GEORGE
TEL: +27 (0) 44 873 4923 **FAX:** +27 (0) 44 874 5953
EMAIL: info@sescc.net **WEBSITE:** www.sescc.net
ADDRESS: Unit 17 Cathedral Square, Cathedral Street, George, 6530
PO BOX: 9087, George, 6530

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

DRAFT
BASIC ASSESSMENT REPORT

FOR THE

THE PROPOSED UPGRADING OF STORMWATER INFRASTRUCTURE IN ROSEMOOR, ON ERVEN 9000, 14079,17362,17328,17327,17362, 4250, 4372, 8621 AND REMAINDERS OF ERVERN 464, 8581,8596,8662, 8602,8596, 8651, GEORGE, WESTERN CAPE.

In terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations, 2014 (as amended 7 April 2017)

PREPARED FOR: *George Municipality*
Civil Engineering Services
PO Box 19
George
6530

DATE: 28 August 2025

SES REF NO: RSMR/SWI/UP/06/24
DEA&DP REF.NO.: 16/3/3/1/D2/47/0013/25

Western Cape Government

Department of Environmental Affairs and Development Planning

BASIC ASSESSMENT REPORT

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

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 UPGRADING OF STORMWATER INFRASTRUCTURE IN ROSEMOOR, ON ERVEN 9000, 14079,17362,17328,17327,17362, 4250, 4372, 8621 AND REMAINDERS OF ERVERN 464, 8581,8596,8662, 8602,8596, 8651, GEORGE, WESTERN CAPE.

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

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

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

3. *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);

	○ Coastal Risk Zones as delineated for the Western Cape by the Department of Environmental Affairs and Development Planning ("DEA&DP"): ○ Ridges; ○ Cultural and historical features/landscapes; ○ 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**	
	Appendix E2:	**Copy of comment from Cape Nature**	
	Appendix E3:	**Final Comment from the DWS**	
	Appendix E4:	**Comment from the DEA: Oceans and Coast**	
	Appendix E5:	**Comment from the DAFF**	
	Appendix E6:	**Comment from WCG: Transport and Public Works**	
	Appendix E7:	**Comment from WCG: DoA**	
	Appendix E8:	**Comment from WCG: DHS**	
	Appendix E9:	**Comment from WCG: DoH**	

	Appendix E10:	**Comment from DEA&DP: Pollution Management**	
	Appendix E11:	**Comment from DEA&DP: Waste Management**	
	Appendix E12:	**Comment from DEA&DP: Biodiversity**	
	Appendix E13:	**Comment from DEA&DP: Air Quality**	
	Appendix E14:	**Comment from DEA&DP: Coastal Management**	
	Appendix E15:	**Comment from the local authority**	
	Appendix E16:	**Confirmation of all services (water, electricity, sewage, solid waste management)**	
	Appendix E17:	**Comment from the District Municipality**	
	Appendix E18:	**Copy of an exemption notice**	
	Appendix E19	**Pre-approval for the reclamation of land**	
	Appendix E20:	**Proof of agreement/TOR of the specialist studies conducted.**	✓ (TOR available in specialist reports)
	Appendix E21:	**Proof of land use rights**	
	Appendix E22:	**Proof of public participation agreement for linear activities**	
Appendix F:	**PPP Proof**		
	I &AP List- Only provided to DEAP (FBAR)		
	All Comments		
	Comments and Response Report		
Appendix G:	**Specialist Report(s)**		✓

	G1 Terrestrial Biodiversity Assessment by J Pote	✓
	G2 Aquatic biodiversity Assessment- Dr. James Dabrowski	✓
Appendix H:	**EMPr**	
Appendix I:	**Screening tool report**	✓
Appendix J:	**The impact and risk assessment for each alternative**	Contained in the BAR
Appendix K:	**Need and desirability for the proposed activity or development in terms of this Department's guideline on Need and Desirability (March 2013)/DEA Integrated Environmental Management Guideline**	
Appendix L	**Engineering Concept and Viability Report**	✓

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 Civil Engineering Service Directorate		
Name of contact person for Applicant/Proponent (if other):	Lindsay Mooiman		
Company/ Trading name/State Department/Organ of State:	George Municipality: Civil Engineering Service Directorate		
Company Registration Number:			
Postal address:	PO Box 19		
	George	Postal code: 6530	
Telephone:	(044) 801 9353	Cell:	
E-mail:	lcmooiman@george.gov.za	Fax: ( )	
Company of EAP:	Sharples Environmental Service cc		
EAP name:	EAP: Michael Bennet Candidate EAP: Onela Mhobo		
Postal address:	PO BOX 9087		
	George	Postal code: 6530	
Telephone:	( )	Cell: 044 873 4923	
E-mail:	michael@sescc.net / onela@sescc.net	Fax: ( )	
Qualifications:	Michael : BSc Environmental & Geographic Sciences and Ocean and Atmospheric Science Onela: Bsc Environmental Science BSc Honours Environmental Management		
EAP registration no:	2021/3163 2022/4522		
Duplicate this section where there is more than one landowner Name of landowner:	George Municipality		
Name of contact person for landowner (if other):	Lindsay Mooiman		
Postal address:	PO BOX 19		
	George	Postal code:6530	
Telephone:	(044) 801 9353	Cell:	
E-mail:	lcmooiman@george.gov.za	Fax: ( )	
Name of Person in control of the land:	George Municipality		
Name of contact person for person in control of the land:	Lindsay Mooiman		
Postal address:	PO BOX 19		
	George	Postal code:6530	
Telephone:	(044) 801 9353	Cell:	
E-mail:	lcmooiman@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
Contact person:	Mr. Godfrey Louw

Postal address:	PO Box 19		
	George	Postal code:6530	
Telephone	(044) 801 801 9433	Cell:	
E-mail:	glouw@george.gov.za	Fax: ( )	

