DRAFT BASIC ASSESSMENT REPORT

for

HEROLDS BAY STORMWATER INFRASTRUCTURE

on

Erven 326, 318 and 139 Herolds Bay, George

In terms of the

National Environmental Management Act (Act No. 107 of 1998, as amended) & 2014 Environmental Impact Regulations

Prepared for Applicant:

George Municipality

Date: 31 May 2024

Appointed EAP: Ms Louise-Mari van Zyl
Assisted by Candidate EAP: Ms Mariska Byleveld
Email: louise@cape-eaprac.co.za / mariska@cape-eaprac.co.za
Report Reference: GEO814/08
Department Reference: 16/3/3/1/D2/29/0018/24
Case Officer: Dorien Werth

Cape EAPrac
Cape Environmental Assessment Practitioners

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Fax: +27 44 874 0432 17 Progress Street, George

www.cape-eaprac.co.za

APPOINTED ENVIRONMENTAL ASSESSMENT PRACTITIONER:

Cape EAPrac **Environmental Assessment Practitioners**

PO Box 2070

George

6530

Tel: 044-874 0365

Appointed EAP: Louise-Mari van Zyl (MA Geography & Environmental Science [US]; Registered Environmental Assessment Practitioner with the Environmental Assessment Practitioners of South Africa, EAPSA, Registration Number **2019/1444**. Ms van Zyl has over twenty years' experience as an environmental practitioner.

Assisted by Candidate EAP: Ms Mariska Byleveld (MSc Geology [University of the Free State]) (Candidate EAPASA Registration Number: **2023/6593**).

PURPOSE OF THIS REPORT:
Departmental Review

APPLICANT:
George Municipality

CAPE EAPRAC REFERENCE NO:
GEO814/08

SUBMISSION DATE
31 May 2024

DRAFT BASIC ASSESSMENT REPORT

in terms of the

National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended &
Environmental Impact Regulations 2014

Herolds Bay Stormwater Infrastructure

Erven 326, 318 and 139 Herolds Bay, George

Submitted for:

Departmental Compliance

Report Issued by:
Cape Environmental Assessment Practitioners

Tel: 044 874 0365
Web: www.cape-eaprac.co.za

PO Box 2070
17 Progress Street
George 6530

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APRIL 2024

BASIC ASSESSMENT REPORT

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

APRIL 2024

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

GENERAL PROJECT DESCRIPTION

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

The proposed project entails the formalisation of an **existing municipal stormwater channel** through erven 326, 318 and a small portion of erf 139 Herolds Bay, George District Municipality (Western Cape Province) (Figure 1).

Erven 326, 318 and 139 are zoned **Public Open Space** and are owned by the George Municipality. These erven were set aside for the purpose of stormwater management when the original township layout was planned for Herolds Bay Extension 1 & 2.

This dedicated stormwater channel experienced intensive erosion following high velocity stormwater runoff during rainfall events in the greater George area. The channel is bordered by residential erven along Slaapplek Sreet and Voëlklip Street (Figure 1) (Figure 2). The properties bordering these erven are being compromised given that the stormwater erosion is undercutting boundary walls.

- **Erf 326** is densely vegetated and as a result the extend of erosion along this portion of the channel is minimal with the exception for the southern boundary which is also the lowest point of the erf (Figure 3).
- Where the channel runs through **erven 318 & 139** erosion is significant (Figure 4). Erosion in this area has resulted in damage to the boundary walls of neighbouring properties (most notably erf 319) (Figure 4) and unless formalised further damage is likely to happen.

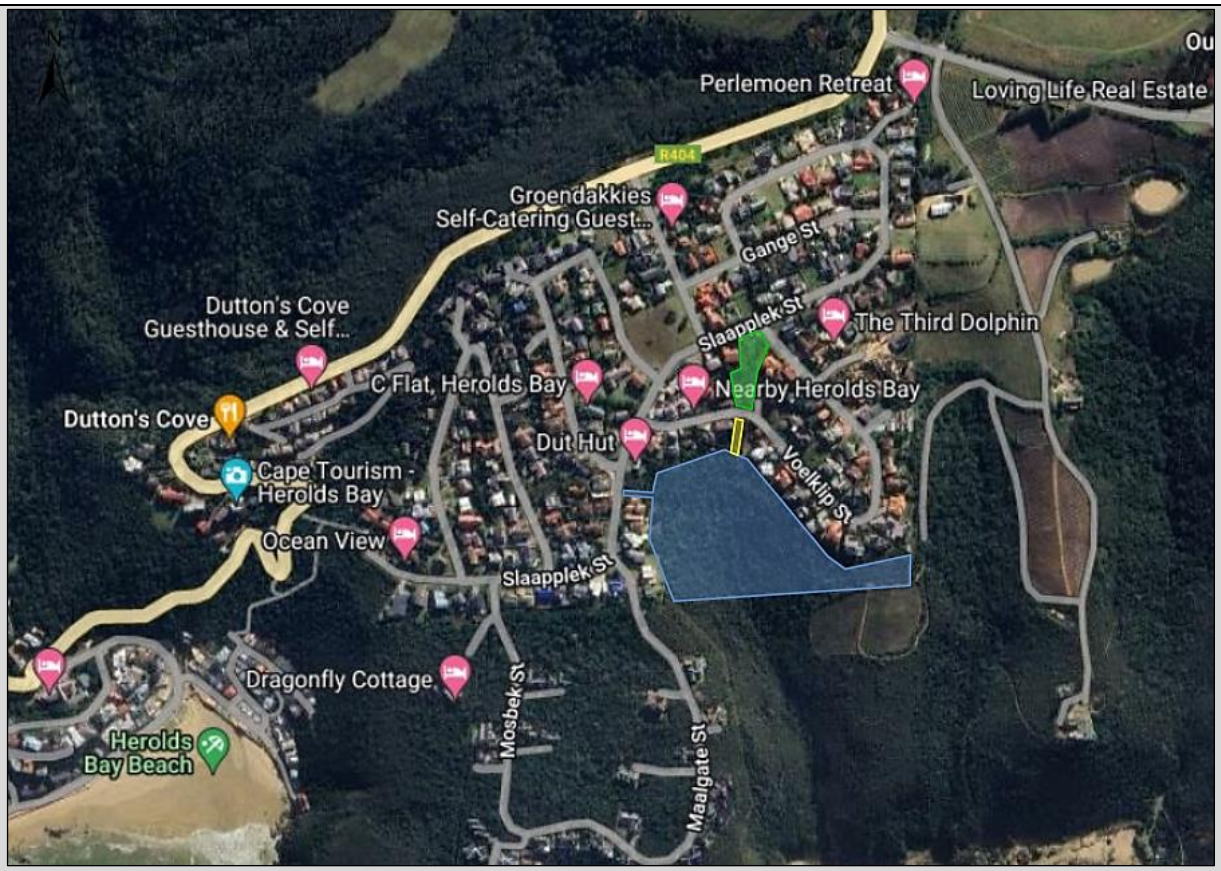


Figure 1: Locality of Erf 139 (blue outline), Erf 318 (yellow outline) and Erf 326 (green outline) along Slaapplek street and Voëlklip street.

Figure 2: Enlarged figure showing the locality of the Municipal Open Space Erven 319, 318 and 326.

Figure 3: Photograph of Erf 326 via Slaapplek street. Erf 326 is densely vegetated with no signs of erosion except for the southernmost boundary of the property.

Figure 4: Photograph of Erf 318. This area has been disturbed through a combination of stormwater runoff and what appears to be constructed related activities on Erf 318 where building rubble have been dumped into the erosion gulley.

George Municipality appointed **EAS Infrastructure Engineers** to provide an engineering solution to the current erosion and stormwater management issues affecting the open space erven and neighbouring properties.

According to EAS infrastructure, the drainage system at these erven has both operational and hydraulic deficiencies. The potential of flooding due to blocked and damaged infrastructure was evident at these erven.

The **proposed activity** entails the following:

Erf 326

- A **subsoil drain** will be installed on erf 326 to collect runoff from higher lying erven (erven 125 and 327) (Figure 5 – Green Arrows).
- A 2m high **gabion basket wall** will be constructed just outside the southern boundary of erf 326 to prevent further erosion (Figure 5 – Purple Box).
- The subsoil drain will run underneath the gabion structures where it will be tied in at **a reconstructed and enlarged catchpit** structure (Figure 5).
- The **crossing pipe** which extends underneath Voëlklip street will be upgraded to a 750mm diameter pipe.

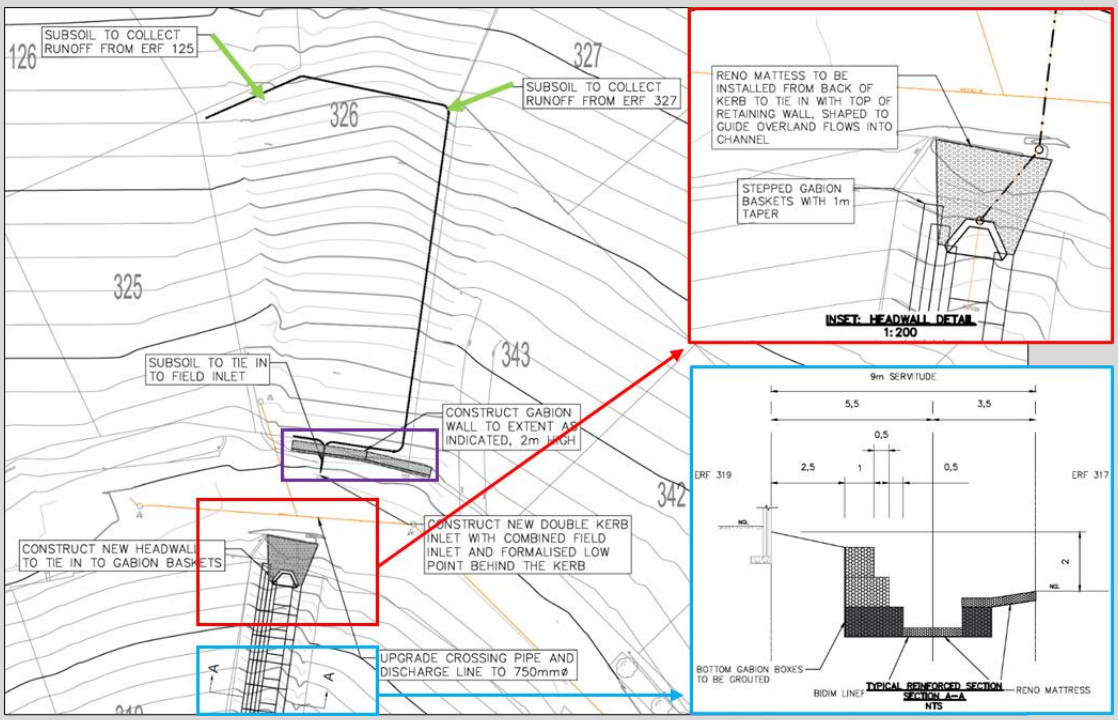


Figure 5: Erosion protection layout for Erven 326 & 318 – subsoil drains, gabion basket and reno mattress (source: EAS Infrastructure Engineers).

Erf 318 and a portion of Erf 139

It is proposed to construct a **stepped gabion basket channel** and associated infrastructures (reno mattresses, retaining walls) on erf 318 and a small portion of erf 139 to control erosion and stormwater runoff (Figure 5 – Red & Blue Boxes)(Figure 6). The western section of this gabion channel will be further extended to the west to provide additional support to the boundary wall of erf 319 (Figure 5 – Blue Box) (Figure 6). The outlet of the gabion basket channel will be on erf 139, approximately 2m beyond an existing sewer line (Figure 6). As per the aquatic specialist recommendation, a **stilling**

basin will be constructed at this outlet to further reduce stormwater energy and minimise erosion of the slope (Figure 6 – Blue Arrow).

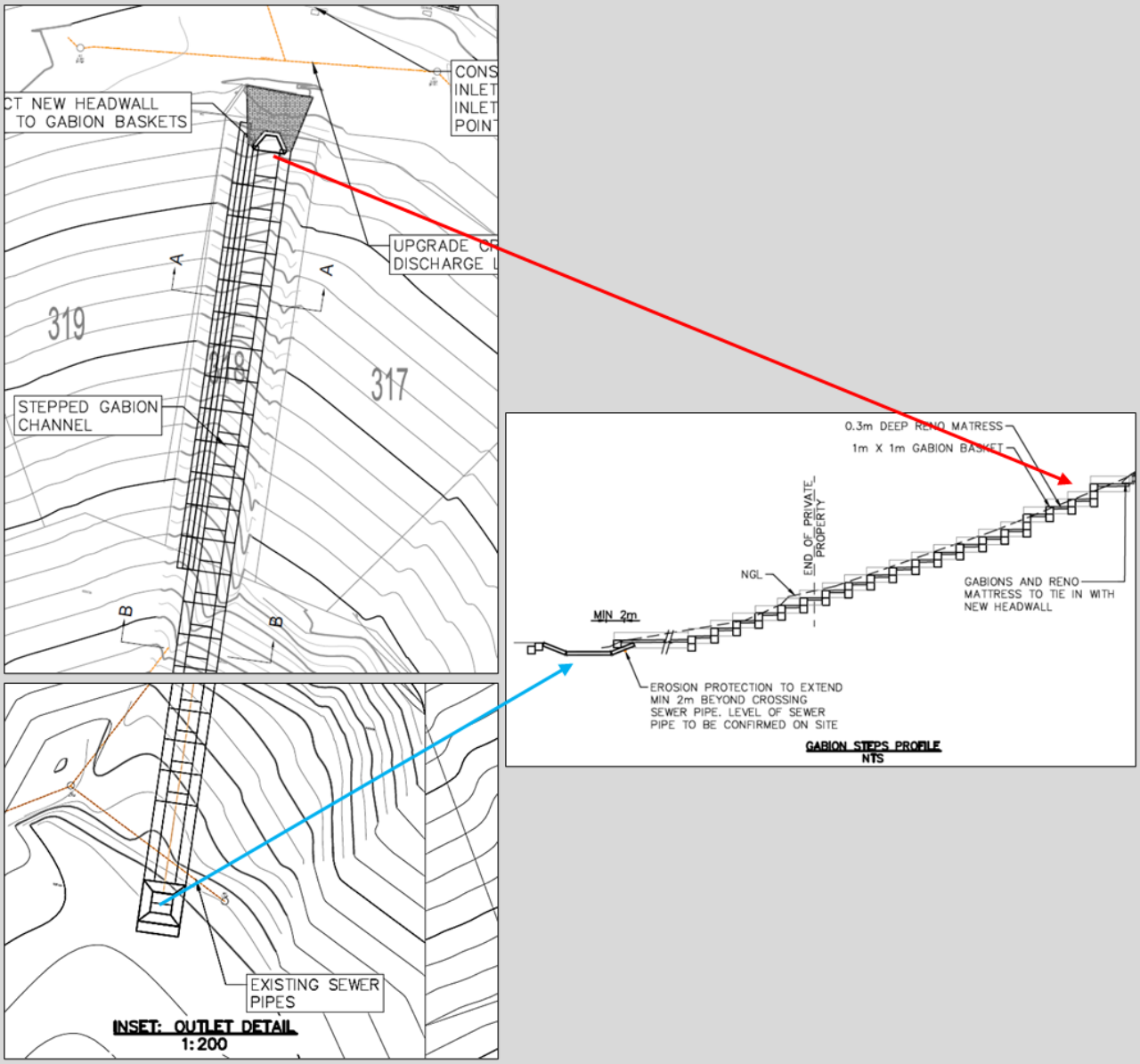


Figure 6: Erosion Protection for erven 318 & 139 (Plan & Section View) – stepped gabion channel ending with a stilling basin approx. 2m beyond the existing sewer pipeline.

