations outside of the proposed development footprint area does not occur, but the storm water measures implemented must not impede storm water flow to such an extent that it is completely stopped. Current hydrological processes outside of the proposed development footprint area must continue to function as is.
- Rehabilitate or stabilise eroded areas immediately to prevent increase in erosion.
- Should any signs of erosion or artificial recharge be observed the municipality must implement rectification and preventions measures immediately and consult with the appointed ECO before implementing these measures.
- Undertake construction activities only in areas where required. Avoid all other areas outside of approved development footprint area.
- Cross areas with machinery as little as possible (work effectively) and make use of existing access and internal roads as far as possible.
- Rehabilitate impacted areas outside of approved development footprint area immediately upon construction completion.
- Undertake storm water management measures as recommended in the environmental management program.
- Monitor for erosion. Should erosion be present, undertake maintenance activities to rectify and prevent further erosion.
- Demarcate no-go areas before construction commences and maintain demarcation throughout construction phase.
- All roads need to be maintained and monitored. Visible signs of possible erosion must be immediately rehabilitated.
- Monitor impacted areas for erosion and accumulation of water on an ongoing basis and implement mitigation measures as and if required.
- Stormwater discharge flow must be managed and restricted in such a manner that it does not cause erosion.
- Rehabilitate or stabilise eroded areas immediately to prevent increase/spread of erosion.
- Appropriate and effective storm water management measures must be put in place to ensure that erosion and environmental degradations outside of the proposed development footprint area does not occur, but the storm water measures implemented must not impede storm water flow to such an extent that it is completely stopped. Current hydrological processes outside of the proposed development footprint area must continue to function as is.
- Conduct and complete construction activities as far as possible during the dry summer months.
- Only excavate materials from proposed construction sites as according to approved layout plans.
- Do not remove any plant or soil materials from outside of the development areas.
- Do not create any additional access routes.

- Clearance of indigenous vegetation must be kept to a minimum clearly demarcating the proposed development area before construction commencement, maintaining the demarcation throughout the construction phase and only clearing the area required for the development
- Construction activities must be completed as quickly as possible to limit disturbance caused ecology as far as possible.
- All unused construction materials must be removed from site immediately after construction completion.
- No concrete/cement mixing may take place on any permeable soil surface and must at all times be contained within an impermeable mixing area and no mixing waste water may enter the environment.
- No waste pollution may occur due to the construction activities and all waste must be contained and disposed of at the municipal landfill site on a daily basis.
- Revegetation of the impacted undeveloped areas must be done as soon as possible after construction completion and only indigenous vegetation species may be used for rehabilitation and landscaping.
- Grass for landscaping must be limited to *Cynodon dactylon* (kweekgras) or *Panicum maximum* (buffelsgras), no kikuyu grass (*Pennisetum clandestinum*) may be used or planted for landscaping of disturbed areas.
- Planted grass such as for the proposed picnic area must be prevented from encroaching further into the remaining and rehabilitating indigenous vegetation landscaped and undeveloped areas.
- Search and rescue of viable indigenous vegetation species must be conducted prior to site clearance within the demarcated development areas. Indigenous species rescued can be used for landscaping of impacted construction areas after construction completion. Specific viable species to be rescued prior to site clearance must be identified by a suitable botanical specialist once the proposed development site has been demarcated.
- Park management will be responsible for rescue/removal of these plants and to take care of these plants until it can be used on site for landscaping and rehabilitation purposes.
- No trapping, hunting or any injury to animal or birdlife may occur during construction activities.
- Search and rescue operations must be conducted before site clearance activities commences and should any local animal or birdlife be found within the construction area they must be carefully moved to the adjacent natural areas by park management not to be impacted upon.
- Undertake construction activities only in identified and specifically demarcated areas.
- Do not import and use infill material on site containing alien or weed vegetation seeds/plants.
- An important aspect of on-going maintenance is the monitoring of the rehabilitated sites and access road verges for alien plant species.
- Wherever possible rehabilitation of disturbed area should be done with seeds collected from indigenous vegetation in the area during rehabilitation.
- Implement an ongoing alien eradication program for the areas to be rehabilitated.
- Local contractors, employing or seeking to employ local (historically disadvantaged individuals (HDIs) from the region who are suitably qualified, should get preference.
- Adhere to speed limit and road rules.
- Work during normal working hours and only use demarcated access and internal roads
- Only allow drivers with valid driver's licenses to drive and/or operate construction vehicles
- Appropriate refuse disposable facilities shall be provided at the proposed construction site
- Daily clearance of construction litter on the site and surrounds shall be undertaken.
- Waste to be disposed of via closed containers/vehicles at the municipal landfill site.
- Undertake dust suppression if necessary. If dust suppression and/or surface hardening is undertaken by using water only non-potable water resources must be used.
- Only clear the areas to be developed upon, no additional areas outside of the proposed development footprint area may be cleared.
- Plant additional vegetation where needed after construction during site rehabilitation if required.
- Service and maintain construction vehicles on a frequent basis.
- Should any burials, fossils or other historical material be encountered during construction, work must cease immediately and HWC must be notified.