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

1.	Is the proposed development (please tick):	New		**Expansion**	**X**
2.	Is the proposed site(s) a brownfield of greenfield site? Please explain.				
Brownfield. The proposed sites are semi transformed with existing stormwater outlet pipes occurring on all sites					
~~3.~~	~~**For Linear activities or developments**~~				
~~3.1.~~	~~Provide the Farm(s)/Farm Portion(s)/Erf number(s) for all routes:~~				
~~3.2.~~	~~Development footprint of the proposed development for all alternatives.~~				~~m²~~
~~3.3.~~	~~Provide a description of the proposed development (e.g. for roads the length, width and width of the road reserve in the case of pipelines indicate the length and diameter) for all alternatives.~~				
~~3.4.~~	~~Indicate how access to the proposed routes will be obtained for all alternatives.~~				
~~3.5~~	~~SG Digit codes of the Farms/Farm Portions/Erf numbers for all alternatives~~				
~~3.6.~~	~~**Starting point co-ordinates for all alternatives**~~				
	~~Latitude (S)~~	~~º~~	~~'~~	~~"~~	
	~~Longitude (E)~~	~~º~~	~~'~~	~~"~~	
	~~**Middle-point co-ordinates for all alternatives**~~				
	~~Latitude (S)~~	~~º~~	~~'~~	~~"~~	
	~~Longitude (E)~~	~~º~~	~~'~~	~~"~~	
	~~**End point co-ordinates for all alternatives**~~				
	~~Latitude (S)~~	~~º~~	~~'~~	~~"~~	
	~~Longitude (E)~~	~~º~~	~~'~~	~~"~~	
~~**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**				
4.1.	Property size(s) of all proposed site(s):				m²
	RE/464				89272.7 m²
	Erf 9000				7718.9 m²
	RE/ 8581				Unknown
	RE/ 8596				110673.1 m²
	RE/8662				10073.1 m²
	RE/ 8602				2541.89 m²
	ERF 14079				25064.0 m²
	Erf 17362				Unknown
	Erf 17328				395.6 m²
	Erf 17327				377 m²
	Remainder of Erf 8596				110673.1 m²
	Erf 17362				Unknown

	Remainder of Erf 8651	220.8 m^2
	Erf 4250	8570.8 m^2
	Erf 4372	43536.5 m^2
	Erf 8621	15841.0 m^2
4.2.	Developed footprint of the existing facility and associated infrastructure (if applicable):	To be determined
4.3.	Development footprint of the proposed development and associated infrastructure size(s) for all alternatives:	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).	

The George Municipality identified the need to upgrade the stormwater infrastructure and associated streets in the municipality after severe flooding in numerous areas following heavy rainfall. The proposal is to upgrade the existing stormwater infrastructure in the Rosemore suburb in George, Western Cape.

Neil Lyners & Associates (Lyners) was appointed in April 2024 by George Municipality to execute and manage the process and procedures for the upgrading of the Rosemore Storm Water Network in line with the Storm Water Masterplan completed for the area (by Nadeson Consulting Services 2019).

Figure 1: Locality map

Scope of works

Rosemore Storm Water Upgrades Phase 1:

- Miller Street: Upgrade from Ø 450mm to Ø 600mm diameter – Approx 20m
- Parson Street: Upgrade from Ø 450mm to Ø 600mm diameter – Approx 360m
- Niewoudt Street: Upgrade from Ø 450mm to Ø 600mm diameter – Approx 195m
- Niewoudt Outlet: Upgrade from Ø 600mm to Ø 750mm diameter – Approx 170m
- Truter Street: Upgrade from Ø 450mm to Ø 600mm diameter – Approx 125m

Rosemore Storm Water Upgrades Phase 2:

- Attakwas Street: Upgrade from Ø450mm to Ø600mm diameter – Approx 410m
- Aleman and Beer Street: Upgrade from Ø 450mm to Ø600mm diameter – Approx 275m
- Hibiscus Street: Upgrade from Ø450mm to Ø600mm diameter -Approx 70m
- St Mary Street: Upgrade from Ø450mm to Ø600mm diameter – Approx 65m
- Miller Street Upgrade from Ø150mm to Ø450mm diameter -Approx 20m
- Harmony Street Upgrade from Ø350mm to Ø 450mm diameter – Approx 60m

Figure 2:Overview of Proposed Stormwater Infrastructure.

Figure 3:Stormwater Outlet Structures 1-15 and site camp.

These upgrades will all take place within existing road reserves within an urban area and therefore do not trigger any listed activities; however, the stormwater outlet structures will be upgraded outside of the road reserve and in close proximity to watercourses.