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

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

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

3. *Submission of documentation, reports and other correspondence:*

   The Department has adopted a digital format for corresponding with proponents/applicants or the general public. If there is a conflict between this approach and any provision in the legislation, then the provisions in the legislation prevail. If there is any uncertainty about the requirements or arrangements, the relevant Competent Authority must be consulted.

   The Directorate: Development Management has created generic e-mail addresses for the respective Regions, to centralise their administration. Please make use of the relevant general administration e-mail address below when submitting documents:

   DEADPEIAAdmin@westerncape.gov.za
   Directorate: Development Management (Region 1):
   City of Cape Town; West Coast District Municipal area;
   Cape Winelands District Municipal area and Overberg District Municipal area.

   DEADPEIAAdmin.George@westerncape.gov.za
   Directorate: Development Management (Region 3):
   Garden Route District Municipal area and Central Karoo District Municipal area

   General queries must be submitted via the general administration e-mail for EIA related queries. Where a case-officer of DEA&DP has been assigned, correspondence may be directed to such official and copied to the relevant general administration e-mail for record purposes.

   All correspondence, comments, requests and decisions in terms of applications, will be issued to either the applicant/requester in a digital format via email, with digital signatures, and copied to the Environmental Assessment Practitioner ("EAP") (where applicable).

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

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

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

7. This BAR is current as of **April 2024**. It is the responsibility of the Applicant/ EAP to ascertain whether subsequent versions of the BAR have been released by the Department. Visit this Department's website at http://www.westerncape.gov.za to check for the latest version of this BAR.

8. This BAR is the standard format, which must be used in all instances when preparing a BAR for Basic Assessment applications for an environmental authorisation in terms of the NEMA EIA Regulations

when the Western Cape Government Department of Environmental Affairs and Development Planning ("DEA&DP") is the Competent Authority.

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

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

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

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

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

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

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

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

DEPARTMENTAL DETAILS	
~~**CAPE TOWN OFFICE:**~~ ~~**DIRECTORATE: DEVELOPMENT MANAGEMENT (REGION 1)**~~ ~~(City of Cape Town, West Coast District,~~ ~~Cape Winelands District & Overberg District)~~	**GEORGE REGIONAL OFFICE:** **DIRECTORATE: DEVELOPMENT MANAGEMENT (REGION 3)** (Central Karoo District & Garden Route District)
~~The completed Form must be sent via electronic mail to:~~ ~~DEADPEIAAdmin@westerncape.gov.za~~ ~~Queries should be directed to the Directorate: Development Management (Region 1) at:~~ ~~E-mail: DEADPEIAAdmin@westerncape.gov.za~~ ~~Tel: (021) 483-5829~~ ~~Western Cape Government~~ ~~Department of Environmental Affairs and Development Planning~~ ~~Attention: Directorate: Development Management (Region 1)~~ ~~Private Bag X 9086~~ ~~Cape Town,~~ ~~8000~~	The completed Form must be sent via electronic mail to: DEADPEIAAdmin.George@westerncape.gov.za Queries should be directed to the Directorate: Development Management (Region 3) at: E-mail: DEADPEIAAdmin.George@westerncape.gov.za Tel: (044) 814-2006 Western Cape Government Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 3) Private Bag X 6509 George, 6530

MAPS

Provide a location map (see below) as Appendix A1 to this BAR that shows the location of the proposed development and associated structures and infrastructure on the property.	
Locality Map:	The scale of the locality map must be at least 1:50 000. For linear activities or development proposals of more than 25 kilometres, a smaller scale e.g., 1:250 000 can be used. The scale must be indicated on the map. The map must indicate the following: • an accurate indication of the project site position as well as the positions of the alternative sites, if any; • road names or numbers of all the major roads as well as the roads that provide access to the site(s) • a north arrow; • a legend; and • a linear scale. For ocean based or aquatic activity, the coordinates must be provided within which the activity is to be undertaken and a map at an appropriate scale clearly indicating the area within which the activity is to be undertaken. Where comment from the Western Cape Government: Transport and Public Works is required, a map illustrating the properties (owned by the Western Cape Government: Transport and Public Works) that will be affected by the proposed development must be included in the Report.
Provide a detailed site development plan / site map (see below) as Appendix B1 to this BAR; and if applicable, all alternative properties and locations.	
Site Plan:	Detailed site development plan(s) must be prepared for each alternative site or alternative activity. The site plans must contain or conform to the following: • The detailed site plan must preferably be at a scale of 1:500 or at an appropriate scale. The scale must be clearly indicated on the plan, preferably together with a linear scale. • The property boundaries and numbers of all the properties within 50m of the site must be indicated on the site plan. • On land where the property has not been defined, the co-ordinates of the area in which the proposed activity or development is proposed must be provided. • The current land use (not zoning) as well as the land use zoning of each of the adjoining properties must be clearly indicated on the site plan. • The position of each component of the proposed activity or development as well as any other structures on the site must be indicated on the site plan. • Services, including electricity supply cables (indicate aboveground or underground), water supply pipelines, boreholes, sewage pipelines, storm water infrastructure and access roads that will form part of the proposed development **must** be clearly indicated on the site plan. • Servitudes and an indication of the purpose of each servitude must be indicated on the site plan.

	• Sensitive environmental elements within 100m of the site must be included on the site plan, including (but not limited to): o Watercourses / Rivers / Wetlands o Flood lines (*i.e.,* 1:100 year, 1:50 year and 1:10 year where applicable); o Coastal Risk Zones as delineated for the Western Cape by the Department of Environmental Affairs and Development Planning ("DEA&DP"): o Ridges; o Cultural and historical features/landscapes; o Areas with indigenous vegetation (even if degraded or infested with alien species). • Whenever the slope of the site exceeds 1:10, a contour map of the site must be submitted. • North arrow A map/site plan must also be provided at an appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred and alternative sites indicating any areas that should be avoided, including buffer areas.
Site photographs	Colour photographs of the site that shows the overall condition of the site and its surroundings (taken on the site and taken from outside the site) with a description of each photograph. The vantage points from which the photographs were taken must be indicated on the site plan, or locality plan as applicable. If available, please also provide a recent aerial photograph. Photographs must be attached to this BAR as **Appendix C**. The aerial photograph(s) should be supplemented with additional photographs of relevant features on the site. Date of photographs must be included. Please note that the above requirements must be duplicated for all alternative sites.
Biodiversity Overlay Map:	A map of the relevant biodiversity information and conditions must be provided as an overlay map on the property/site plan. The Map must be attached to this BAR as **Appendix D**.
Linear activities or development and multiple properties	GPS co-ordinates must be provided in degrees, minutes and seconds using the Hartebeeshoek 94 WGS84 co-ordinate system. Where numerous properties/sites are involved (linear activities) you must attach a list of the Farm Name(s)/Portion(s)/Erf number(s) to this BAR as an Appendix. For linear activities that are longer than 500m, please provide a map with the co-ordinates taken every 100m along the route to this BAR as **Appendix A3**.

ACRONYMS

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

ATTACHMENTS

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

The following checklist of attachments must be completed.

APPENDIX			**✓ (Tick) or x (cross)**
Appendix A:	**Maps**		
	Appendix A1:	**Locality Map**	✓
	Appendix A2:	**Coastal Risk Zones as delineated in terms of ICMA for the Western Cape by the Department of Environmental Affairs and Development Planning**	✓
	Appendix A3:	**Map with the GPS co-ordinates for linear activities**	✓
Appendix B:	**Appendix B1:**	**Site development plan(s)**	✓
	Appendix B2	**A map of appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffer areas;**	✓
Appendix C:	**Photographs**		✓
Appendix D:	**Biodiversity overlay map**		✓
Appendix E:	**Permit(s) / license(s) / exemption notice, agreements, comments from State Department/Organs of state and service letters from the municipality.**		
	Appendix E1:	**Final comment/ROD from HWC**	X
	Appendix E2:	**Copy of comment from Cape Nature**	X
	Appendix E3:	**Final Comment from the DWS**	X
	Appendix E4:	**Comment from the DEA: Oceans and Coast**	X
	Appendix E5:	**Comment from the DAFF**	X
	Appendix E6:	**Comment from WCG: Transport and Public Works**	X
	Appendix E7:	**Comment from WCG: DoA**	X
	Appendix E8:	**Comment from WCG: DHS**	X
	Appendix E9:	**Comment from WCG: DoH**	X

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

SECTION A: ADMINISTRATIVE DETAILS

Highlight the Departmental Region in which the intended application will fall	~~CAPE TOWN OFFICE: REGION 1~~		GEORGE OFFICE: BEGION 3
	~~(City of Cape Town, West Coast District~~	~~(Cape Winelands District & Overberg District)~~	(Central Karoo District & Garden Route District)

Duplicate this section where there is more than one Proponent Name of Applicant/Proponent:	George Municipality	
Name of contact person for Applicant/Proponent (if other):	Lionel Daniels (contact person) Johannes Franciscus Koegelenberg (signatory)	
Company/ Trading name/State Department/Organ of State:		
Company Registration Number:		
Postal address:	PO BOX 19	
	George	Postal code: 6530
Telephone:	044 801 9278	Cell: 071 603 4132 / 084 5036 587
E-mail:	rldaniels@george.gov.za	Fax: ( )
Company of EAP:	Cape Environmental Assessment Practitioners (Cape EAPrac)	
EAP name:	Louise-Mari van Zyl (Appointed EAP) / Mariska Byleveld (Candidate EAP)	
Postal address:	PO Box 2070	
	George	Postal code: 6530
Telephone:	044 874 0365	Cell: 071 603 4132 / 084 5036 587
E-mail:	louise@cape-eaprac.co.za mariska@cape-eaprac.co.za	Fax: ( )
Qualifications:	Louise-Mari van Zyl: MA Geography [US] | Mariska Byleveld: MSc Geology [UFS]	
EAP registration no:	Louise-Mari van Zyl: 2019/1444 | Mariska Byleveld: 2023/6593	
Duplicate this section where there is more than one landowner Name of landowner:	George Municipality (same as Applicant)	
Name of contact person for landowner (if other):	Lionel Daniels (contact person) Johannes Franciscus Koegelenberg (signatory)	
Postal address:	PO Box 19	
	George	Postal code: 6530
Telephone:	044 801 9278	Cell:
E-mail:	rldaniels@george.gov.za	Fax: ( )
Name of Person in control of the land: Name of contact person for person in control of the land:	George Municipality (same as Applicant) Lionel Daniels (contact person) Johannes Franciscus Koegelenberg (signatory)	
Postal address:	PO Box 19	
	George	Postal code: 6530
Telephone:	044 801 9278	Cell:
E-mail:	rldaniels@george.gov.za	Fax: ( )

Duplicate this section where there is more than one Municipal Jurisdiction Municipality in whose area of jurisdiction the proposed activity will fall:	George Municipality (same as Applicant)
Contact person:	Lionel Daniels (contact person)

	Johannes Franciscus Koegelenberg (signatory)		
Postal address:	PO Box 19		
	George	Postal code: 6530	
Telephone	044 801 9278	Cell:	
E-mail:	rldaniels@george.gov.za	Fax: ( )	

SECTION B: CONFIRMATION OF SPECIFIC PROJECT DETAILS AS INCLUDED 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.				

The proposed site is a brownfield site:

1. Erf 318 has an existing stormwater outlet.
2. Erven 139 and 326 have existing sewer pipelines.
3. The stormwater channel that traverses these properties direct water to the lower lying areas to the south of the erven.

3.	**For Linear activities or developments (subsoil drain & stepped gabion channel)**	
3.1.	Provide the Farm(s)/Farm Portion(s)/Erf number(s) for all routes:	
	Erven 139, 318 and 326 Herolds Bay, George.	
3.2.	Development footprint of the proposed development for all alternatives.	**± 378.1 m²**

Stormwater Infrastructure	Development Footprint
Subsoil drains on erf 326	**± 43.1m²**
Stepped gabion channel on erven 318 and 139	**± 335m²**

Considering the steepness of erven 318 and 139, it is proposed to add a maximum of 5m 'disturbance envelope' on either side of the stepped gabion basket channel to allow for adequate space to work (maximum 392m²).

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.

The following **stormwater infrastructure** is proposed:

Erf 326

- A **subsoil drain** will be installed on erf 326 to collect runoff from higher lying erven (Figure 7).
- A 2m high **gabion basket wall** will be constructed on the southern boundary of erf 326 (Figure 7).
- The subsoil drain will run underneath the gabion structures where it will be tied in at **a reconstructed and enlarged catchpit** structure (Figure 8).
- The **crossing pipe** which extends underneath Voëlklip Street will be upgraded to a 750mm diameter pipe (Figure 8).

Erf 318

To prevent further erosion, it is proposed to construct a **stepped gabion basket channel** and associated infrastructure (reno mattresses, retaining walls) on erf 318 and a portion of erf 139. The western section of this gabion channel will be further extended to provide additional support to the boundary wall of erf 319. The **outlet** of the **stepped gabion basket channel** will be on erf 139, approximately 2m beyond an existing sewer line (Figure 8) (Figure 9). As per the aquatic specialist recommendation, a **stilling basin** will be constructed at this outlet to further reduce stormwater energy and minimise erosion of the slope.

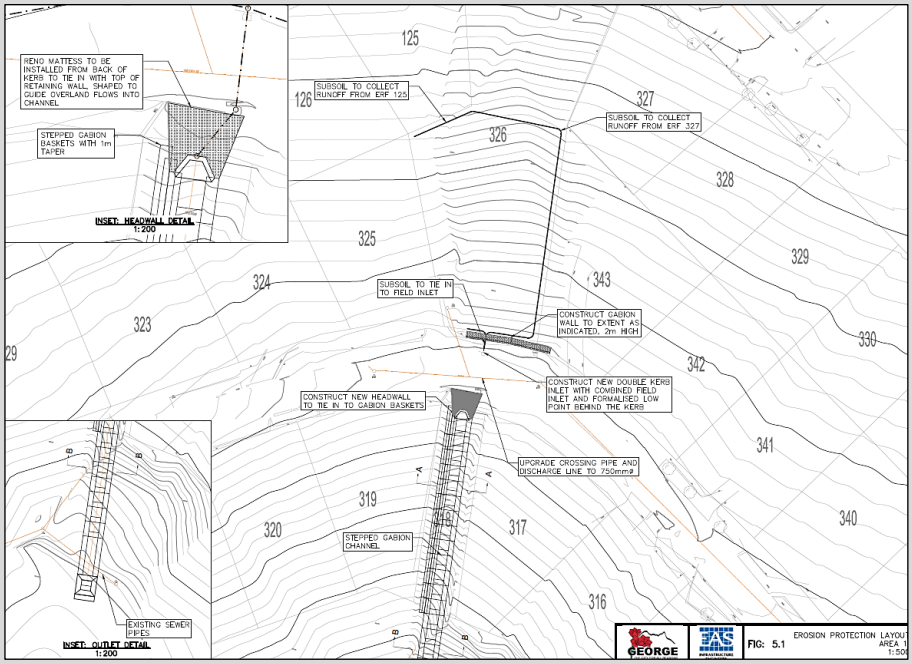


Figure 7: Erosion Protection Layout proposed for Erven 326, 318 & 139 (source: EAS Infrastructure Engineers).