- Implement Chance Fossil Find Procedure as/if required as included in EMPr requirements.
- Construction activities should be restricted to weekday working hours.
- Machinery and vehicles should be regularly maintained to prevent excessive noise.
- All machinery and work activities must adhere to the requirements of the noise regulations.
- Construction not to take place during peak holiday season middle Dec – middle January
- Proposed construction activities must be limited to development footprint site.
- Construction camp must be neatly fenced and construction site must be neat and tidy.
- Stockpile construction materials in one specific area.

OPERATIONAL PHASE IMPACT MITIGATION MEASURES:

- Stormwater discharge flow must be managed and restricted in such a manner that it does not cause erosion.
- Rehabilitate or stabilise eroded areas immediately to prevent increase/spread of erosion.
- Stormwater infrastructure must not cause erosion of the surrounding remaining undeveloped areas, but still allow current hydrological processes to continue as is.
- Park management must maintain all stormwater infrastructure on a regular basis to ensure that it is working effectively and is not blocked with waste and is not causing erosion.
- The discharge of stormwater must not lead to waste pollution of the surrounding environments.
- Discharge of stormwater must be controlled and must be done in such a manner that it does not cause erosion of the site or surrounds, should any erosion be detected this must be rectified immediately and prevention measures must be put in place.
- All stormwater infrastructure must be maintained in a good condition by the developed municipality not leading to any environmental degradation.
- Clearance of indigenous vegetation and physical disturbance on site must be kept to a minimum clearly demarcating the proposed development area before construction commencement, maintaining the demarcation throughout the construction phase and only clearing the area required for the development.
- All unused construction materials must be removed from site immediately after construction completion.
- No waste pollution may occur due to the construction activities and all waste must be contained and disposed of at the municipal landfill site on a daily basis.
- All landscaping of undeveloped and areas disturbed during construction must be done with indigenous vegetation.
- Grass for landscaping must be limited to *Cynodon dactylon* (kweekgras) or *Panicum maximum* (buffelsgras), no kikuyu grass (*Pennisetum clandestinum*) may be used or planted for landscaping of disturbed areas.
- Planted grass such as for the proposed picnic area must be prevented from encroaching further into the remaining and rehabilitating indigenous vegetation landscaped and undeveloped areas.
- The discharge of stormwater must not lead to waste pollution or erosion of surrounding undeveloped areas.
- Ongoing monitoring of erosion within and around the development site and should any signs of erosion be detected immediate rectification and further prevention measures must be put in place under the guidance of a qualified ecological specialist so as to prevent any additional cumulative impacts on the environment.
- The impacted site must be monitored for alien vegetation encroachment and should alien vegetation encroach on the impacted site it must be removed and monitored in accordance with parks alien vegetation management plan.
- All infrastructure and developments must be maintained in a good working condition not leading to any environmental degradation.
- Swimming pool water and sewage may not be discharged into the environment and must be managed in a closed system which must be maintained and monitored for leakages.
- No high intensity lights may be left on during the night that shines outwards as this will lead to light pollution impacting on especially nocturnal aquatic animal and bird species.
- Use only existing access roads and do not create any new access roads to proposed development sites especially through the drainage line.
- No pollution of surface water or ground water resources may occur due to activities on the property
- Swimming pool water and sewage may not be discharged into the environment and must be