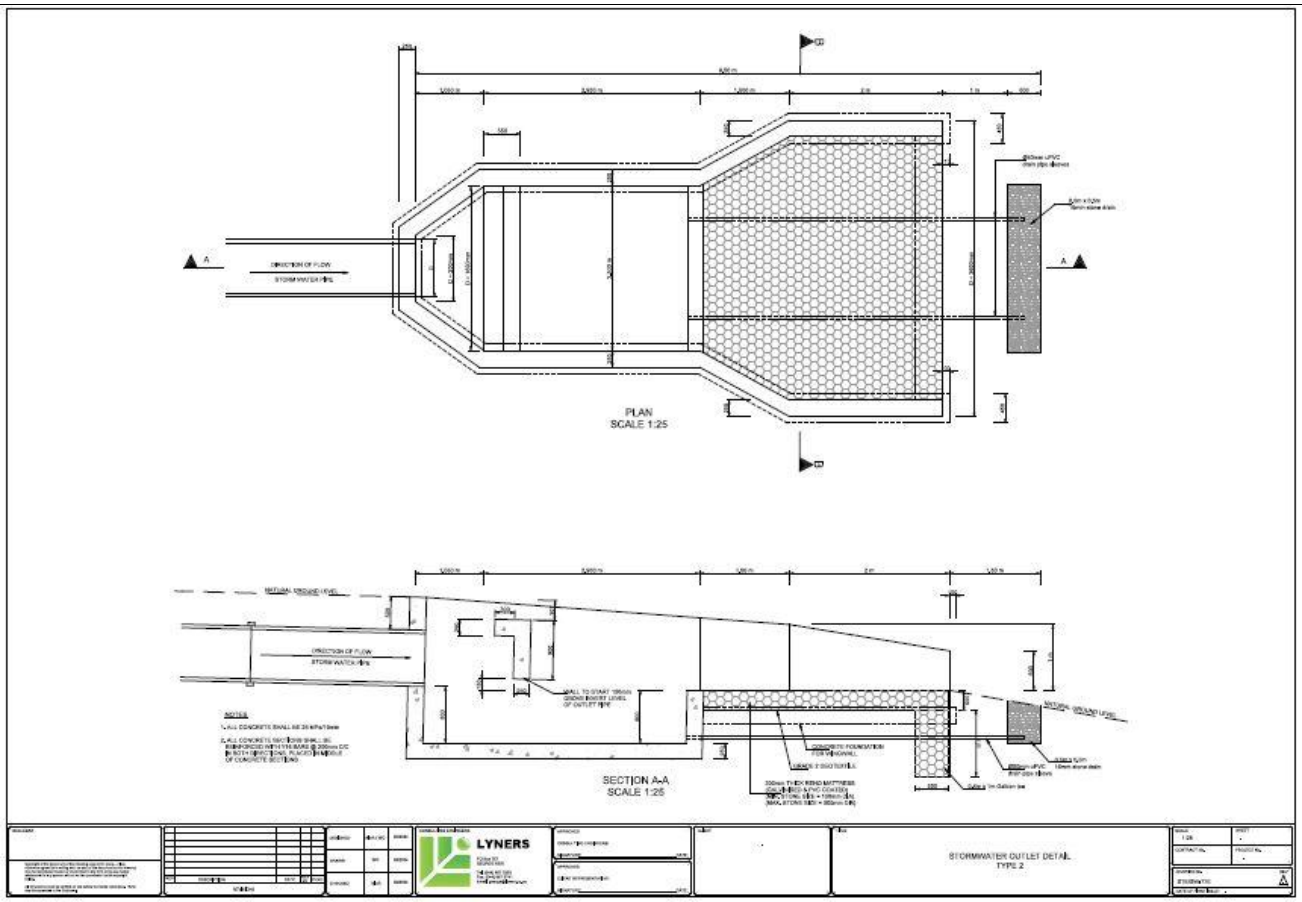

Figure 4:Stormwater Outlet Design Drawing

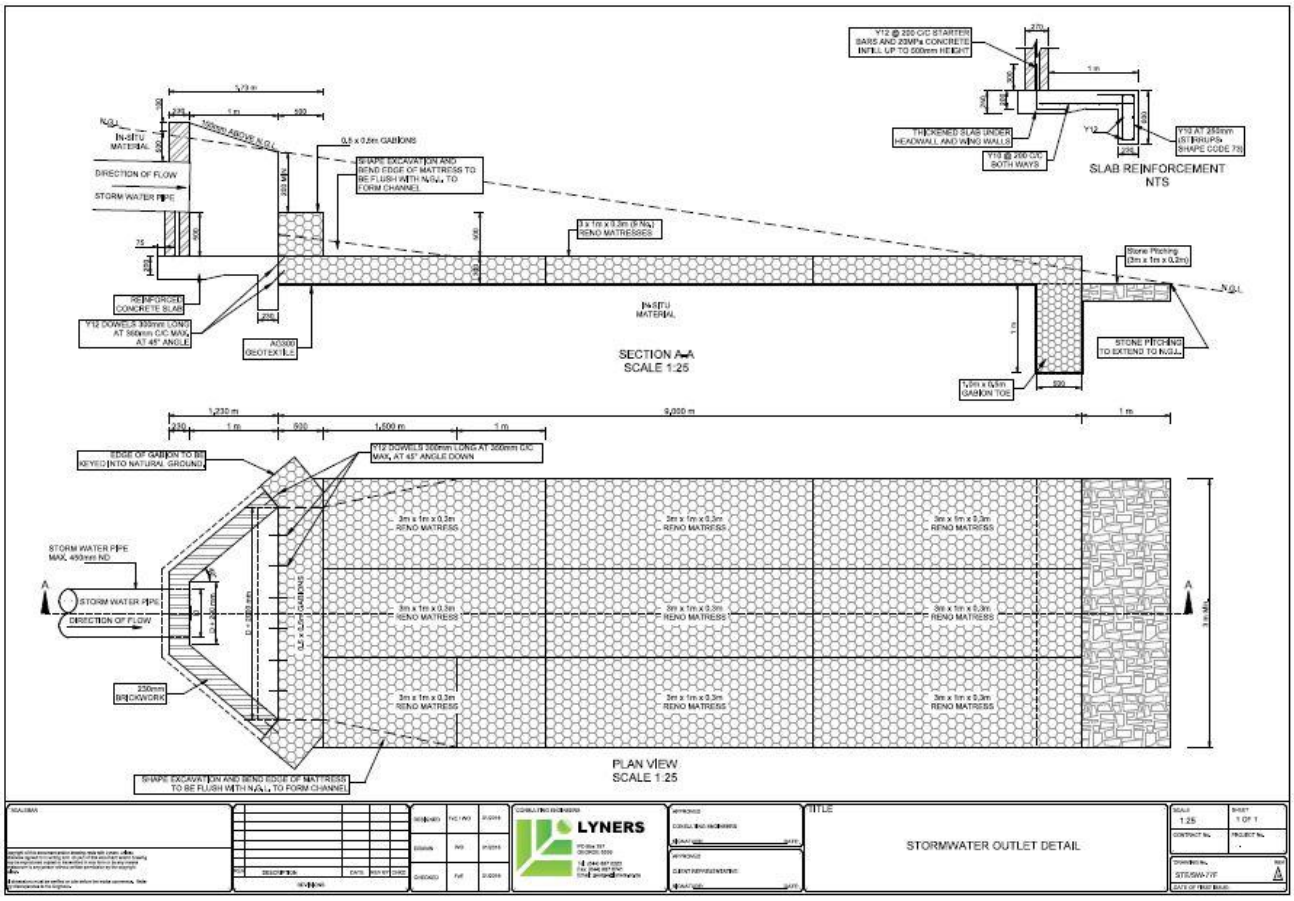

Figure 5: Stormwater outlet design

4.5.	Indicate how access to the proposed site(s) will be obtained for all alternatives.
The sites will be accessed directly from the adjacent road network.	

4.6.	SG Digit code(s) of the proposed site(s) for all alternatives:																					
	RE / 464	C	0	2	7	0	0	0	2	0	0	0	0	0	4	6	4	0	0	0	0	0
	ERF 9000	C	0	2	7	0	0	0	2	0	0	0	0	9	0	0	0	0	0	0	0	0
	RE/ 8581	C	0	2	7	0	0	0	2	0	0	0	0	8	5	8	1	0	0	0	0	0
	RE/ 8596	C	0	2	7	0	0	0	2	0	0	0	0	8	5	9	6	0	0	0	0	0
	RE/ 8662	C	0	2	7	0	0	0	2	0	0	0	0	8	6	6	2	0	0	0	0	0
	RE/ 8602	C	0	2	7	0	0	0	2	0	0	0	0	8	6	0	2	0	0	0	0	0
	ERF 17362	C	0	2	7	0	0	0	2	0	0	0	1	7	3	6	2	0	0	0	0	0
	ERF 17328	C	0	2	7	0	0	0	2	0	0	0	1	7	3	2	8	0	0	0	0	0
	ERF 17327	C	0	2	7	0	0	0	2	0	0	0	1	7	3	2	7	0	0	0	0	0
	RE/ 8651	C	0	2	7	0	0	0	2	0	0	0	0	8	6	5	1	0	0	0	0	0
	ERF 4250	C	0	2	7	0	0	0	2	0	0	0	0	4	2	5	0	0	0	0	0	0
	ERF 4372	C	0	2	7	0	0	0	2	0	0	0	0	4	3	7	2	0	0	0	0	0
	ERF 8621	C	0	2	7	0	0	0	2	0	0	0	0	8	6	2	1	0	0	0	0	0