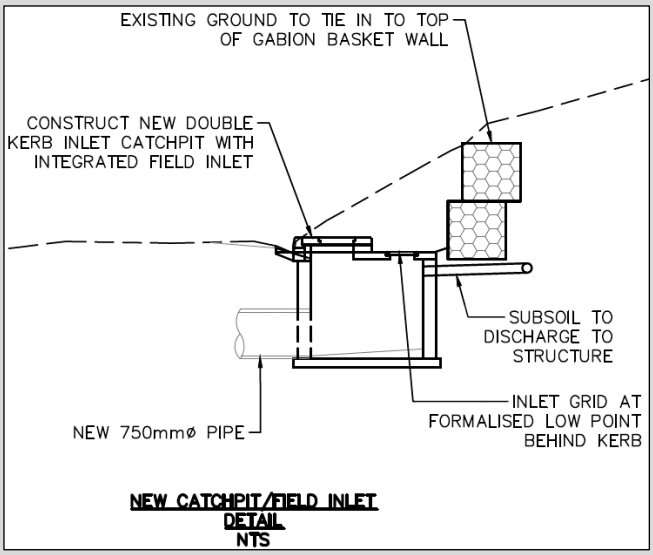


Figure 8: Subsoil drain underneath the 2m high gabion wall to be tied in at a new catchpit / field inlet.

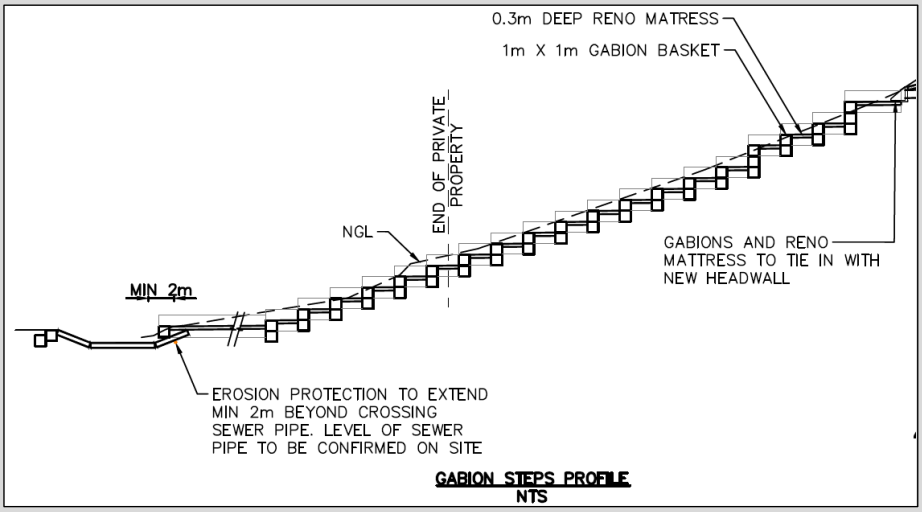


Figure 9: Section of stepped gabion structure erven 318 and 139.

3.4.	Indicate how access to the proposed routes will be obtained for all alternatives.																				
Access will be via the existing Slaapplek street and Voëlklip street (Herolds Bay).																					
3.5.	SG Digit codes of the Farms/Farm Portions/Erf numbers for all alternatives	C	0	2	7	0	0	0	4	0	0	0	0	0	3	2	6	0	0	0	0	0
		C	0	2	7	0	0	0	4	0	0	0	0	0	3	1	8	0	0	0	0	0
		C	0	2	7	0	0	0	4	0	0	0	0	0	1	3	9	0	0	0	0	0

3.6.	**Starting point co-ordinates for all alternatives**			
	Latitude (S)	34°	02'	59.90"
	Longitude (E)	22°	23'	58.90"
	Middle point co-ordinates for all alternatives			
	Latitude (S)	34°	03'	01.32"
	Longitude (E)	22°	23'	59.27"
	End point co-ordinates for all alternatives			
	Latitude (S)	34°	03'	02.72"
	Longitude (E)	22°	23'	58.72"

Note: For Linear activities or developments longer than 500m, a map indicating the co-ordinates for every 100m along the route must be attached to this BAR as Appendix A3.

4.	**Other developments (2m high gabion basket wall)**	
4.1.	Property size(s) of all proposed site(s):	**Erf 326:** ±2 323.69m^2 **Erf 318:** ±360.93m^2 **Erf 139:** ±30 598.62m^2
4.2.	Developed footprint of the existing facility and associated infrastructure (if applicable):	
4.3.	Development footprint of the proposed development and associated infrastructure size(s) for all alternatives:	± 21 m^2
4.4.	Provide a detailed description of the proposed development and its associated infrastructure (This must include details of e.g. buildings, structures, infrastructure, storage facilities, sewage/effluent treatment and holding facilities).	

In addition to the subsoil drain and stepped gabion basket channel, it is proposed to create a **2m high gabion wall** (1.2m x 17m) just outside the southern boundary of erf 326 to prevent further erosion in that area (Figure 7).

4.5.	Indicate how access to the proposed site(s) will be obtained for all alternatives.																				
Access will be via Voëlklip Street.																					
4.6.	SG Digit code(s) of the proposed site(s) for all alternatives:	C	0	2	7	0	0	0	4	0	0	0	0	0	3	1	8	0	0	0	0	0

4.7.	Coordinates of the proposed site(s) for all alternatives:			
	Latitude (S)	34º	03'	00.91"
	Longitude (E)	22º	23'	59.64"

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

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

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

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

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

3. Other legislation

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

Although none were noted by the Botanist during her site inspection, potential for finding small, protected trees in the undergrowth that may require clearing/removal to enable a working/construction area cannot be eliminated altogether given the thick undergrowth and steepness of the site.

Potentially the National Forestry Act for trimming/removal of protected tree species.

4. Policies

Explain which policies were considered and how the proposed activity or development complies and responds to these policies.

Western Cape PSDF (2014)

The Western Cape Provincial Spatial Development Framework (WCPSDF) was approved in 2014 by the Western Cape Parliament and serves as a strategic spatial planning tool that "communicates the provinces spatial planning agenda".

The proposed activity aligns with **Policy R1: Protect Biodiversity and Ecosystem Services**.

According to the botanical/biodiversity specialist, the vegetation within the development site is rapidly being degraded due to severe erosion from unmanaged stormwater flowing over the erven. Although the development site is mapped as Garden Route Granite Fynbos and Great Brak Dune Strandveld, the current conditions on these erven will result in a loss of remaining habitat and habitat quality. If erosion continues over these erven, it will cause unnecessary damage to the environment.

The **proposed activity** will prevent further erosion and subsequent degradation to the habitat. According to the botanical/biodiversity specialist, should the proposed activity go ahead, the Terrestrial Biodiversity will recover enough to become functional once more as a healthy ESA (Figure 10). Therefore, it is essential that this proposed stormwater infrastructure be implemented to avoid further degradation to the ecosystem downstream.

Eden Spatial Development Framework (2017)

The Eden District Spatial Development Framework was approved in 2017 and aims to establish a strong strategic direction and vision, towards increasing levels of detail in the spatial recommendations that are directive rather than prescriptive and providing guidance to local municipalities in the district regarding future spatial planning, strategic decision making and regional integration.

The **proposed activity** complies with the District's Strategic Objective (SO4): Environmental management and public safety and their associated strategies (supported by Policy 1.1.):

- **Protect and conserve important terrestrial**, aquatic (rivers, wetlands, and estuaries) and marine **habitats** as identified through Critical Biodiversity Area (**CBA**) mapping exercise or similar conservation planning process.
    - The proposed activity will prevent further degradation of the mapped CBA ecosystem located south of the proposed development footprint (Figure 10).
- Facilitate the formal protection of priority conservation areas (public and private), as well as the **conservation of natural habitats** that are not formally proclaimed nature reserves.
    - Should this proposed activity be implemented, the Terrestrial Biodiversity will recover and become functional once more as a healthy ESA.

Figure 10: CBA & ESA map of the proposed development footprint (yellow outline). The red line on erf 326 represents the approximate locality of the proposed subsoil drain.

George SDF (2019)

There are three spatial drivers that give form to the George Municipality Spatial Development Framework:

1. Protect and manage the natural and rural environment to ensure it can function optimally as a basis for supporting and nourishing prosperous and resilient settlement and economic activity in George.
2. The second is the settlements and, within the city of George, the system of corridors and nodes must be reinforced and developed in a managed way to function as a productive and efficient system.

3. The third is the regional accessibility network that links the settlements to one another within the Greater George Area, as well as to opportunities further afield.

The proposed activity complies with **Policy D2** (*manage watercourses so that they remain in a natural state or present ecological status is improved or at least does not deteriorate*).

According to the aquatic specialist, the eroded channel within the proposed development footprint is **not a formal watercourse**, however, it extends relatively far down the steep slope **towards a non-perennial watercourse** that originates further to the west (Figure 11). Given that a watercourse is located further down the slope from the eroded channel, unmanaged stormwater may have a negative impact on the watercourse further down the slope.

The **proposed activity** addresses the stormwater issues and will reduce the energy of stormwater discharge and subsequently reduce impacts to the watercourse further down the slope.

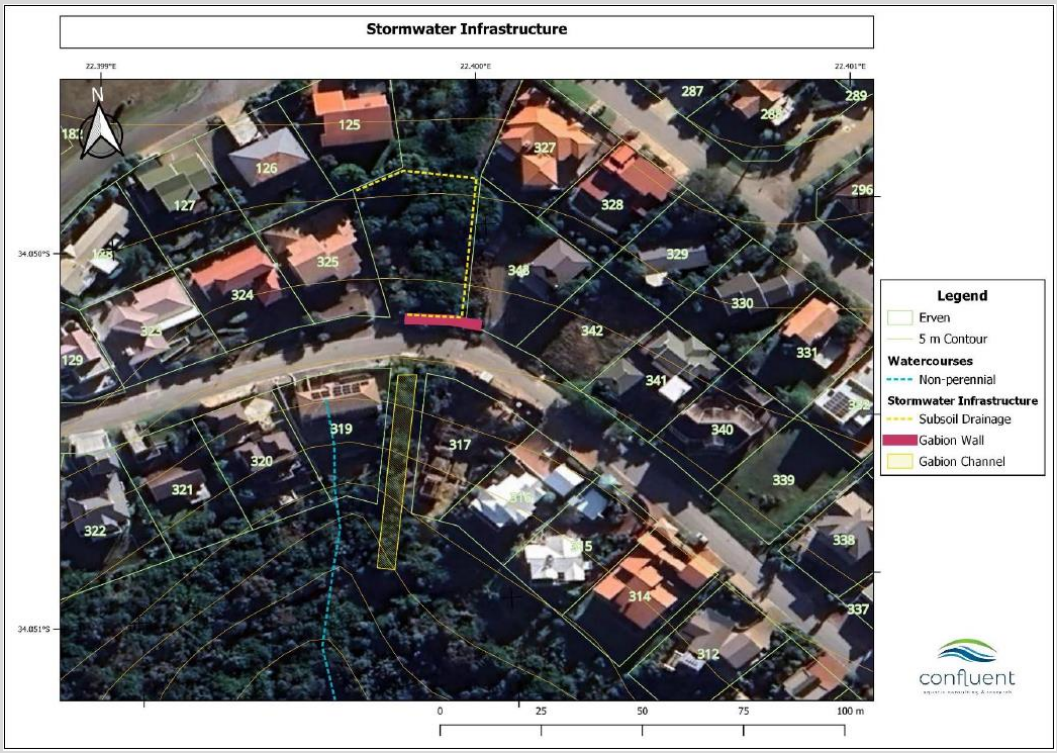


Figure 11: Map indicating location of the proposed stormwater infrastructure relative to watercourses.

5. Guidelines

List the guidelines which have been considered relevant to the proposed activity or development and explain how they have influenced the development proposal.

George SDF: Policy D4 Guidelines

- Watercourses must be correctly classified and delineated with the assistance of specialist expertise based on ground-truthing and not only geo-spatial databases.
    - According to the aquatic specialist, the eroded channel is not a formal watercourse. However, the eroded channel extends relatively far down the steep slope towards a non-perennial watercourse that originates further to the west (Figure 11). The aquatic specialist recommended the construction of a stilling basin at the outlet of the gabion channel to reduce stormwater energy and minimise erosion of the slope and watercourse downstream of the channel.
- Stormwater outlets must be designed to avoid pollution, reduce runoff, reduce chemical and biological pollution and avoid erosion.

- EAS Infrastructure Engineers designed the outlet of the stepped gabion channel (Figure 12). A stilling basin will be construction approximately 2m beyond an existing sewer line on erf 139. The stilling basin will reduce stormwater energy and minimise erosion of the slope.

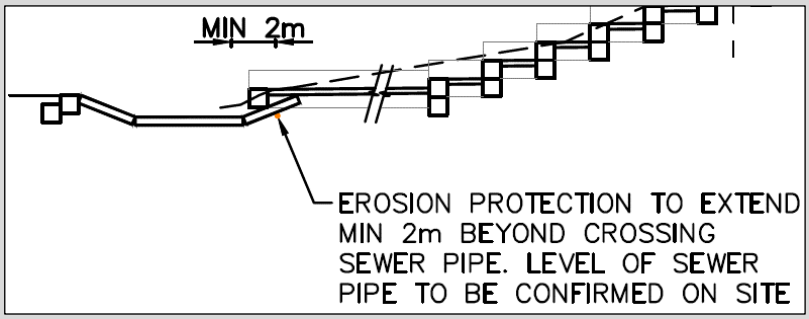


Figure 12: Stilling basin at the outlet of the stepped gabion channel.

Guideline on Need and Desirability (March 2013)

Need & Desirability refers to the temporal and spatial need of an area for a specific development.

This Guideline was used to define the requirements and implications of Need & Desirability.

Refer to section E12 for a detailed Need & Desirability project description.

Guideline on Alternatives (March 2013)

Two (2) design alternatives were considered.

Alternative 1 is considered as the "best practicable environmental option". This Alternative will cause the least of damage to the environment as it includes the stilling basin at the outlet of the gabion structure.

Alternative 2 is not deemed appropriate given the fact that it does not include a stilling basin at the outlet of the gabion structure. This alternative has been eliminated in favour of the preferred alternative and has not been assessed.

The No-Go option is not seen as feasible nor reasonable as it will lead to continued erosion and subsequent continued degradation of natural habitat.

Guideline for Environmental Management Plans (June 2005)

The EMMPr has been included with this Draft Basic Assessment Report to provide practical and implementable actions to ensure that the development maintains sustainability and minimise impacts through all its phases. The document is finalised as per the Guidelines and requirements of NEMA and covers both the construction as well as future maintenance work.

Guideline on generic terms of Reference for EAPs and Project Schedules (March 2013)

Followed guidance on:

- Generic Requirements for EAPS (what an EAP must manage).
- General Requirements for persons compiling a specialist report.
- Scope of Work (project description, primary responsibility, anticipated inputs etc.).