- managed in a closed system which must be maintained and monitored for leakages.
- Good waste management practices must be implemented not allowing any waste to accumulate or be disposed of in surrounding natural areas or landscaped indigenous vegetation areas.
- Undeveloped and landscaped indigenous vegetation areas on the property must be maintained in such a manner that the use of the facilities at Die Stroom picnic site does not lead to destruction of any additional indigenous vegetation. To achieve this the park must maintain the swimming pool fencing, remove any alien vegetation on the which may encroach on natural areas, make sure that planted indigenous grass does not encroach on adjacent undeveloped and landscaped indigenous vegetation areas and place sign boards conspicuously along the edge of the undeveloped areas indicating that indigenous vegetation may not be picked/destroyed and is to be conserved at all times.
- No trapping, hunting or any injury to animal or birdlife may occur during operational activities. Should any local animal or birdlife be found within the fenced swimming pool area during operational activities they must either be left undisturbed or carefully be moved to the adjacent natural areas by park management not to be impacted upon.
- An important aspect of on-going maintenance is the monitoring of the rehabilitated sites and access road verges for alien plant species.
- Rehabilitation and landscaping of disturbed areas should be done with seeds collected from indigenous vegetation in the area during rehabilitation.
- Implement an ongoing alien eradication program for the disturbed and rehabilitated areas as per EMP requirements.
- Ongoing maintenance and management of the recreational facilities by park management in accordance with the Bontebok National Park Management Plan
- The municipality and park management to ensure that adequate services infrastructure and resources exists to service the proposed recreational developments and to maintain existing and all new services infrastructure as proposed.
- Upgrade and maintain services infrastructure as and when required.
- Park management to enforce park rules concerning preventing excessive noise to maintain low noise levels.
- All areas disturbed during construction and not to be developed to be rehabilitated and maintained with natural indigenous vegetation.
- Only natural colours such as browns, greens and grey may be used for the buildings and infrastructure designs and aesthetics.
- All public access to the recreational facilities must be management and controlled by park management, ensuring that daily visitors numbers does not exceed the capacity constraints of the facilities.

DECOMMISSIONING PHASE IMPACT MITIGATION MEASURES:

It is not anticipated that decommissioning will occur in the near future. Should decommissioning occur, the expected impacts are similar to those listed in the construction phase above with the additional positive impact of rehabilitating the decommissioned area to a near natural/indigenous state and significant negative impact of destroying recreational facilities within the park much needed by the local communities and to attract visitors to the park. Impacts must be mitigated and managed according to the best practise techniques/management measures available for that time.

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.
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Impact mitigation measures as per the EMP must be fully complied with.

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.
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It is the opinion of the EAP that the proposed swimming pool, recreational facilities and associated infrastructure at Die Stroom picnic site should be authorised as it will provide much needed safe, upgraded and additional recreational facilities to serve the local community and public making use of the facilities in the Bontebok National Park. The proposed developments were placed on existing disturbed areas, within existing roads and along existing services routes as far as possible to keep the development footprint as low as possible and will not lead to any significant unacceptable negative