4.7.	Coordinates of the proposed site(s) for all alternatives:			
Stormwater outlet structure 1	Latitude (S)	33°	58‘	9.66“
	Longitude (E)	22°	28‘	39.06“
Stormwater outlet 2	Latitude (S)	33°	58‘	25.06“
	Longitude (E)	22°	28‘	8.93“
Stormwater outlet 3	Latitude (S)	33°	58‘	28.92“
	Longitude (E)	22°	28‘	6.92“
Stormwater outlet 4	Latitude (S)	33°	58‘	35.40“
	Longitude (E)	22°	28‘	9.49“
Stormwater outlet 5	Latitude (S)	33°	58‘	42.77“
	Longitude (E)	22°	29‘	11.99“
Stormwater outlet 6	Latitude (S)	33°	58‘	44.79“
	Longitude (E)	22°	29‘	11.95“
Stormwater outlet 7	Latitude (S)	33°	58‘	52.96“
	Longitude (E)	22°	28‘	57.47“
Stormwater outlet 8	Latitude (S)	33°	58‘	57.57“
	Longitude (E)	22°	28‘	53,13“
	Latitude (S)	33°	58‘	52.55“

Stormwater outlet 9	Longitude (E)	22°	28‘	45.63“
Stormwater outlet 10	Latitude (S)	33°	58‘	48.43“
	Longitude (E)	22°	28‘	39.82“
Stormwater outlet 11	Latitude (S)	33°	58‘	41.77“
	Longitude (E)	22°	28‘	36.65“
Stormwater outlet 12	Latitude (S)	33°	58‘	26.86“
	Longitude (E)	22°	28‘	30.33“
Stormwater outlet 13	Latitude (S)	33°	58‘	19.57“
	Longitude (E)	22°	28‘	29.36“
Stormwater outlet 14	Latitude (S)	33°	58‘	13.67“
	Longitude (E)	22°	28‘	35.20“
Stormwater outlet 15	Latitude (S)	33°	59‘	1.82”
	Longitude (E)	22°	29’	1.47”

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

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

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

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

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

3. Other legislation

List any other legislation that is applicable to the proposed activity or development.
• Amended Environmental Impact Assessment Regulations, GN No. R. 324 – 327 (7 April 2017) • The Constitution of the Republic of South Africa, 1996 (Act 108 of 1996) • National Environmental Management Laws Amendment Act, 2022, (NEMLAA 2022)

- Western Cape Nature and Environmental Conservation Ordinance 19 of 1974
- Water Use Authorisations: The National Water Act (No. 36 of 1998):
- Conservation of Agricultural Resources Act 43 of 1993

4. Policies

Explain which policies were considered and how the proposed activity or development complies and responds to these policies.
• George Municipality: Policy for the installation of services in road reserves

5. Guidelines

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

Guideline on Need and Desirability (2013/2017)	Guideline considered during the assessment of the Need and Desirability of the proposed development project.
External Guideline: Generic Water Use Authorization Application Process (2007)	Guideline considered during the process of applying for the required water use authorization
Guideline on Environmental Management Plans (2005)	Guideline considered in the compilation of the EMP attached to this Basic Assessment Report
Guideline for the Review of Specialist Input into the EIA Process (2005)	Guideline considered during the process of applying for the required water use authorization
Integrated Environmental Management Information Series 5: Impact Significance (2002)	Guideline considering during the identification and evaluation of potential impacts associated with the proposed development, and the reporting thereof in this Basic Assessment Report
Integrated Environmental Management Information Series 7: Cumulative Effects Assessment (2004)	Guideline considering during the assessment of the cumulative effect of the identified impacts.
George IDP & SDF	Guideline considered

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
The following relevant protocols have been compiled with were used by the specialist to compile their respective specialists' reports: • Terrestrial Biodiversity Assessment Protocol • Aquatic Biodiversity Assessment Protocol

SECTION D: APPLICABLE LISTED ACTIVITIES

List the applicable activities in terms of the NEMA EIA Regulations

Activity No(s):	Provide the relevant **Basic Assessment Activity(ies)** as set out in **Listing Notice 1**	Describe the portion of the proposed development to which the applicable listed activity relates.
19	**The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse;**	All of the stormwater outlet structures are located within watercourses; **therefore, this activity will be triggered.**

	but excluding where such infilling, depositing, dredging, excavation, removal or moving— (a) will occur behind a development setback. (b) is for maintenance purposes undertaken in accordance with a maintenance management plan. (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies. (d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or (e) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies	
27	**The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation**, except where such clearance of indigenous vegetation is required for— (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	The actual footprint of structures is still to be determined it is however likely that the combined footprint of the 15 structures, site camp and storage areas will exceed1ha. **Therefore, this activity will be triggered.**
45	**The expansion and related operation of infrastructure for the bulk transportation of water or storm water where the existing infrastructure—** **(i) has an internal diameter of 0,36 metres or more; or** **(**ii) has a peak throughput of 120 litres per second or more; and (a) where the facility or infrastructure is expanded by more than 1 000 metres in length; or **(b) where the throughput capacity of the facility or infrastructure will be increased by 10% or more;** excluding where such expansion— aa) relates to transportation of water or storm water within a road reserve or railway line reserve; or (bb) will occur within an urban area.	The stormwater upgraded pipes will exceed 0.36m, the throughput capacity will still be determined however it is very likely it will increase the throughput capacity by more than 10%. **Therefore, this activity will be triggered.**
48	**The expansion of -** **(i) infrastructure or structures where the physical footprint is expanded by 100 square metres or more;** (ii) dams or weirs, where the dam or weir, including infrastructure and water surface area, is expanded by 100 square metres or more;	The combined footprints of the structures will exceed 100m2, and the structures are located within 32m from the watercourses, **this activity is therefore triggered by the proposal.**

	where such expansion occurs— **(a) within a watercourse;** **(b) in front of a development setback; or** (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; excluding— (aa) the expansion of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour; (bb) where such expansion activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; (cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies; (dd) where such expansion occurs within an urban area; or (ee) where such expansion occurs within existing roads, road reserves or railway line reserves.	
Activity No(s):	Provide the relevant **Basic Assessment Activity(ies)** as set out in **Listing Notice 3**	Describe the portion of the proposed development to which the applicable listed activity relates.
12	**The clearance of an area of 300 square metres or more of indigenous vegetation** except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a Maintenance management plan. **i. Western Cape** **i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;** **ii. Within critical biodiversity areas identified in bioregional plans;** iii. Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas; iv. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning; or v. On land designated for protection or	Clearance of more than 300 square meters of indigenous vegetation will be required for the proposal. The site is mapped as Garden Route Granite Fynbos which has an Ecological Threat Status of Critically Endangered, the outlet structures also occur in CBAs; **therefore, this activity will be triggered.**