Guideline for determining the scope of specialist involvement in the EIA process, June 2005

This Guideline was used to determine the timing, scope and quality of specialist inputs in the EIA process.

Circular EADP 0028/2014: One Environmental Management System

This Circular provided guidance in terms of best practice (timeframes, public participation, notifications to I&APs, availability of report for comment, comments & responses etc.).

6. Protocols

Explain how the proposed activity or development complies with the requirements of the protocols referred to in the NOI and/or application form

According to the DEADP series of guidelines for the involvement of specialists in the EIA process (2005), one of the underpinning generic principles is to **eliminate the unnecessary specialist involvement** through proactive project planning and design to avoid or sufficiently reduce negative impacts.

Another is to **maximise the use of existing relevant information** prior to involving a specialist. This includes the input from the EAP and specialists, in the form of site photographs and site inspections. These principles apply to the specialist studies that have been identified in the screening tool and motivated as not necessary in this report.

The Screening Tool identified the following studies as potentially being applicable to the proposed development:

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture Theme		X		
Animal Species Theme		X		
Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme	X			
Civil Aviation Theme	X			
Defence Theme				X
Plant Species Theme			X	
Terrestrial Biodiversity Theme	X			

Agriculture Theme

The Screening Tool identifies the agricultural sensitivity theme as "high". The EAP refutes this sensitivity and awards it the lowest possible rating (Low), however considering below explanation it is submitted that this theme is not applicable.

The development footprint of the proposed activity is unsuitable for agricultural activities:

- The proposed development footprint is located within an urban environment surrounded by non-agricultural uses (residential dwellings) within the urban edge of Herolds Bay (Figure 13).
- The proposed site is zoned for Public Open Space.
- The site has not been utilised for agricultural purposes and will never be utilised for agricultural purposes.
- The slopes are too steep for agricultural activities (Figure 13).
- The cadastral layout of the site is not conducive to agricultural activities.

In addition to the above agricultural constraints, the nature of the proposed development also does not necessitate the need for an agricultural study as it falls within an urban edge with

established residential development. A subsoil drain will be installed on erf 326 with a gabion basket structure on its southern boundary to prevent further erosion. Erf 318 is already highly transformed as a result from stormwater runoff and neighbouring building works. The gabion channel will extend into a very small portion of erf 139 (approximately 2m beyond the existing sewer line).

Considering the **nature of proposed development** (erosion protection infrastructure) and the agricultural constrains of the site, the EAP disputes the high sensitivity of the proposed site and confirms that it should be **not applicable**. There is no need to conduct an agricultural study.

The **Department of Agriculture** (DoA) has been approached for comment as part of the Public Participation process.

Figure 13: Left Photograph: Erf 326 surrounded by residential dwellings. Right Photograph: Erf 318 & 139 (already transformed as a result of stormwater runoff and adjacent building activities).

Animal Species Theme

The screening tool identified the sensitivity for animal species (fauna) as "high" for the following SCC:

Sensitivity	Feature(s)
High	Aves-Bradypterus sylvaticus
Medium	Sensitive species 8
Medium	Invertebrate-Aneuryphymus montanus

According to the faunal specialist, Aves-Bradypterus sylvaticus (Knysna Warbler) is a vulnerable bird species occurring in dense thickets dominated by Milkwood. The faunal specialist confirmed that the *Knysna Warbler* is **unlikely to occur** within the study area i.e., proposed development footprint.

Sensitive Species 8 is **highly unlikely to occur** within the proposed development footprint as they prefer dense thicket vegetation (not observed within the development footprint).

A. Montanus is not known from the area, and the habitat is also **not suitable** for this species.

The faunal specialist refutes the screening tool sensitivity designated and confirmed that the faunal sensitivity is 'Low'. A **Faunal Compliance Statement** (Appendix G1) was compiled.

CapeNature has been approached for comment as part of the Public Participation process.

Aquatic Biodiversity Theme

The screening tool identified the aquatic biodiversity theme as "very high".

The aquatic specialist confirmed the following:

- No aquatic biodiversity will be impacted as a result of the construction of the gabion channel (including subsoil drains and gabion wall).

- The proposal is aligned with the management objectives of SWSAs (Strategic Water Source Areas) and will result in improved protection of the natural watercourse further down the slope.
- With respect to the WCBSP (Western Cape Biodiversity Spatial Plan), while the construction footprint falls within an aquatic ESA2, it does not fall within the watercourse for which this aquatic ESA2 has been assigned.
- Construction of the gabion channel will reduce the current impact on water-related services by allowing for the continued delivery of surface runoff without further degradation to CBA habitat further down the slope.

The aquatic specialist thus refutes the screening tool sensitivity and confirms instead that a 'Low' aquatic sensitivity is more appropriate. An **Aquatic Compliance Statement** (Appendix G2) was compiled.

BOCMA has been approached for comment as part of the Public Participation Process.

Archaeological & Cultural Heritage Theme

The proposed stormwater infrastructure **does not trigger** any of the development activities listed in terms of Sections 34(1) and 38(1) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (Figure 14) (Appendix G3).

Sec. of NHRA	Development Trigger	Yes/ No
38(1)(a)	"Construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length"	**No**
38(1)(b)	"Construction of a bridge or similar structure exceeding 50m in length"	**No**
38(1)(c)	"Any development or other activity which will change the character of a site:	
	Exceeding 5,000m² in extent;	**No**
	Involving three or more existing erven or subdivisions thereof;	**No**
	Involving three or more erven or divisions thereof, which have been consolidated within the past five years;	**No**
	Costs of which will exceed a sum set in terms of regulations by SAHRA or a PHRA."	**No**
38(1)(d)	"The rezoning of a site exceeding 10,000m² in extent"	**No**
38(1)(e)	"Any other category of development provided for in the regulations by SAHRA or a PHRA."	**No**

Figure 14: Applicability of Section 38(1) of the National Heritage Resources Act, 1999 (Act 25 of 1999) compiled by Perception Planning.

Heritage Western Cape has been approached for comment as part of the Public Participation Process.

Civil Aviation Theme

The screening tool identified this theme as "very high".

The development will **not trigger the obstacle collision / potential hazard requirements** as set out by the CAA, i.e.

- Buildings or other objects which will constitute an obstruction or potential hazard to aircraft moving in the navigable air space in the vicinity of an aerodrome, or navigation aid, or which will adversely affect the performance of the radio navigation or instrument landing systems,
- There are no buildings or objects higher than 45 metres above the mean level of the landing area,
- No building, structure or object that projects above a slope of 1 in 20 and which is within 3000 metres measured from the nearest point on the boundary of an aerodrome,
- No building, structure or other objects which will project above the approach, transitional or horizontal surfaces of an aerodrome.

The EAP refutes the sensitivity awarded by the Screening Tool and instead awards the lowest possible rating of 'Low' instead. However given the above motivations, there are no reasonable

grounds for any specialist studies to confirm this. SACAA has been approached for comment as part of the Public Participation Process.

Defence Theme

The EAP is of the opinion that the theme is not applicable to this application. Since there is no provision in the Protocols for 'not applicable' the lowest possible rating level of 'Low' remains. There are no reasonable grounds to conduct any specialists' studies to affirm this and further consultation with the Department of Defence is not necessary.

Plant Species Theme

The screening tool identified this theme as "Medium" for the following species.

Sensitivity	Feature(s)
Low	Low Sensitivity
Medium	Lampranthus pauciflorus
Medium	Lebeckia gracilis
Medium	Erica glandulosa subsp. fourcadei
Medium	Hermannia lavandulifolia
Medium	Sensitive species 1024
Medium	Sensitive species 1032
Medium	Euchaetis albertiniana
Medium	Sensitive species 516
Medium	Sensitive species 800
Medium	Sensitive species 500
Medium	Diosma passerinoides

According to the Botanist, no protected tree species were observed on site. One (1) plant SCC was observed in the open canopy vegetation immediately north of Voëlklip street (erf 326), *Erica glandulosa fourcadei* (VU).

The Botanist disputes the medium sensitivity and confirms that it should be 'High' instead given the presence of the SCC.

The Botanist compiled a **Botanical Impact Assessment** (Appendix G4).

CapeNature has been approached for comment as part of the Public Participation Process.

Terrestrial Biodiversity Theme

According to the specialist, due to the nature of the proposed activity and the continued degradation of CBA and CR endangered habitat, the terrestrial biodiversity sensitivity of the proposed development footprint is low and as such refutes the Screening Tool sensitivity rating and confirms it to be 'Low'.

It is the opinion of the specialist that a Terrestrial Biodiversity assessment is not necessary, as the proposed activity itself will lead to the improvement of all the triggers for the terrestrial biodiversity sensitivity that was given in the screening tool report.

A **Terrestrial Biodiversity Compliance Statement** was compiled by the specialist (Appendix G4).

CapeNature has been approached for comment as part of the Public Participation Process.

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.	The exclusion for development of such infrastructure within an urban area does not apply since the Department is of the view that these erven, where the infrastructure will be positioned falls outside the 'urban area'. Deducting from surveyed contours, the stormwater outlet will discharge towards a lower lying area, however the watercourse does not start at the site itself. Approximately 250m^2 of the stormwater structure is estimated to fall within the 32m buffer of a watercourse located directly to the south-west of the site.
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 300m^2 or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEM:BA 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. iv. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space,	An area of more than 300m^2 of vegetation will be removed for the installation of subsoil drains and construction of a gabion basket wall, stepped gabion basket channel and associated stormwater infrastructure. According to CapeFarmMapper (2024) the area consists of Garden Route Granite Fynbos. The appointed Botanist (Ms Bianke Fouche) conducted a Terrestrial Biodiversity and Botanical Site Sensitivity Verification. According to Bianke, the vegetation on site was more consistent with a thicket than with Fynbos. Large sections of Erf 326 were occupied by garden escapee plants. The thicket vegetation, apart from the road verges and eroded section, is most likely Groot Brak Dune Strandveld.

Note:

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

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

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

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

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

SECTION E: PLANNING CONTEXT AND NEED AND DESIRABILITY

1.	Provide a description of the preferred alternative.

The following **stormwater infrastructure** is proposed:

Erf 326

- A **subsoil drain** will be installed on erf 326 to collect runoff from higher lying erven (erven 125 and 327) (Figure 15 – Green Arrows).
- A 2m high **gabion basket wall** will be constructed just outside the southern boundary of erf 326 to prevent further erosion (Figure 15 – Purple Box).
- The subsoil drain will run underneath the gabion structures where it will be tied in at **a reconstructed and enlarged catchpit** structure (Figure 15).
- The **crossing pipe** which extends underneath Voëlklip Street will be upgraded to a 750mm diameter pipe.

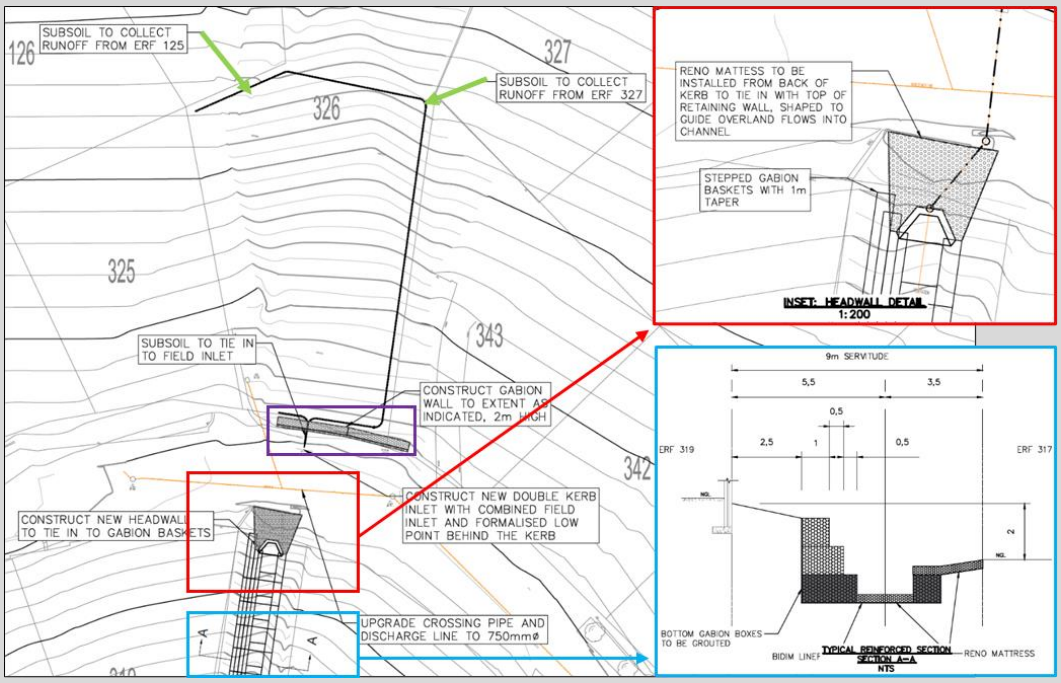


Figure 15: Erosion protection layout for Erven 326 & 318 – subsoil drains, gabion basket and reno mattress (source: EAS Infrastructure Engineers).

Erf 318 and a portion of Erf 139

It is proposed to construct a **stepped gabion basket channel** and associated infrastructures (reno mattresses, retaining walls) on erf 318 and a small portion of erf 139 to control erosion and stormwater runoff (Figure 15 – Red & Blue Boxes). The western section of this gabion channel will be further extended to the west to provide additional support to the boundary wall of erf 319 (Figure 15 – Blue Box) (Figure 16). The outlet of the gabion basket channel will be on erf 139, approximately 2m beyond an existing sewer line (Figure 16). As per the aquatic specialist recommendation, a **stilling basin** will be constructed at this outlet to further reduce stormwater energy and minimise erosion of the slope (Figure 16 – Blue Arrow).

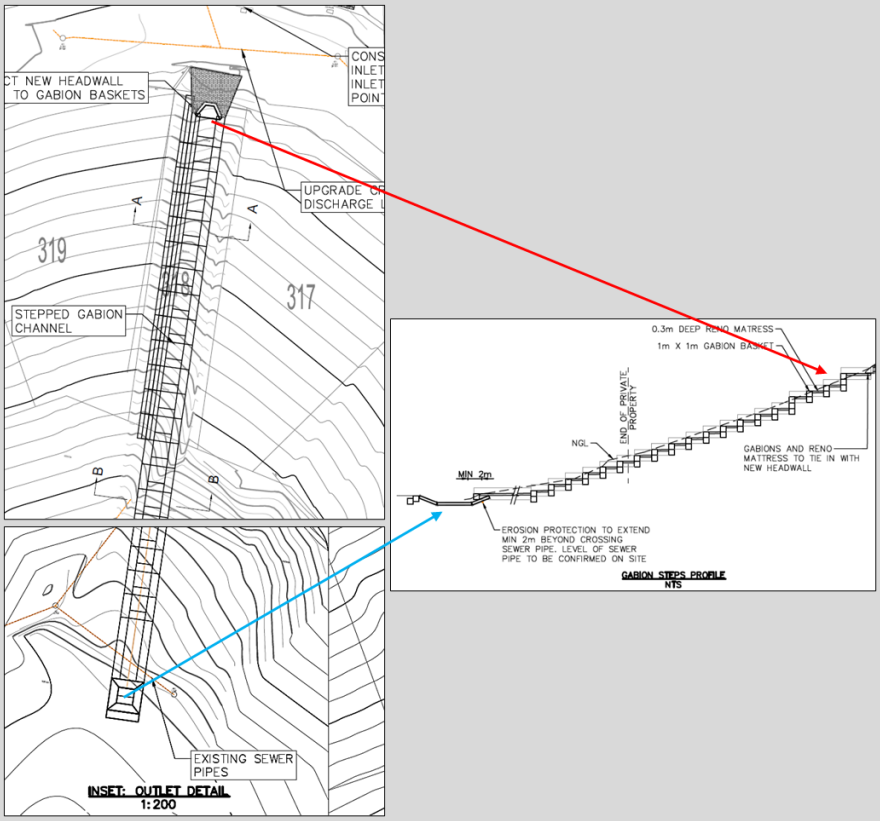


Figure 16: Erosion Protection for erven 318 & 139 (Plan & Section View) – stepped gabion channel ending with a stilling basin approx. 2m beyond the existing sewer pipeline.