biodiversity impacts. However strict adherence to all specialist recommendations and requirements of the EMP must be adhered to.													
2.4.	Provide a description of any assumptions, uncertainties and gaps in knowledge that relate to the assessment and mitigation measures proposed.												
	<p>EAP is only knowledgeable with regards to the potential environmental and ecosystems aspects.</p> <p>In undertaking the investigation and compiling this report, the following has been assumed:</p> <ul style="list-style-type: none"> •The information provided by the client is accurate and unbiased; •The scope of this investigation is to assess the direct and cumulative environmental impacts associated with the development; and •Should the proposed project be authorised, the applicant will incorporate the recommendations and mitigation measures outlined in this BAR, the EMP and the EA into the detailed design and construction contract specifications and operational management system for the proposed project. 												
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.												
	<table border="1"> <tr> <td>i.</td> <td>the period within which commencement must occur;</td> <td>Within 5 years of obtaining Environmental Authorisation</td> </tr> <tr> <td>ii.</td> <td>the period for which the environmental authorisation is granted and the date on which the development proposal will have been concluded, where the environmental authorisation does not include operational aspects;</td> <td>Within 10 years of obtaining Environmental Authorisation</td> </tr> <tr> <td>iii.</td> <td>the period for which the portion of the environmental authorisation that deals with non-operational aspects is granted; and</td> <td>Within 10 years of obtaining Environmental Authorisation</td> </tr> <tr> <td>iv.</td> <td>the period for which the portion of the environmental authorisation that deals with operational aspects is granted.</td> <td>Ongoing maintenance of infrastructure and implementation of EMP until decommissioning.</td> </tr> </table>	i.	the period within which commencement must occur;	Within 5 years of obtaining Environmental Authorisation	ii.	the period for which the environmental authorisation is granted and the date on which the development proposal will have been concluded, where the environmental authorisation does not include operational aspects;	Within 10 years of obtaining Environmental Authorisation	iii.	the period for which the portion of the environmental authorisation that deals with non-operational aspects is granted; and	Within 10 years of obtaining Environmental Authorisation	iv.	the period for which the portion of the environmental authorisation that deals with operational aspects is granted.	Ongoing maintenance of infrastructure and implementation of EMP until decommissioning.
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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.
<p>The following energy/resources saving methods must be incorporated into the buildings and facilities as proposed where funding allows:</p> <ul style="list-style-type: none"> ○ All facilities to be provided with energy saving compact fluorescent lamps (CLF's). ○ All electric geysers should be insulated with geyser blankets. ○ All electric geyser thermostats should be set at the most optimal temperature. ○ All fitted appliances should have an energy rating and the most efficient models must be considered. ○ Energy efficient security/outdoor light technology should be used as far as possible to reduce the energy requirements of the outdoor light network. ○ Rainwater harvesting from roofs and gutters must be implemented to collect and store rainwater runoff. This can be used to provide supplementary water which can be used as grey water or irrigation. ○ Shower installations must be fitted with low-flow shower heads in school bathrooms. ○ Geysers should be installed vertically to save electricity. ○ Ensure that the maximum flow rate from hand wash basin tops does not exceed 6L per minute. ○ Indoor traps must be fitted with aerators to increase the efficiency by redirecting the flow and amount of water used. ○ Flush toilets must be fitted with dual or multi flush mechanisms to ensure that the amount of water required is controlled by the user. ○ Solar electricity devices should be installed and made use of as far as possible i.e. solar geysers.

4. Waste

Explain what measures have been taken to reduce, reuse or recycle waste.

An integrated waste management approach will be followed as per the requirements of the EMPr during the construction and operational phases. Refer to 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 following energy/resources saving methods must be incorporated into the buildings and facilities as proposed where funding allows:

- All facilities to be provided with energy saving compact fluorescent lamps (CLF's).
- All electric geysers should be insulated with geyser blankets.
- All electric geyser thermostats should be set at the most optimal temperature.
- All fitted appliances should have an energy rating and the most efficient models must be considered.
- Energy efficient security/outdoor light technology should be used as far as possible to reduce the energy requirements of the outdoor light network.
- Rainwater harvesting from roofs and gutters must be implemented to collect and store rainwater runoff. This can be used to provide supplementary water which can be used as grey water or irrigation.
- Shower installations must be fitted with low-flow shower heads in school bathrooms.
- Geysers should be installed vertically to save electricity.
- Ensure that the maximum flow rate from hand wash basin tops does not exceed 6L per minute.
- Indoor traps must be fitted with aerators to increase the efficiency by redirecting the flow and amount of water used.
- Flush toilets must be fitted with dual or multi flush mechanisms to ensure that the amount of water required is controlled by the user.
- Solar electricity devices should be installed and made use of as far as possible i.e. solar geysers.

SECTION K: DECLARATIONS

Original signed copies of the declarations to be provided with the Final Basic Assessment Report to be submitted to the Department for a final decision.