	conservation purposes in an Environmental Management Framework adopted in the prescribed manner, or a Spatial Development Framework adopted by the MEC or Minister.	
23	**The expansion of—** (i) dams or weirs where the dam or weir is expanded by 10 square metres; or **(ii) infrastructure or structures where the physical footprint is expanded by 10 square metres or more**; where such expansion occurs— (a) within a watercourse; (b) in front of a development setback adopted in the prescribed manner; or **(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;** excluding the expansion of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour. **i. Western Cape** **i. Outside urban areas**: (aa) A protected area identified in terms of NEMPAA, excluding conservancies; (bb) National Protected Area Expansion Strategy Focus areas; (cc) World Heritage Sites; (dd) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; (ee) Sites or areas listed in terms of an international convention; **(ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;** (gg) Core areas in biosphere reserves; or (hh) Areas on the estuary side of the development setback line or in an estuarine functional zone where no such setback line has been determined.	The 10 square meter threshold will be exceeded within a watercourse and the stormwater outlet structures occur in CBAs; **this activity is therefore triggered by the proposal**.

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.

Please refer to the concept design options explored in the concept and viability report no. T/ING/010/2020: REVISION NO. 2, dated 05 March 2025. The are three design options / concepts to enable the Municipality to make an informed decision on the most suitable option for the future of the Rosemore Storm Water System.

Scope of works

Rosemore Storm Water Upgrades Phase 1:

- Miller Street: Upgrade from Ø 450mm to Ø 600mm diameter – Approx 20m
- Parson Street: Upgrade from Ø 450mm to Ø 600mm diameter – Approx 360m
- Niewoudt Street: Upgrade from Ø 450mm to Ø 600mm diameter – Approx 195m
- Niewoudt Outlet: Upgrade from Ø 600mm to Ø 750mm diameter – Approx 170m
- Truter Street: Upgrade from Ø 450mm to Ø 600mm diameter – Approx 125m

Rosemore Storm Water Upgrades Phase 2:

- Attakwas Street: Upgrade from Ø450mm to Ø600mm diameter – Approx 410m
- Aleman and Beer Street: Upgrade from Ø 450mm to Ø600mm diameter – Approx 275m
- Hibiscus Street: Upgrade from Ø450mm to Ø600mm diameter -Approx 70m
- St Mary Street: Upgrade from Ø450mm to Ø600mm diameter – Approx 65m
- Miller Street Upgrade from Ø150mm to Ø450mm diameter -Approx 20m
- Harmony Street Upgrade from Ø350mm to Ø 450mm diameter – Approx 60m

Option 1: Replacing the existing Storm Water System in place:

This option entails removal of the existing pipes in the alignment in which they currently reside and replacement with new pipes at slightly deeper invert level when upsizing. This option is likely the best option for most of the pipelines identified above but it does come with some challenges. The presence of existing services in close proximity to the existing sewer pipes could make construction slightly challenging. The existing pipe will need to be found, excavated and removed (whether by hand or by machine), disposed of offsite and the new pipe installed. The presence of junction boxes or other connections underground may not be known, and it could be prudent to have the existing storm water pipelines CCTV inspected prior to construction.

The replacement of the existing pipe does have the benefit of not having an undersized asset still in the ground that will remain unused in the future and thus this is the preferred option where practical.

Option 2: Construction of a new storm water pipe on an alignment that is not the same as the existing pipes.

In some areas the existing pipelines have been encroached upon by structures and removal of the existing pipelines will be difficult to impossible. One such area is the Nieuwoud Outlet shown in the figure below. For this pipeline a possible reroute as shown in blue must be considered depending on ground levels determined in the topographical survey.

Figure 6: Possible rerouting of Nieuwood Outlet Pipe

Another such area is in Woltemade Street shown in Figure 7 below. For this pipeline a possible reroute as shown in blue was considered. Unfortunately, due to ground levels determined by the topographical survey only Langmark Street can drain to the north towards Miller Street and a reroute in Woltemade Street is possible. Furthermore, rerouting of storm water in Beer Street was considered under work currently undertaken by iX Engineers.

Figure 7: Possible rerouting of Woltermade Outlet Pipe.

Option 3: Possible extension to the network not indicated in the initial scope of work

The area of concern around Hibiscus Road and St Mary Street discussed above may necessitate redirecting the storm water infrastructure in alternative routes not indicated by the Storm Water Masterplan.

The figure below shows both Hibiscus Road and St Mary's street seemingly draining into St Mary's Primary School. This is obviously not a tenable situation and depending on the findings of the Topographical Survey additional pipelines to convey the storm water to a suitable downstream location will be required (possibly as shown in red in the figure 8).

Figure 8: Possible additional pipes not included in original scope.

It is very likely that the final detailed design will include a combination of all three of the above concepts in order to fulfil on the objectives provided for the project. This can only be confirmed once the Topographical Survey is completed and further investigations are completed on site. With further investigation some existing storm water midblocks could be rerouted to reduce strain within the existing network and divert the network away from the properties and into the roads. It was deemed possible to reroute the following road storm water network to reduce any strain on the existing network and minimizing the number of upgrades required.

- Langmark Street can be rerouted toward Miller street and tie into its existing network as indicated on Figure 9 below.
- George Moore Street can be rerouted towards O'Connel Street and tie into its existing stormwater network as indicated on Figure 10 below.
- Francis Street can be rerouted towards O'Connel Street and tie into the existing storm water network the two existing networks in question can also be combined into one outlet structure as indicated on Figure 11.
- Nuwe Street can be rerouted towards Kondor Street and tie into the existing storm water network as indicated on Figure 12.

Figure 9: Possible pipes in Langmark Street not included in original scope

Figure 10: Possible additional pipes in George Moore Street not included in original scope

Figure 11: Possible additional pipes in Francis Street not included in original scope.

Figure 12: Possible additional pipes in Nuwe Street not included in original scope

It is important to note that due to the natural ground levels of the surrounding area for each of the reroutes in question, it may necessitate pipes to be constructed deep to be able to tie into the existing stormwater network downstream. All of these reroutes are recommended as it reduces the number of pipes running under existing homes and ensures future maintenance on the network takes place within the road.