2.	Explain how the proposed development is in line with the existing land use rights of the property as you have indicated in the NOI and application form? Include the proof of the existing land use rights granted in Appendix E21.

The site is located within the urban area of Herolds Bay surrounded by residential properties. The current zoning of the properties is Open Space Zone I i.e. not for conservation purposes. The activity is not against the objective of Open Space I which is to provide for active and passive recreational areas on public land, to promote recreation, and enhance the aesthetic appearance of an area.

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.

Existing approvals: Not to the knowledge of the EAP.

Potential conflict: Not applicable.

4.	Explain how the proposed development will be in line with the following?
4.1	The Provincial Spatial Development Framework.

The proposed activity aligns with **Policy R1: Protect Biodiversity and Ecosystem Services** in the Western Cape PSDF (2014).

The **proposed activity** will prevent further erosion and subsequent degradation to the habitat. According to the botanical/biodiversity specialist, should the proposed activity go ahead, the Terrestrial Biodiversity will recover enough to become functional once more as a healthy ESA. Therefore, it is essential that this proposed stormwater infrastructure be implemented to avoid further degradation of the ecosystem downstream.

4.2	The Integrated Development Plan of the local municipality.

According to George Municipality's Integrated Development Plan (2022 – 2027), most flooding issues are due to inadequate maintenance of stormwater structures and insufficiently sized pipes. George Municipality appointed EAS infrastructure Engineers to compile a Herolds Bay Stormwater Master Plan.

4.3.	The Spatial Development Framework of the local municipality.

The proposed activity complies with **Policy D2** (*manage watercourses so that they remain in a natural state or present ecological status is improved or at least does not deteriorate*).

The **proposed activity** addresses the erosion problem and will reduce the energy of stormwater discharge and subsequently reduce impacts to the watercourse further down the slope.

4.4.	The Environmental Management Framework applicable to the area.

Not applicable.

5.	Explain how comments from the relevant authorities and/or specialist(s) with respect to biodiversity have influenced the proposed development.

Comments received during the public participation process from relevant authorities and/or specialists will be included in the Final BAR.

6.	Explain how the Western Cape Biodiversity Spatial Plan (including the guidelines in the handbook) has influenced the proposed development.

According to the Western Cape Biodiversity Spatial Plan (WCBSP), a portion of the proposed development site is located within an Ecological Support Area (Figure 17).

Figure 17: CBA & ESA map of the proposed development footprint (yellow outline). The red line on erf 326 represents the approximate locality of the proposed subsoil drain.

An Ecological Support Area is not essential for meeting biodiversity targets. These areas are important in supporting functioning of PA or CBAs. Often vital for ecosystems services. Its objective is to restore/minimise impact on ecological infrastructure functioning, especially soil and water-related services.

The reasons for this assignment to the BSP layers in this area are listed below:

- Garden Route Granite Fynbos

- The only fynbos remaining on site is associated with road verges. This vegetation type is largely missing on the site.

- Groot Brak Dune Strandveld
  - This vegetation type occurs south of the development footprint.
  - According to the botanical/biodiversity specialist, should the proposed activity go ahead, the Terrestrial Biodiversity will recover enough to become functional once more as a healthy ESA.
- Watercourse Protection
  - This BSP trigger falls outside of the scope of the study.
  - According to the aquatic specialist, while the development footprint falls within an aquatic ESA2, it does not fall within the watercourse for which this ESA has been assigned for. The proposed activity will deliver stormwater without causing further degradation to CBA habitat further down the slope.
- Bontebok extended distribution range.
  - This BSP trigger falls outside of the scope of the study.

7.	Explain how the proposed development is in line with the intention/purpose of the relevant zones as defined in the ICMA.

Not Applicable.

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 tool has not changed. It is still the same screening tool submitted with the application form.

9.	Explain how the proposed development will optimise vacant land available within an urban area.

- The proposed activity will protect infrastructure of neighbouring properties i.e. boundary walls.
- The proposed activity will prevent further degradation of vacant land further down the slope.
- The proposed activity will prevent further degradation of ESA as well as CBA.

10.	Explain how the proposed development will optimise the use of existing resources and infrastructure.

- The proposed activity will make use of existing municipal streets for access during the construction phase.
- The proposed activity entails the formalisation of an existing municipal stormwater channel.

11.	Explain whether the necessary services are available and whether the local authority has confirmed sufficient, spare, unallocated service capacity. (Confirmation of all services must be included in Appendix E16).

Not applicable.

The proposed development will not use water or electricity and does not generate sewage.

George Municipality proposes to upgrade the existing crossing stormwater pipe underneath Voëlklip street to 750mm diameter, to allow for increased capacity and prevent flooding, including the reconstruction of a new double kerb inlet catchpit.

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.

"Need", as defined by DEADP refers to the timing of the proposal and the "Desirability" refers to the placing of the proposed development.

The **timing** is correct for this proposed activity because it is **critical** to manage stormwater runoff from higher lying erven to (a) prevent further damage to property's boundary walls, (b) prevent further erosion down slope and (c) prevent further degradation of habitat (ESA & CBA).

In terms of **desirability** of this project, the location is site-specific, at the point of highest risk, and dictates where the activity must be implemented. The location of this site with neighbouring properties and natural habitat being at risk further motivates in favour of implementing the necessary stormwater measures.

The following Need & Desirability questions are applicable to the proposed activity (source: Guideline on Need and Desirability, EIA Guideline and Information Document Series, 2013).

How will this development (and its separate elements/aspects) impact on the ecological integrity of the area?

It will have a positive impact on the ecological integrity of the area. According to the botanical/biodiversity specialist, should the proposed activity go ahead, the Terrestrial Biodiversity will recover enough to become functional once more as a healthy ESA. Therefore, it is essential that this proposed stormwater infrastructure be implemented to avoid further degradation of the ecosystem downstream.

How are the following ecological integrity considerations taken into account?

Threatened Ecosystems

The site has been severely degraded mainly by erosion. According to the botanical/biodiversity specialist, the vegetation on site is more consistent with a thicket than with fynbos. Large sections of erf 326 was occupied by garden escapee plants and was no longer a natural thicket. The vegetation on erf 318 is undergoing unnatural disturbance, with severe erosion on the site. Erf 139 consists of natural thicket vegetation except for the portion within the development footprint which is highly degraded. The terrestrial biodiversity sensitivity for the proposed project footprint on these erven is low due to the level of degradation that has already occurred from erosion.

Watercourses

According to the aquatic specialist, the eroded channel within the proposed development footprint is not a formal watercourse, however, it extends relatively far down the steep slope towards a non-perennial watercourse that originates further to the west. Given that a watercourse is located further down the slope from the eroded channel, unmanaged stormwater may have a negative impact on the watercourse further down the slope.

The proposed activity addresses the erosion problem and will reduce the energy of stormwater discharge and subsequently reduce impacts to the watercourse further down the slope.

Critical Biodiversity Areas ("CBAs") and Ecological Support Areas ("ESAs")

The proposed activity will not impact on the ESA2 and CBA (further down slope). According to the aquatic specialist, the development footprint of the proposed activity does not fall within the watercourse for which the ESA has been assigned. Furthermore, the proposal is aligned with the management objectives of SWSAs and will result in improved protection of the natural watercourse further down the slope.

According to the botanical/biodiversity specialist, the proposed activity will lead to the improvement of all the triggers for the terrestrial biodiversity sensitivity that was given for the site.

How will this development disturb or enhance ecosystems and/or result in the loss or protection of biological diversity? What measures were explored to firstly avoid these negative impacts, and

where these negative impacts could not be avoided altogether, what measures were explored to minimise and remedy the impacts? What measures were explored to enhance positive impacts?

The proposed activity will not result in any further loss/disturbance of biological diversity. It will enhance the ecosystem by protecting it against further erosion and degradation. Refer to the EMMPr (Appendix H) for all mitigation measures to avoid negative impacts and enhance positive impacts.

What waste will be generated by this development?

Construction waste will be generated by this development during the construction phase.

What is the socio-economic context of the area, based on, amongst other considerations, the following considerations?

Please refer to Sections E(nr. 4) & G(nr. 7 & 8) for detailed descriptions on socio-economic aspects as well as cultural & heritage aspects of this activity.

SECTION F: PUBLIC PARTICIPATION

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

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

(a)	fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of -			
(i)	the site where the activity to which the application relates is or is to be undertaken; and		YES	~~EXEMPTION~~
(ii)	any alternative site.		YES	~~EXEMPTION~~
(b)	giving written notice, in any manner provided for in section 47D of the NEMA, to –			
(i)	the occupiers of the site and, if the applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;		~~YES~~	~~EXEMPTION~~
(ii)	owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;		YES	~~EXEMPTION~~
(iii)	the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;		YES	~~EXEMPTION~~
(iv)	the municipality (Local and District Municipality) which has jurisdiction in the area;		YES	~~EXEMPTION~~
(v)	any organ of state having jurisdiction in respect of any aspect of the activity; and		YES	~~EXEMPTION~~
(vi)	any other party as required by the competent authority;	~~N/A~~	YES	~~EXEMPTION~~
(c)	placing an advertisement in -			
(i)	one local newspaper; or		YES	~~EXEMPTION~~
(ii)	any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;	N/A	~~YES~~	~~EXEMPTION~~
(d)	placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken.	N/A	~~YES~~	~~EXEMPTION~~
(e)	using reasonable alternative methods, as agreed to by the Department, in those instances where a person is desirous of but unable to participate in the process due to— (i) illiteracy; (ii) disability; or (iii) any other disadvantage.	~~N/A~~	YES	~~EXEMPTION~~

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

The Public Participation Plan as indicated in the application form has been complied with:

- Neighbouring property owners were identified using CapeFarmMapper,
- Select neighbouring property owners were compiled into a list sent to the George Municipality for confirmation of contact details,
- Key Authorities were identified according to whether they have a mandated interest in the area/site,
- Local Councillor was verified with the George Municipality,
- Site Notices were placed on site calling for I&APs to register and review the DBAR,
- Written notifications were sent to all potential I&APs via email/post/hand delivery informing of the availability of the DBAR and the opportunity to register as an I&AP.
- Advert appeared in the *George Herald* for I&APs to register and submit comment on the DBAR.

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

George Municipality: Technical (Mr Lionel Daniels)

BOCMA (Mr Carlo Abrahams)

George Municipality: Parks (Tyrone April & Nosidima Vumindaba)

CapeNature (Megan Simons)

Garden Route District Municipality (Ms Nina Viljoen)

Heritage Western Cape (Stephanie-Ann Barnardt)

Department of Agriculture (Mr Cor van der Walt)

Department of Forestry: (Melanie Koen)

SACAA (Evelyn Shogole)

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

Department of Defence – The EAP is of the opinion that the theme is not applicable to this application. Since there is no provision in the Protocols for 'not applicable' the lowest possible rating level of Low remains. There are no reasonable grounds to conduct any specialists' studies to affirm this and further consultation with the Department of Defence is not necessary.

Department of Health – The EAP is of the opinion that this matter does not relate to human health or any aspect that might impact on human health/services.

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

All comments received in response to the DBAR will be reflected in the Final BAR and information will then be available as to which State Departments, if any, did not respond within the prescribed 30-day commenting period.

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.

Issues raised by I&APs during the Public Participation Period will be reflected in the Final 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 pre -application BAR (if applicable and the draft BAR must be recorded, responded to and included in the Comments and Responses Report and must be included in Appendix F.

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

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

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

SECTION G: DESCRIPTION OF THE RECEIVING ENVIRONMENT

All specialist studies must be attached as Appendix G.

1. Groundwater

1.1.	Was a specialist study conducted?	~~YES~~	NO
~~1.2.~~	~~Provide the name and or company who conducted the specialist study.~~		
~~1.3.~~	~~Indicate above which aquifer your proposed development will be located and explain how this has influenced your proposed development.~~		
~~1.4.~~	~~Indicate the depth of groundwater and explain how the depth of groundwater and type of aquifer (if present) has influenced your proposed development.~~		

2. Surface water

2.1.	Was a specialist study conducted?	YES	~~NO~~
2.2.	Provide the name and/or company who conducted the specialist study.		
Confluent Environmental (Dr Dabrowski).			
2.3.	Explain how the presence of watercourse(s) and/or wetlands on the property(ies) has influenced your proposed development.		

According to the aquatic specialist, the site visit revealed a highly eroded channel (not a natural watercourse) that extends relatively far down the steep slope to the south of Voëlklip Road towards the direction of a non-perennial watercourse that originates further to the west (Figure 18).

This has been caused by stormwater flows originating from a culvert beneath Voëlklip Road.

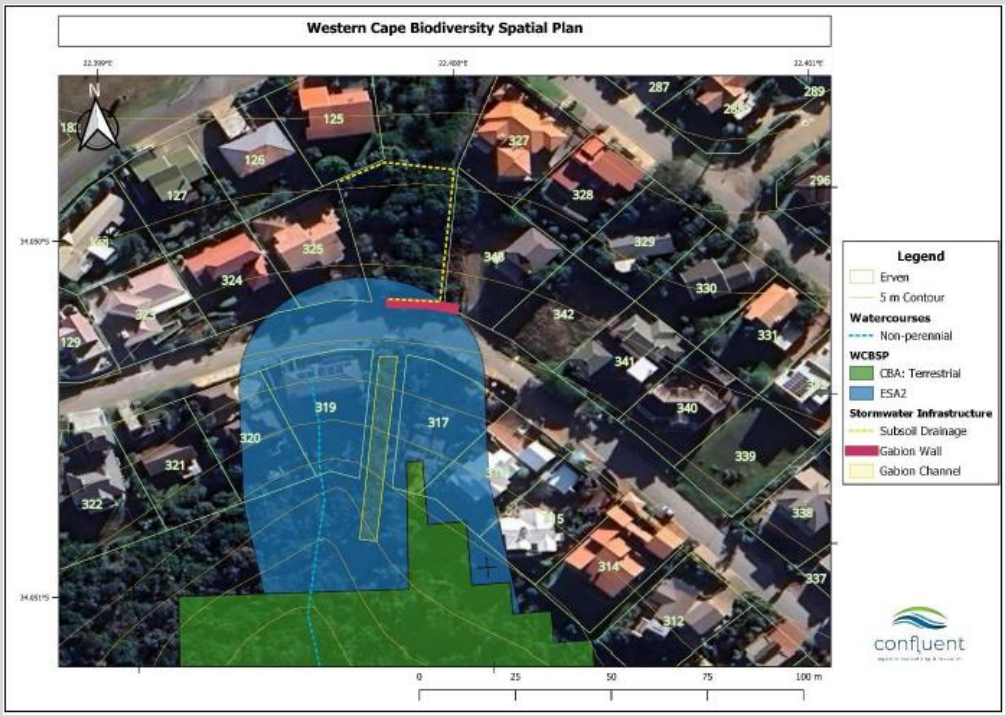


Figure 18: Location of the property in relation to the Western Cape Biodiversity Spatial Plan (source: Confluent Environmental).

Dr Dabrowski confirmed the following:

- No aquatic biodiversity will be impacted because of the construction of the gabion channel (including subsoil drains and gabion wall).
- The proposal is aligned with the management objectives of SWSAs and will result in improved protection of the natural, watercourse further down the slope.
- With respect to the WCBSP, while the construction footprint falls within an aquatic ESA2, it does not fall within the watercourse for which this ESA has been assigned.
- Construction of the gabion channel will reduce the current impact on water-related services by allowing for the continued delivery of surface runoff without further degradation to CBA habitat further down the slope.

Dr Dabrowski made the following recommendations which have been included in the EMMPr:

- A construction schedule must be developed and clearly defined to avoid multiple sites being exposed and unattended to at any moment in time. The completion date for each phase of the construction must be indicated and all clearing, excavation, and stabilisation operations must be completed before moving onto the next phase.
- Dry working conditions must be established in the channel. Stormwater originating from the outlet on Voëlklip Road must be temporarily diverted around the construction site and safely discharged into the channel below.
- A temporary straw-bale check dam must be placed across the channel, immediately downstream of the construction area as a back-up to trap high levels of sediment in the event of a high rainfall event. The check dam and any accumulated sediment must be removed by hand as soon as construction is complete.
- No construction materials or topsoil must be stockpiled within the eroded channel. Stockpiles of construction materials must be placed outside of the channel (on as flat an area as possible) and protected (e.g. through use of sandbags and/or tarpaulins) to prevent materials being washed into the channel.
- Construction of a stilling basin at the outlet of the gabion channel should be considered so as further reduce stormwater energy and minimise erosion of the slope and watercourse downstream of the channel.

3. Coastal Environment

3.1.	Was a specialist study conducted?	~~YES~~	NO
~~3.2.~~	~~Provide the name and/or company who conducted the specialist study.~~		
~~3.3.~~	~~Explain how the relevant considerations of Section 63 of the ICMA were taken into account and explain how this influenced your proposed development.~~		
~~3.4.~~	~~Explain how estuary management plans (if applicable) has influenced the proposed development.~~		
~~3.5.~~	~~Explain how the modelled coastal risk zones, the coastal protection zone, littoral active zone and estuarine functional zones, have influenced the proposed development.~~		

4. Biodiversity

4.1.	Were specialist studies conducted?	YES	NO
4.2.	Provide the name and/or company who conducted the specialist studies.		
Confluent Environmental (Ms Bianke Fouche).			
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.		

- The DFFE Screening Tool.
- SANBIs Botanical Research and Herbarium Management System.
- iNaturalist.
- The 2018 updated South African National Vegetation Map from SANBIs Biodiversity GIS database.
- Shapefiles for the Western Cape Biodiversity Spatial Plan.
- Cape Farm Mapper.
- Chief Directorate: National Geo-spatial Information Geospatial Portal and Google Earth.
- Revised National List of Ecosystems.

The botanical/biodiversity specialists used the above-mentioned biodiversity informants to compile a detailed Botanical and Terrestrial Biodiversity Assessment.

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.

According to the WCBSP, a portion of the proposed development site is located within an Ecological Support Area.

An Ecological Support Area is not essential for meeting biodiversity targets. These areas are important in supporting functioning of PA or CBAs. Often vital for ecosystems services. Its **objective** is to restore/minimise impact on ecological infrastructure functioning, especially soil and water-related services.

The reasons for this assignment to the BSP layers in this area are listed below (Figure 19):

- Garden Route Granite Fynbos
  - The only fynbos remaining on site is associated with road verges. This vegetation type is largely missing on the site.
- Groot Brak Dune Strandveld
  - This vegetation type occurs south of the development footprint.
  - According to the botanical/biodiversity specialist, should the proposed activity go ahead, the Terrestrial Biodiversity will **recover** enough to become functional once more as a healthy ESA.
- Watercourse Protection
  - This BSP trigger falls outside of the scope of the study.
  - According to the aquatic specialist, while the development footprint falls within an aquatic ESA2, it does not fall within the watercourse for which this ESA has been assigned for. The proposed activity will deliver stormwater without causing **further degradation** to CBA habitat further down the slope.
- Bontebok extended distribution range.
  - This BSP trigger falls outside of the scope of the study.

Figure 19: CBA & ESA map of the proposed development footprint (yellow outline). The red line on erf 326 represents the approximate locality of the proposed subsoil drain.

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

- The proposed activity will not have a negative impact on site-specific features or the function of the Biodiversity Spatial Plan.
- According to the aquatic specialist, the proposed development will not impact on any watercourses nearby or any aquatic biodiversity.
- According to the botanical/biodiversity specialist, the proposed development may result in a healthy ESA. The activity will not impact on ESA / CBA.

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.

The proposed development is not located in a protected area.

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

According to the fauna specialist, the site has a low faunal sensitivity due to:

- Very low likelihood of *A.montanus* occurring at the site.
  - The habitat present (thicket vegetation) is not suitable for this species.
  - This species prefers arid fynbos vegetation on a rocky substrate – not found on site.
- Highly unlikely presence of *B. sylvaticus & Sensitive Species 8* at the site.
  - The vegetation within the proposed development footprint is not suitable for the Knysna Warbler (B. sylvaticus).
  - Erf 326 is unlikely to support breeding populations of the Knysna Warbler due to its relatively small size.
  - The proposed development footprint within erven 318 & 139 is heavily eroded with little to no thicket vegetation left.
  - Sensitive species 8 prefer dense thicket vegetation which is not observed within the development footprint.

The proposed activity is **unlikely to impact on any SCC** as they are unlikely to occur in the development footprint.

5. Geographical Aspects

Explain whether any geographical aspects will be affected and how has this influenced the proposed activity or development.
No geographical aspects will be affected by the proposed development.

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.		

According to Perception Planning, the proposed activity does not trigger any of the development activities listed in terms of Section 38(1) of the National Heritage Resources Act, 1999 (Act 25 of 1999) ("NHRA"):

Sec. of NHRA	Development Trigger	Yes/ No
38(1)(a)	"Construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length"	No
38(1)(b)	"Construction of a bridge or similar structure exceeding 50m in length"	No
38(1)(c)	"Any development or other activity which will change the character of a site:	
	Exceeding 5,000m² in extent;	No
	Involving three or more existing erven or subdivisions thereof;	No
	Involving three or more erven or divisions thereof, which have been consolidated within the past five years;	No
	Costs of which will exceed a sum set in terms of regulations by SAHRA or a PHRA."	No
38(1)(d)	"The rezoning of a site exceeding 10,000m² in extent"	No
38(1)(e)	"Any other category of development provided for in the regulations by SAHRA or a PHRA."	No

~~6.3.~~	~~Explain how areas that contain sensitive heritage resources have influenced the proposed development.~~

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.
There are no culturally or historically significant elements that will be affected by the proposed activity.

8. Socio/Economic Aspects

8.1.	Describe the existing social and economic characteristics of the community in the vicinity of the proposed site.

Herolds Bay is a historic coastal recreation and holiday destination that comprises of the old seaside village (Herolds Bay Lower), while Herolds Bay Upper comprises more recent residential development.

Herolds Bay Upper has the following existing economic activities:

- Down to Earth Restaurant / Weddings and Functions Venue
- Dutton's Cove Restaurant
- Herolds Bay ECO Resort
- Guesthouses
- Oubaai Golf Resort & Spa

Herolds Bay Lower has the following existing economic activities:

- Estate Agency
- Local neighbourhood store
- Herolds Bay Caravan Park
- Herolds Bay Hotel

According to the Herolds Bay Local Structure Plan (2009), George Municipality currently focusses on maintaining the present environmental, rural and settlement character of the area which includes the following:

- Permit very little additional development.
- Support compact development in areas approved for further residential development.
- Support the development of a neighbourhood support centre.
- Resist any form of expansion, densification, or development of residential, eco and golf estates.
- No further high-density developments.

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

The proposed development will prevent further property damage which may result in civil suits against the Municipality should they not act on maintenance in this instance.	
8.3.	Explain what social initiatives will be implemented by applicant to address the needs of the community and to uplift the area.
The Applicant will appoint a contractor for the work and the Municipality's protocol for maximizing local labour will be a condition of the appointment.	
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.
The key social issues associated with the proposed activity may include some temporary negative impacts during the construction phase: • Negative: Security and safety risk posed by workers when conducting the work. • Negative: Temporary noise impacts for residents. • Positive: Repair to the failing stormwater system thereby avoiding potential risk of flooding and damage to neighbouring properties in the immediate area.	

SECTION H: ALTERNATIVES, METHODOLOGY AND ASSESSMENT OF ALTERNATIVES

1. Details of the alternatives identified and considered.

1.1.	Property and site alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.
Provide a description of the preferred property and site alternative.	
Erf 326, 318 and 139, Herolds Bay, George Municipal District.	
Provide a description of any other property and site alternatives investigated.	
Provide a motivation for the preferred property and site alternative including the outcome of the site selectin matrix.	
Recent flooding in the greater George areas has resulted in damage to existing municipal infrastructure in Herolds Bay and highlighted the need to improve the control and management of stormwater runoff. • Although erf 326 is well vegetated, signs of erosion was noted at the base of its slope, as well as a consistent seepage of groundwater. • Combined storm damage and building works resulted in the stripping of vegetation along erven 318 and 139 and thus increasing the impact of erosion. • According to **EAS infrastructure**, the drainage system at these erven has both operational and hydraulic deficiencies. The potential of flooding due to blocked and damaged infrastructure was evident in these areas. • The type of soil encountered in the development footprint consists of a clayey fine soil which is expected to have a low infiltration rate with restricted permeability characteristics. • According to the **aquatic specialist**, construction of the gabion channel along erven 318 and 139 will reduce the current impact on water-related services by allowing for the continued delivery of surface runoff without causing further degradation of CBA habitat further down the slope. • According to the **botanical/biodiversity specialist**, the proposed activity will prevent further degradation of the ecosystem downstream which aligns with the Principle of NEMA as well as the IEM Principles that confirm that action must be taken to avoid unnecessary negative impact on the receiving environment.	

- According to the **faunal specialist**, urgent remediation measures within these erven are required as it is evident that every major rainfall event will result in more severe negative impacts to the environment.

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

- The Applicant appointed EAS infrastructure Engineers to assess the preferred site alternative.
- EAS Infrastructure Engineers:
  - assessed the extend of erosion and the factors leading thereto,
  - assessed the capacity of existing infrastructure,
  - identified problematic areas prone to flooding during minor and major rainfall events,
  - provided an engineering solution to address the current damage, prevent further erosion and protect neighbouring properties.

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

Considering the extend of erosion along these erven and the real risks it poses to damaging neighbouring properties, it is evident that stormwater runoff must be addressed within this area.

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

Preferred Property Alternative

Positive

- Neighbouring properties will no longer be at risk.
- No further degradation of ESA habitat within the development footprint and CBA habitat further downstream because of appropriate management of stormwater runoff.

Negative

- Temporary noise & safety impacts during construction.
  - The preferred property alternative is surrounded by residential erven.
- Loss of indigenous vegetation.
  - According to the botanical/biodiversity specialist, the vegetation on site is more consistent with a thicket than with fynbos. Large sections of erf 326 was occupied by garden escapee plants and was no longer a natural thicket. The vegetation on erf 318 is undergoing unnatural disturbance, with severe erosion on the site. Erf 139 consists of natural thicket vegetation except for the portion within the development footprint which is highly degraded.
  - Disturbed areas will be rehabilitated with indigenous vegetation.

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

Provide a description of the preferred activity alternative.

The preferred activity entails the formalisation of an existing municipal stormwater channel through erven 326, 318 and 139, Herolds Bay: (a) a subsoil drain will be installed on Erf 326 to collect stormwater runoff from higher lying erven (b) a 2m high gabion basket wall will be constructed just outside the southern boundary of erf 326, and (c) a stepped gabion basket channel will be constructed along Erf 318 and a small portion of Erf 139 to prevent further erosion.

Provide a description of any other activity alternatives investigated.

Provide a motivation for the preferred activity alternative.

According to EAS infrastructure, the drainage system at these erven has both operational and hydraulic deficiencies. The potential of flooding due to blocked and damaged infrastructure was evident in these areas.

Provide a detailed motivation if no activity alternatives exist.

Considering the extend of erosion along these erven and the risks it poses to neighbouring properties, it is evident that stormwater runoff should be addressed within this area.

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

Preferred Activity Alternative

Positive

- The activity will improve the control and management of stormwater runoff.
- Neighbouring properties will no longer be at risk i.e. boundary walls.
- Improvement of all the triggers for the terrestrial biodiversity sensitivity that was given in the screening tool report.

Negative

- Temporary noise & safety impacts during construction.
- Loss of indigenous vegetation.
- Potential impact on plant SCC if mitigation measures are not implemented (an ECO must be appointed to ensure that the Applicant is compliant with the EMPr).

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.

Erf 326

- A **subsoil drain** will be installed on erf 326 to collect runoff from higher lying erven (erven 125 and 327) (Figure 20 – Green Arrows).
- A 2m high **gabion basket wall** will be constructed just outside the southern boundary of erf 326 to prevent further erosion (Figure 20 – Purple Box).
- The subsoil drain will run underneath the gabion structures where it will be tied in at **a reconstructed and enlarged catchpit** structure (Figure 20).
- The **crossing pipe** which extends underneath Voëlklip street will be upgraded to a 750mm diameter pipe.

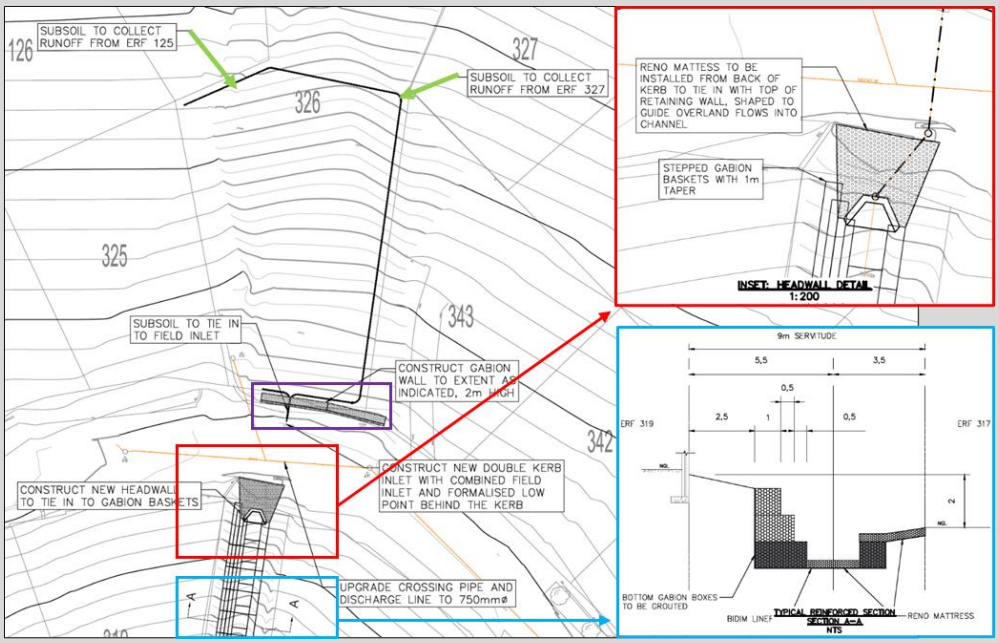


Figure 20: Erosion protection layout for Erven 326 & 318 – subsoil drains, gabion basket and reno mattress (source: EAS Infrastructure Engineers).