2.	Explain how the proposed development is in line with the existing land use rights of the property as you have indicated in the NOI and application form? Include the proof of the existing land use rights granted in Appendix E21.
The sites are currently used as stormwater outlet points for Rosemore's Stormwater infrastructure. The proposal is to upgrade stormwater infrastructure on property owned and managed by the George Municipality.	
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.
No conflicts with existing approvals.	
4.	Explain how the proposed development will be in line with the following?
4.1	The Provincial Spatial Development Framework.
The development is an upgrade of the Rosemore stormwater infrastructure. It is not a new development.	

4.2	The Integrated Development Plan of the local municipality.

The development is the upgrade of Rosemore stormwater infrastructure.

Strategic objective 3: Affordable quality service

It is essential that all citizens in George have access to basic services as provided by local government. Access to basic services by all citizens should be 100%. All service-delivery constraints need to be mitigated. It is also essential that the municipality ensures that strategic measures are in place to manage risk areas for service delivery such as shortage of electricity and water, and that the green industry is stimulated to increase recycling practices and water- and electricity- saving practices are encouraged.

PRIORITY	**DEPARTMENTAL OBJECTIVES/ PREDETERMINIGN OBJECTIVES (PDOS)**
Stormwater	A) To endeavour to improve the road-resealing project to such an extent that potholes are prevented altogether. B) To provide a reliable storm water network
Infrastructure and effective service delivery	A. To ensure infrastructure planning and development keeps pace with growing city needs by aligning all strategic documents and efforts. B. To identify and access grant funding for prioritised capital projects C. To ensure proper asset management by providing sufficient funding and operating capacity for maintenance of existing infrastructure. D. To explore and implement measures to preserve resources and ensure sustainable development. E. To focus on the new wards (DMA) as a priority area for service delivery for the rural areas which are relevant to their unique environment

The proposal is therefore aligned with the integrated development plan of the George local municipality.

4.3.	The Spatial Development Framework of the local municipality.

The development is the upgrade of the Rosemore stormwater infrastructure. The municipality identified the need and desirability of the proposed activities of the specific site to prevent potential future flooding of the Rosemore area.

4.4.	The Environmental Management Framework applicable to the area.

N/A – No EMF adopted for George.

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

To be included in the Final Basic Assessment Report.

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

According to terrestrial biodiversity assessment report drafted by Mr. Jamie Pote (*Pr. Sci. Nat*.)
The Western Cape Biodiversity Spatial Plan (2017) indicates that most of the proposed stormwater structure footprints fall within transformed roads and road reserves, with predominantly the discharge points falling within areas designated CBA 1 & 2 and ESA 2, which are associated with the watercourses and surrounding vegetation that are undeveloped within the urban area.
Because the location of the site is within an urban area and its vegetation cover is significantly altered where little to no natural vegetation remains, and since any vegetation restoration implies that vegetation would be in a secondary context and thus would strictly speaking not be CBA 1 but CBA 2. In principle it would be possible to restore indigenous vegetation, however the likelihood in the short term is not considered to be high, without significant cost. A part of this process would be to formalise and improve stormwater runoff and discharge into the watercourses, so the proposed activity could indirectly improve overall localised ecological functioning. The site does provide some

ecological connectivity and supports ecological processes, be-it in a significantly altered or modified form. In light of the modified nature, the proposed activity is not seen to exceed current baseline disturbance levels.	
7.	Explain how the proposed development is in line with the intention/purpose of the relevant zones as defined in the ICMA.
N/A	
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 report has not changed.	
9.	Explain how the proposed development will optimise vacant land available within an urban area.
N/A, the proposal is to upgrade and maintain municipal infrastructure- existing stormwater infrastructure within the Rosemore area.	
10.	Explain how the proposed development will optimise the use of existing resources and infrastructure.
The sites are not on vacant land. Upgrades are proposed to the existing infrastructure. The proposed development sites have been designed to link in with the existing stormwater infrastructure of Rosemore.	
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).
N/A.	
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.
Not applicable, the municipality has a responsibility to maintain its infrastructure. Motivation in Terms of need and desirability is deemed not necessary.	

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.

N/A

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

To be included in the Final BAR.

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

To be included in the Final BAR.

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

To be included in the Final BAR.

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

To be included in the Final BAR.

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.

To be included 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.		
Dr. James Dabrowski Confluent Environmental Pty (Ltd)			
2.3.	Explain how the presence of watercourse(s) and/or wetlands on the property(ies) has influenced your proposed development.		

The proposal is the upgrade of the Rosemore stormwater infrastructure. The proposed upgrades have prompted the need to obtain the relevant environmental and water authorisations as required by the National Environmental Management Act (NEMA) and National Water Act (NWA).

According to the aquatic assessment complied by Dr. James Dabrowski:

Catchment areas

The stormwater outlets fall within the upper reaches of the Meul River, which falls within quaternary catchment K30C (Figure 13). The main rivers draining this catchment are the Swart and Kaaimans, both of which originate in the Outeniqua Mountains. The Meul is a smaller river system that flows for a relatively short distance before flowing into the sea. The Meul River originates from the industrial centre of George and passes through a combination of formal residential areas and informal settlements (with poor access to water and sanitation services). Sewage spills from blocked manholes and failing pump stations frequently result in sewage spills into both rivers, which has resulted in closure of recreational activities at Ballots Bay (where the Meul River discharges into the sea). Stormwater outlets (labelled RSW1 to RSW5) will be upgraded at five locations in the upper catchment area of the river. The majority of these outlets are located on relatively steep slopes that drain towards nearby watercourses.