Erf 318 and a portion of Erf 139

It is proposed to construct a **stepped gabion basket channel** and associated infrastructures (reno mattresses, retaining walls) on erf 318 and a small portion of erf 139 to control erosion and stormwater runoff (Figure 21). The western section of this gabion channel will be further extended to the west to provide additional support to the boundary wall of erf 319 . The outlet of the gabion basket channel will be on erf 139, approximately 2m beyond an existing sewer line. As per the aquatic specialist recommendation, a **stilling basin** will be constructed at this outlet to further reduce stormwater energy and minimise erosion of the slope (Figure 21).

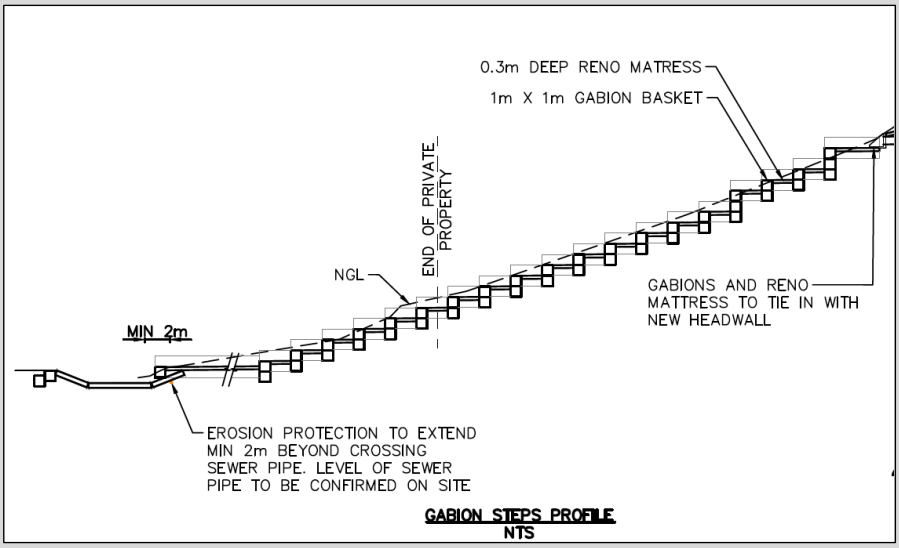


Figure 21: Section of stepped gabion structure erven 318 and 139.

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

Provide a motivation for the preferred design or layout alternative.

- The preferred design provides an engineering solution to the current stormwater issues without impacting on CBA habitat or the watercourse further downstream.
- The design will have no indirect impacts beyond the boundaries of the development footprint.
- The preferred design is in accordance with the following guidelines:
    - The Neighbourhood Planning and Design Guide (2021)
    - Standard and Guidelines for Roads and Stormwater (2022)
    - Road Drainage Manual (2013)
- The design is based on a detailed topographical survey by UDS Civils.
- The design is a result of detailed modelling to determine a solution to best manage any flood risk.
- A design surface of the proposed gabions was modelled within C3D with proposed levels to provide a detailed overview of the impact downstream as well as determine its effectiveness:

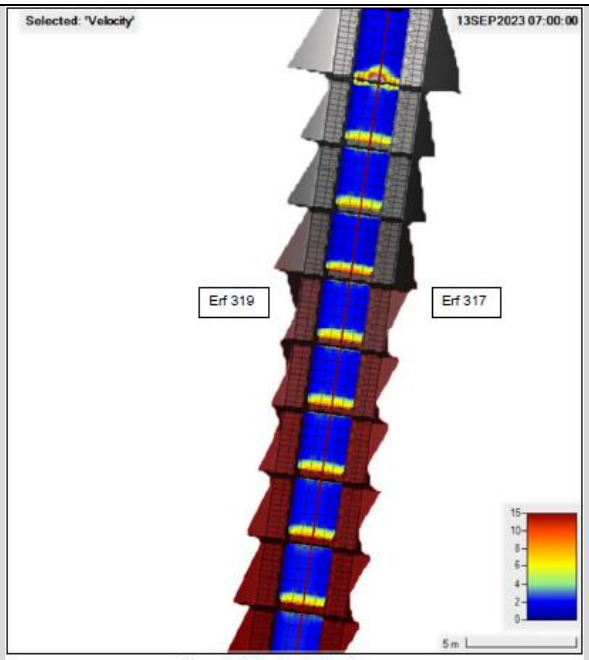


Figure 6.4:Simulated Velocity

According to the model, high velocities are expected due to the drop structures to account for the level changes – the gabion and Armor flex combination will alleviate future erosion and possible undermining due to the high velocities. The addition of the stilling basin will also reduce the energy of stormwater runoff.

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

EAS Infrastructure Engineers has followed a methodology which aims to comply with prescribed objectives, whilst adhering the industry norm in terms of design criteria.

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

Preferred Design Alternative

Positive

- The design will improve the control and management of stormwater runoff.
- Neighbouring properties will no longer be at risk i.e. boundary walls. The western section of this gabion channel will be further extended to the west to provide additional support to the boundary wall of erf 319.
- According to the specialist, this design will lead to an improvement of all the triggers for the terrestrial biodiversity sensitivity that was given in the screening tool report.

Negative

- Temporary noise & safety impacts during construction.
- Loss of indigenous vegetation. Disturbed areas will be rehabilitated with indigenous vegetation.
- Potential impact on plant SCC if mitigation measures are not implemented (an ECO must be appointed to ensure that the Applicant is compliant with the EMPr).

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

Provide a description of the preferred technology alternative:

Not applicable (the proposed project does not need technology in its operational phase).

Provide a description of any other technology alternatives investigated.

Provide a motivation for the preferred technology alternative.

Provide a detailed motivation if no alternatives exist.
List the positive and negative impacts that the technology alternatives will have on the environment.

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

Provide a description of the preferred operational alternative.
Gabions should be inspected for differential settlement after a large storm as well as annually to detect damages or abnormalities (building, broken components, corrosion of mesh baskets, vegetation growth or vandalism). It should furthermore be maintained and/or repaired on site.
Provide a description of any other operational alternatives investigated.
Provide a motivation for the preferred operational alternative.
The preferred operational alternative will prevent the degradation of the gabion structures. The structural integrity of the wall will also be maintained.
Provide a detailed motivation if no alternatives exist.
List the positive and negative impacts that the operational alternatives will have on the environment.
<u>Preferred operational alternative.</u> Positive – Gabion structures are typically very robust and have a long lifespan (20-30 years). The preferred operational alternative will ensure that the gabion baskets are working effectively. Negative – If not inspected or maintained adequately, over time, the wire baskets may be subject to heavy wear and tear due high velocity stormwater runoff which will cause the gabion baskets to break. Pieces of the gabion baskets (rocks / wires) may end up in the watercourse further to the south. Differential settlement may also impact on the effectiveness of the gabion channel.

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

Provide an explanation as to why the 'No-Go' Option is not preferred.
The adjacent properties will continue to be at risk and because the erosion takes place on Municipal land, should the Municipality not act the private owners may deem it fit to take legal action against the municipality in the event of damages to their property.

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

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

The preferred activity entails the formalisation of an existing municipal stormwater channel through erven 326, 318 and 139, Herolds Bay: (a) a subsoil drain will be installed on Erf 326 to collect stormwater runoff from higher lying erven (b) a 2m high gabion basket wall will be constructed just outside the southern boundary of erf 326, and (c) a stepped gabion basket channel will be constructed along Erf 318 and a small portion of Erf 139 to prevent further erosion.

2. "No-Go" areas

Explain what "no-go" area(s) have been identified during identification of the alternatives and provide the co-ordinates of the "no-go" area(s).
The development footprint and working area will be demarcated. All areas outside the demarcation are considered as "No-Go" areas during the construction phase.

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.
Criteria for Assessment These criteria are drawn from the EIA Regulations, published by the Department of Environmental Affairs and Tourism (April 1998) in terms of the Environmental Conservation Act No. 73 of 1989. These criteria include: • **Nature of the impact** This is the appraisal of the type of effect the construction, operation and maintenance of a development would have on the affected environment. This description should include what is to be affected and how. • **Extent of the impact** Describe whether the impact will be local extending only as far as the development site area; or limited to the site and its immediate surroundings; or will have an impact on the region or will have an impact on a national scale or across international borders. • **Duration of the impact** The specialist / EAP should indicate whether the lifespan of the impact would be short term (0-5 years), medium term (5-15 years), long term (16-30 years) or permanent. • **Intensity** The specialist / EAP should establish whether the impact is destructive or benign and should be qualified as low, medium or high. The study must attempt to quantify the magnitude of the impacts and outline the rationale used. • **Probability of occurrence** The specialist / EAP should describe the probability of the impact occurring and should be described as improbable (low likelihood), probable (distinct possibility), highly probable (most likely) or definite (impact will occur regardless of any prevention measures). The impacts should also be assessed in terms of the following aspects: • **Legal requirements** The specialist / EAP should identify and list the relevant South African legislation and permit requirements pertaining to the development proposals. He / she should provide reference to the procedures required to obtain permits and describe whether the development proposals contravene the applicable legislation. • **Status of the impact** The specialist / EAP should determine whether the impacts are negative, positive or neutral ("cost – benefit" analysis). The impacts are to be assessed in terms of their effect on the project and the

environment. For example, an impact that is positive for the proposed development may be negative for the environment. It is important that this distinction is made in the analysis.

- **Accumulative impact**

Consideration must be given to the extent of any accumulative impact that may occur due to the proposed development. Such impacts must be evaluated with an assessment of similar developments already in the environment. Such impacts will be either positive or negative, and will be graded as being of negligible, low, medium or high impact.

- **Degree of confidence in predictions**

The specialist / EAP should state what degree of confidence (low, medium or high) is there in the predictions based on the available information and level of knowledge and expertise.

Based on a synthesis of the information contained in the above-described procedure, you are required to assess the potential impacts in terms of the following significance criteria:

No significance: the impacts do not influence the proposed development and/or environment in any way.

Low significance: the impacts will have a minor influence on the proposed development and/or environment. These impacts require some attention to modification of the project design where possible, or alternative mitigation.

Moderate significance: the impacts will have a moderate influence on the proposed development and/or environment. The impact can be ameliorated by a modification in the project design or implementation of effective mitigation measures.

High significance: the impacts will have a major influence on the proposed development and/or environment and will result in the "no-go" option on the development or portions of the development regardless of any mitigation measures that could be implemented. This level of significance must be well motivated.

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:	Alternative 1 (Preferred Alternative)
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	***A loss of the small stand of Erica glandulosa fourcadei due to the construction of the 2m high gabion wall north of the existing road between erven 326 and 318.***
Nature of impact:	Negative
Extent and duration of impact:	<u>Without Mitigation</u> Extend: Very Limited Duration: Permanent <u>With Mitigation</u> Extend: Very Limited Duration: Brief
Consequence of impact or risk:	• Loss of a SCC sub-population. • Reduction in the extent of occurrence of SCC. • A general loss of suitable habitat for SCC.

	• A loss of generic variation within remaining SCC stands. • A shift towards a negative change in the conservation status of the SCC and other indigenous species affected by the development.
Probability of occurrence:	Certain
Degree to which the impact may cause irreplaceable loss of resources:	
Degree to which the impact can be reversed:	
Indirect impacts:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Moderate
Degree to which the impact can be avoided:	
Degree to which the impact can be managed:	
Degree to which the impact can be mitigated:	
Proposed mitigation:	1. Conduct a search and rescue of the *Erica glandulosa fourcadei* population north of the existing road only where they will be impacted by the proposed development. a. A permit needs to be applied for from CapeNature in order to conduct the Erica search and rescue operation. b. Ensure that the plants are watered about an hour before rescuing them. c. Find an area outside of the project area of influence, in an open canopy area somewhere on the erven, and dig holes large enough to support the Ericas. The soil piles must either be on driveways or elsewhere in an already disturbed area. d. When rescuing Ericas, it is imperative that the soil be removed with the roots. For this reason, an excavator must carefully dig up Ericas where they fall within the proposed gabion wall or pipeline footprint. e. The rescued Ericas in the excavator, with soil & roots relatively undisturbed, must then be transplanted into the hole/s dug for them. If there are any spaces left in the holes, spades can be used to fill the gaps with the soil.

	f. The rescued Ericas must be watered daily during the construction phase unless it is raining. 2. Demarcate the transplanted Ericas, and any that have remained in their original place (i.e., the plants that will not be affected by the construction). These are no-go areas during the construction phase. 3. No cut vegetation slash may be dumped into any watercourses nearby. All waste material must be disposed of responsibly. 4. Mixing of materials such as concrete may only occur within the permanent disturbance footprint of this project.
Residual impacts:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	If transplanted at locality 1: Negligibly. If transplanted at locality 2: Minor. 
OPERATIONAL PHASE	

Potential impact and risk:	***The loss of SCC (Erica glandulosa fourcadei) due to ongoing site maintenance (or lack of maintenance) practices.***
Nature of impact:	Negative
Extent and duration of impact:	Without Mitigation Extend: Very Limited Duration: Permanent With Mitigation Extend: Very Limited Duration: Brief
Consequence of impact or risk:	1. A general loss of habitat for plants, pollinators, and other important taxa. 2. Altered soil characteristics which causes unnecessary harm to forest vegetation dynamics. 3. Pollution of the environment. 4. Loss of habitat to invasive plants species and increasingly species poor senescent road verge fynbos.
Probability of occurrence:	Without Mitigation Almost Certain With Mitigation Unlikely
Degree to which the impact may cause irreplaceable loss of resources:	
Degree to which the impact can be reversed:	
Indirect impacts:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Without Mitigation: Minor
Degree to which the impact can be avoided:	
Degree to which the impact can be managed:	
Degree to which the impact can be mitigated:	
Proposed mitigation:	1. Alien species must be kept under control, especially along the road verges. 2. No gardens may be planted in the areas where the Ericas are located. 3. Fertilisers and pesticides must be avoided on the road verge, and when used it must be done with caution and may not become route practise.

	4. Kikuyu grass may not be planted following the construction of the stormwater infrastructure, rather buffalo grass could be considered.
Residual impacts:	
Cumulative impact post mitigation:	No cumulative impacts are anticipated if the stormwater infrastructure project is to go ahead, and if the infrastructure is properly maintained after the construction phase. However, if the infrastructure is not maintained, the impacts on the SCC and habitats could potentially be cumulative, so that it becomes further reaching and more severe as time continues.
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	With Mitigation: Negligible
~~DECOMMISSIONING AND CLOSURE PHASE~~	
~~Potential impact and risk:~~	
~~Nature of impact:~~	
~~Extent and duration of impact:~~	
~~Consequence of impact or risk:~~	
~~Probability of occurrence:~~	
~~Degree to which the impact may cause irreplaceable loss of resources:~~	
~~Degree to which the impact can be reversed:~~	
~~Indirect impacts:~~	
~~Cumulative impact prior to mitigation:~~	
~~Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)~~	
~~Degree to which the impact can be avoided:~~	
~~Degree to which the impact can be managed:~~	
~~Degree to which the impact can be mitigated:~~	
~~Proposed mitigation:~~	
~~Residual impacts:~~	
~~Cumulative impact post mitigation:~~	
~~Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)~~	

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.

Aquatic

Findings

- No aquatic biodiversity will be impacted as a result of the construction of the gabion channel (including subsoil drains and gabion wall).
- The proposal is aligned with the management objectives of SWSAs and will result in improved protection of the natural, watercourse further down the slope.
- With respect to the WCBSP, while the construction footprint falls within an aquatic ESA2, it does not fall within the watercourse for which this ESA has been assigned.
- Construction of the gabion channel will reduce the current impact on water-related services by allowing for the continued delivery of surface runoff without further degradation to CBA habitat further down the slope.

Impact Management Measures and Recommendations identified by the Aquatic Specialist

- A construction schedule must be developed and clearly defined to avoid multiple sites being exposed and unattended to at any moment in time. The completion date for each phase of the construction must be indicated and all clearing, excavation, and stabilisation operations must be completed before moving onto the next phase.
- Dry working conditions must be established in the channel. Stormwater originating from the outlet on Voëlklip street must be temporarily diverted around the construction site and safely discharged into the channel below.
- A temporary straw-bale check dam must be placed across the channel, immediately downstream of the construction area as a back-up to trap high levels of sediment in the event of a high rainfall event. The check dam and any accumulated sediment must be removed by hand as soon as construction is complete.
- No construction materials or topsoil must be stockpiled within the eroded channel. Stockpiles of construction materials must be placed outside of the channel (on as flat an area as possible) and protected (e.g. through use of sandbags and/or tarpaulins) to prevent materials being washed into the channel.
- Construction of a stilling basin at the outlet of the gabion channel should be considered so as further reduce stormwater energy and minimise erosion of the slope and watercourse downstream of the channel.

Botanical & Biodiversity

Findings

- No protected tree species were observed on site.
- One (1) plant SCC was observed in the open canopy vegetation immediately north of Voelklip Road, Erica glandulosa fourcadei (VU).
- Erf 326 has a high botanical sensitivity.
- The rest of the closed canopy thicket vegetation has a Low plant species sensitivity, no SCC was recorded there, and no SCC is likely to occur within the proposed development site.
- The vegetation on erven 326 and 318 is not representative of Garden Route Granite Fynbos.
- The vegetation may be classified as Groot Brak Dune Strandveld, however large parts of the erven are dominated by garden escapees and the rest of the more natural vegetation is relatively species poor at present.
- The terrestrial biodiversity sensitivity of the proposed development footprint on erven 326 and 318 is Low due to the level of degradation that has already occurred from erosion here.

- The proposed development footprint of the gabion channel is also within a very small section of Erf 139 where the CBA and CR endangered habitat is currently being degraded. The proposed development footprint within this section also has a low terrestrial biodiversity.

<u>Impact Management Measures and Recommendations identified by the Botanist.</u>

- Conduct a search and rescue of the Erica glandulosa fourcadei population north of the existing road only where they will be impacted by the proposed development.
    - A permit may need to be applied for from CapeNature in order to conduct the Erica search and rescue operation.
    - Ensure that the plants are watered about an hour before rescuing them.
    - Find an area outside of the project area of influence, in an open canopy area somewhere on the erven, and dig holes large enough to support the Ericas using an excavator. Soil dug out of these holes must be kept in a pile next to the holes. The soil piles must either be on driveways or elsewhere in an already disturbed area. The potential replanting spots on the site include around Erf 326 are illustrated in Figure below.

    - When rescuing the Ericas, it is imperative that the soil be removed with the roots. For this reason, an excavator must carefully dig up Ericas where they fall within the proposed gabion wall or pipeline footprint.
    - The rescued Ericas in the excavator, with soil & roots relatively undisturbed, must then be transplanted into the hole/s dug for them. If there are any spaces left in the holes, spades can be used to fill the gaps with the soil.
    - The rescued Ericas must be watered daily during the construction phase unless it is raining.

- Fence off the transplanted Ericas, and any that have remained in their original place (i.e., the plants that will not be affected by the construction). These are no-go areas for the project.
- Vegetation clearing must be limited to the construction footprint.
- No cut vegetation slash may be dumped into any watercourses nearby. All waste material must be disposed of responsibly.
- Mixing of materials such as concrete may only occur within the permanent disturbance footprint of this project.
- Alien species must be kept under control, especially along the road verges.
- No gardens may be planted in the areas where the Ericas are located. In order to make this clear, a plaque with the name of the species could be made. The Ericas could also be indicated by packing stones around the areas where they are present.
- Fertilisers and pesticides must be avoided on the road verge, and when used it must be done with caution and may not become routine practice.
- Kikuyu grass (Cenchrus clandestinus) may not be planted following the construction of the stormwater infrastructure, rather buffalo grass (Stenotaphrum secundatum) or Eragrostis capensis could be considered.

Fauna

Findings

- The Knysna Warbler is unlikely to occur within the study area.
- Sensitive Species 8 is highly unlikely to occur within the proposed development footprint as they prefer dense thicket vegetation (not observed within the development footprint).
- A. Montanus is not known from the area, and the habitat is also not suitable for this species.
- The fauna sensitivity is **Low** for the development footprint.

Impact Management Measures and Recommendations identified by the Fauna Specialist

- Sections that are bare after construction, should be rehabilitated with indigenous thicket species, allowing the property to continue functioning as a potential habitat within an increasingly fragmented landscape.
- An ECO must walk the site prior to vegetation removal / construction to ensure no animals are present in the area.
- In the very unlikely event, a nest of the Knysna Warbler is found within the development footprint, the nest should be fenced off (10m from the nest), an no disturbance to occur within the exclusion zone.

Heritage

Findings

According to the Heritage Specialist, the proposed stormwater infrastructure on Erven 139, 318 and 326 Herold's Bay, George in terms of the National Environmental Management Act (Act No. 107 of 1998, as amended) & 2014 Environmental Impact Regulations (December 2023)", do not trigger any of the development activities listed in terms of Section 38(1) of the National Heritage Resources Act, 1999 (Act 25 of 1999) ("NHRA"):

Sec. of NHRA	Development Trigger	Yes/ No
38(1)(a)	"Construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length"	No
38(1)(b)	"Construction of a bridge or similar structure exceeding 50m in length"	No
38(1)(c)	"Any development or other activity which will change the character of a site:	
	Exceeding 5,000m² in extent;	No
	Involving three or more existing erven or subdivisions thereof;	No
	Involving three or more erven or divisions thereof, which have been consolidated within the past five years;	No
	Costs of which will exceed a sum set in terms of regulations by SAHRA or a PHRA."	No
38(1)(d)	"The rezoning of a site exceeding 10,000m² in extent"	No
38(1)(e)	"Any other category of development provided for in the regulations by SAHRA or a PHRA."	No

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

All the impact management measures that were identified by all specialists are included in the EMPr except for the one (1) mitigation measure recommended by the botanical/biodiversity specialist (please see below under # 3).

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.

Impact Management Measure recommended by the botanical/biodiversity specialist:

- Vegetation clearing must be limited to the construction footprint.

Due to the steepness of the slope along erven 318 and 139, it is proposed to add a 5m temporary disturbance envelope around the development footprint. This area will be rehabilitated with indigenous vegetation during the rehabilitation phase of this project.

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

The proposed activity is to have an overall positive impact on the surrounding communities by reducing risk to their properties. Some temporary negative impacts are expected during construction but can be adequately managed.

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.

Climate change can lead to increased stormwater runoff with more severe downpours. Risk management in the form of improved stormwater infrastructure must be implemented to help protect the properties against long term erosion/flooding events.

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 the specialists.

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 findings and recommendations by the specialists have been incorporated into the proposal.

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

1. Avoid Impacts

Avoidance mitigation will be implemented.

By focussing on the emergency area.

2. Minimise Impacts

By involving an aquatic specialist to advise on planning and design at an early stage.

Appoint an ECO to oversee construction to further minimise the potential unnecessarily direct or indirect impacts.

Implement dust control during construction to minimise the impacts on neighbouring property owners.

Implement the Environmental Management Plan under ECO supervision.

Implement resource conservation measures as part of the design, construction and operational phase.

3. Rectify

Design for the preferred alternative will result in rectification of a degraded area.

4. Reduce

Impacts associated with potential property damage and municipal infrastructure damage will be reduced with implementation of the preferred alternative compared to the No-Go / Status Quo alternative.

5. Off-set

No off sets are deemed necessary.

SECTION J: GENERAL

1. Environmental Impact Statement

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

- The aquatic, botanical/biodiversity and fauna sensitivity for the proposed development footprint is **LOW**.
- Flagged animal SCC were not overserved within the development footprint and has a very low likelihood of occurring.
- One (1) plant SCC were observed with within the development footprint: *Erica glandulosa fourcadei (VU)*.
- The vegetation on erven 326 and 318 are not representative of Garden Route Granite Fynbos.
- The vegetation may be classified as Groot Brak Dune Strandveld, however large parts of the erven are dominated by garden escapees and the rest of the more natural vegetation is relatively species poor at present.
- No protected tree species were observed on site.
- No aquatic biodiversity will be impacted because of the construction of the gabion channel.
- The proposed activity will not result in any further loss or disturbance to any natural terrestrial habitat.

1.2.	Provide a map that that superimposes the preferred activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. (Attach map to this BAR as Appendix B2)

Please refer to Appendix B2.

1.3.	Provide a summary of the positive and negative impacts and risks that the proposed activity or development and alternatives will have on the environment and community.

Positive

- The activity will improve the control and management of stormwater runoff.
- Neighbouring properties will no longer be at risk i.e. boundary walls.
- Improvement of all the triggers for the terrestrial biodiversity sensitivity that was given in the screening tool report.

Negative

- Temporary noise & safety impacts during construction.
- Loss of indigenous vegetation.
- Potential impact on plant SCC if mitigation measures are not implemented (an ECO must be appointed to ensure that the Applicant is compliant with the EMPr).

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

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

Impact Management Outcomes included in the EMPr.

- Minimise negative impacts of stormwater, sedimentation and erosion.
- Ensure no health risk due to emission of dust to the environment.
- Ensure nuisance from noise and vibration does not occur.
- Manage and minimise the nuisance effect created by construction traffic.
- Minimise waste discharged to the environment.
- Manage stockpile materials so that dust and sediment in run-off are minimised.
- Ensure that fuel and chemical storage is safe, and that any materials that escape do not cause environmental damage.

• Minimise soil lost during construction due to land-clearing. • Ensure that degradation to existing botanical/biodiversity components are minimised and that any rehabilitation is undertaken with conservation orientated approach. • Ensure that impacts to fauna species is minimised and / or avoided. • Ensure equitable, fair and safe interaction on construction sites. • Ensure efficient communication mechanisms in the implementation of environmental performance requirements.	
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.
Refer to section 2.1, 2.3 & 2.4.	
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.
The proposed activity should be authorised as it will protect the properties from imminent risk. The following conditions must be considered: (a) Development may not proceed until such time as all approvals are obtained. (b) An ECO must be appointed prior construction to oversee site preparation and construction. Refer to Section 2.1.	
2.4.	Provide a description of any assumptions, uncertainties and gaps in knowledge that relate to the assessment and mitigation measures proposed.
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.
Standard five(5) year EA validity.	

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.
Not applicable.

4. Waste

Explain what measures have been taken to reduce, reuse or recycle waste.
Waste must be collected and disposed of at a registered waste facility. No waste material may be left on the site.

5. Energy Efficiency

8.1.	Explain what design measures have been taken to ensure that the development proposal will be energy efficient.
The construction of a stepped gabion channel including a stilling basin at the outlet of the gabion channel will reduce stormwater energy and minimise erosion of the slope and watercourse downstream of the channel.	

SECTION K: DECLARATIONS

DECLARATION OF THE APPLICANT

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

I……**JOHANNES FRANCISCUS KOEGELENBERG**……., ID number ……**7906085048081**……in ~~my personal capacity or~~ duly authorised thereto hereby declare/affirm that all the information submitted or to be submitted as part of this application form is true and correct, and that:

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

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

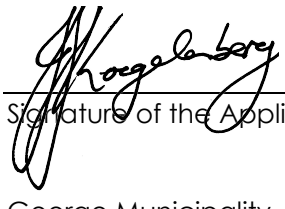
- I appointed the Environmental Assessment Practitioner ("EAP") (if not exempted from this requirement) which:
  - meets all the requirements in terms of Regulation 13 of the NEMA EIA Regulations; or
  - meets all the requirements other than the requirement to be independent in terms of Regulation 13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

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

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

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

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



2024-05-30

Signature of the Applicant: Date:

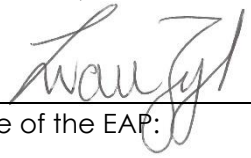
George Municipality

Name of company (if applicable):

DECLARATION OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

I ……**Louise-Mari van Zyl**……, EAP Registration number ……**2019/1444**…….. as the appointed EAP hereby declare/affirm the correctness of the:

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



30/05/2024

Signature of the EAP: Date:

Cape Environmental Assessment Practitioners

Name of company (if applicable):

DECLARATION OF THE CANDIDATE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

I ……**Mariska Byleveld**……, EAP Registration number ……**2023/6593**…….. as the appointed EAP hereby declare/affirm the correctness of the:

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

MByleveld — 30/05/2024

Signature of the EAP: Date:

Cape Environmental Assessment Practitioners

Name of company (if applicable):

DECLARATION OF THE REVIEW EAP

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

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

Signature of the EAP: Date:

Name of company (if applicable):

DECLARATION OF THE SPECIALIST

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

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

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

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

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

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

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

30 May 2024

Signature of the ~~EAP~~ Specialist: Date:

Confluent Environmental

Name of company (if applicable):

DECLARATION OF THE SPECIALIST

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

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

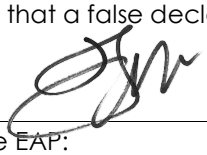
- In terms of the general requirement to be independent:
  - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity;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

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

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

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

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



28/05/2024

Signature of the EAP: Date:

Name of company (if applicable):

DECLARATION OF THE SPECIALIST

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

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

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

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

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

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

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

28/05/2024

Signature of the EAP: Date:

N/A

Name of company (if applicable):

DECLARATION OF THE SPECIALIST

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

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

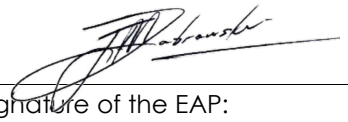
- In terms of the general requirement to be independent:
  - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity;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

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

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

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

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



30 May 2024

Signature of the EAP: Date:

Confluent Environmental

Name of company (if applicable):

DECLARATION OF THE REVIEW SPECIALIST

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

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

Signature of the EAP: Date:

Name of company (if applicable):