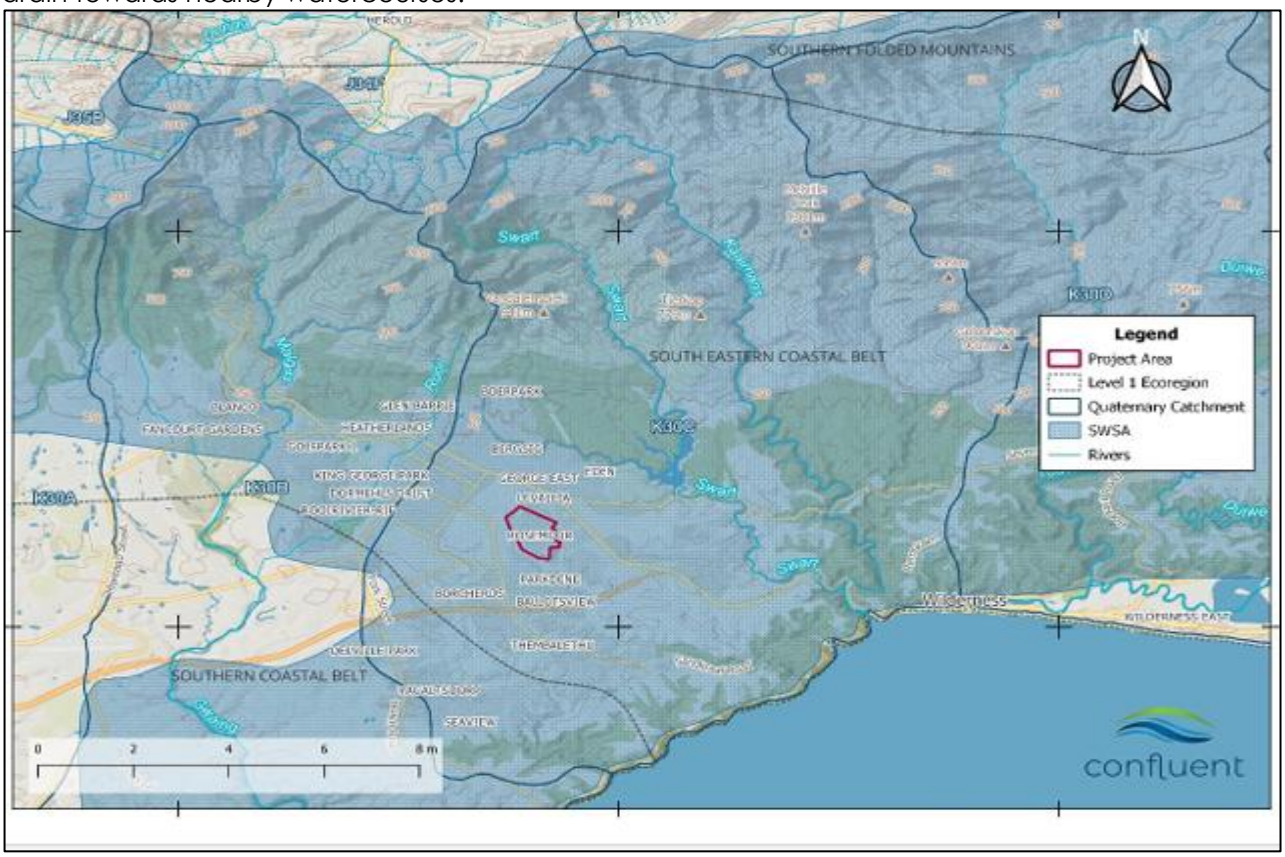

Figure 13: Map indicating the location of the stormwater outlets in quaternary catchment K30C

Strategic water source Area

The project area falls within the Outeniqua Strategic Water Source Area (SWSA), which is considered to be of national importance (Figure 13). SWSAs are defined as areas of land that either:

a) Supply a disproportionate (i.e. relatively large) quantity of mean annual surface water runoff in relation to their size and so are considered nationally important; or
b) Have high groundwater recharge and where the groundwater forms a nationally important resource; or
c) Areas that meet both criteria (a) and (b).

SWSAs are vital for water and food security in South Africa and also provide the water used to sustain the economy. Given this context, management and implementation guidelines have

been developed with the objective of facilitating and supporting well-informed and proactive land management, land-use and development planning in these nationally important and critical areas (Le Maitre, et al., 2018). The primary principle behind this objective is to protect the quantity and quality of the water they produce by maintaining or improving their condition. The proposed development footprint falls within an urban 'working landscape' and in this context the management objectives are:

- To maintain at least the present condition and ecological functioning of these landscapes;
- To restore where necessary; and
- To limit or avoid further adverse impacts on the sustained production of high-quality water.

In this respect, maintenance activities that minimize erosion and maintain and protect infrastructure are aligned to the broader management objectives for areas in urban SWSAs.

Watercourse classification
Watercourses affected by the upgrades include the upper most reaches of the Meul River and an eastern tributary that meets the Meul River below RSW4. The length of the upper Meul River is mapped as an unchannelled valley bottom wetland (Figure 14). These systems are typically located along low gradient, valley bottoms, which favours diffuse flow and hence the lack of a distinct channel. The site visit revealed a prominent, incised channel with steep, vertical banks, ranging between 2 to 3 m high and is therefore not consistent with the diagnostic features of an unchannelled valley bottom wetland. It is possible that the watercourse was originally a very narrow unchannelled valley bottom wetland that has become severely incised (and modified) over time. While a clear, narrow, linear length of drainage can be observed in historical imagery it cannot be confirmed with any certainty whether the drainage was an unchannelled wetland or a channelled non-perennial stream.

Figure 14: Map showing the stormwater outlets in relation to mapped watercourses

Western Cape Biodiversity Spatial Plan (WCBSP)

With the exception of RSW14 fall within or immediately adjacent to terrestrial CBA2 areas (Figure 17). These are considered as degraded areas that are required in order to meet biodiversity targets and have been assigned as CBA status due to the presence of the critically endangered Garden Granite Fynbos vegetation type. Small patches of the wetland along the Meul River have been assigned as aquatic CBA2. Aquatic CBA2 areas are degraded watercourses that are required in order to meet biodiversity targets for species, ecosystems or ecological processes and infrastructure.

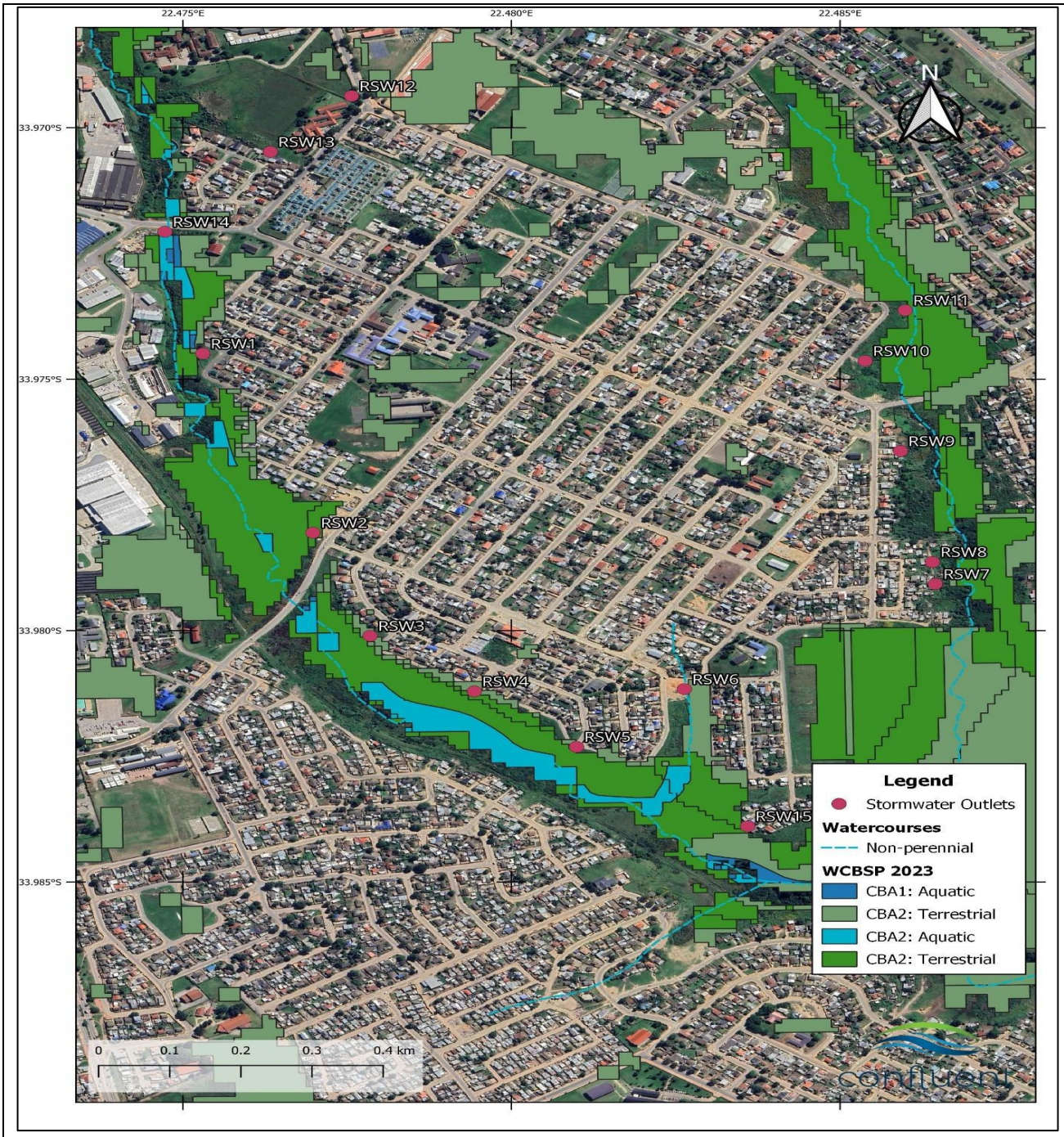

Figure 15: Location of the stormwater outlets in relation to the Western Cape Biodiversity Spatial Plan.

WATERCOURSE ASSESSMENT

Present ecological state (PES)

The present ecological state (PES) refers to an important factor that influences the diversity and abundance of aquatic communities is the condition of the surrounding physico-chemical habitat. Habitat loss, alteration, or degradation generally results in a decline in species diversity.

While the main Meul River and the eastern tributary can be considered as two distinct hydrogeomorphic units, they are very similar in terms of their fundamental hydrological and geomorphological drivers and the impacts that they currently experience. They were therefore assessed collectively as a single wetland seep system. The surrounding urban and industrial areas have significantly impacted the ecological condition of the seep wetland system
Water quality has been severely compromised by input of stormwater originating from urban and industrial areas and by sewage input from leaking infrastructure. Bulk sewer pipelines are

located along the entire length of the channel and are frequently blocked, leading to the discharge of raw sewage into the system. Large amounts of solid waste and litter were observed within the channel and it was evident that large scale dumping of rubble and waste occurs along the length of the wetland and particularly in the eroded stormwater outlets. Based on the impacts observed the PES of the wetland is **D – Largely Modified.**

Ecological importance and sensitivity

The ecological importance of a watercourse is an expression of its importance to the maintenance of ecological diversity and functioning on local and wider scales. Ecological sensitivity refers to the system's ability to resist disturbance and its capability to recover from disturbance once it has occurred (resilience) (Resh et al. 1988; Milner 1994).

Given the current PES, the location of the wetland within an intensive urban area and the relatively low diversity of habitat types, the ecological importance of the wetland is relatively **Low.** The wetland does offer some **Moderate** hydro-functional attributes in terms of supporting streamflow regulation (e.g. discharging sustained base sub-surface flows into the channel) and assimilating pollutants derived from diffuse surface runoff from the surrounding urban catchment. Direct human benefits are **Low.**

Identified Impacts

The direct and indirect impacts associated with the project are grouped into four impact categories. Therefore, the potential impacts assessed, which are direct and indirect in nature, are described below.

Impact 1: Generic Construction Phase Impacts

Construction Phase

During construction there might be pollution of watercourses through leakage of fuels, oils, and other pollutants from vehicles and construction machinery, or from washing of equipment and vehicles. The presence of construction workers on site will require the need for appropriate ablution facilities. Poor management of these facilities could potentially lead to sewage spills or leaks which could contaminate watercourses. Storage of construction materials or the temporary lay-down of equipment within an area that drains in the direction of the watercourse can pollute the water watercourse. Dumping of excavated material into the watercourses and mixing of concrete or cement in or in close proximity to watercourses can pollute the watercourses.

Impact 2: Mobilisation of Sediment Caused by the Excavation of the Bed & Banks for Construction of Stormwater Outlets.

Construction phase

Installation of stormwater infrastructure on slopes will require the excavation of sections of the banks which will expose bare soil to the environment and could lead to high rates of erosion and sedimentation, particularly during heavy rainfall events. This can result in high levels of turbidity as well as infilling of wetland habitat by high sediment loads. Given the current PES of affected wetlands these impacts are not expected to be particularly severe if the appropriate mitigation measures are implemented. There is no impact associated with the No-Go option.

Impact 3: Disturbance of Aquatic and Riparian Habitat caused by the Excavation of the Bed & Banks

Construction phase

Additional impacts associated with the construction phase involve the loss of additional habitat and biota as a result of disturbances (e.g. from construction vehicles and machinery) that occur outside of the areas designated for the installation of stormwater outlets. Given the current PES of the watercourses these impacts are not expected to be particularly severe if the appropriate mitigation measures are implemented. There is no impact associated with the No-Go option.

Impact 4: Modification to Wetland Habitat Caused by Discharge of Stormwater Runoff.

Operational phase

The most serious impacts related to stormwater discharge relates to the input of high volumes

of water at high velocity, which has already caused erosion of wetland seep habitat. Considering that all outlets currently discharge stormwater into the Meul River and associated wetland habitat, the intensity of impact has been assessed relative to the current scenario. In this respects the addition of energy dissipation structures designed to reduce the velocity of the water discharged which will help to prevent erosion problems and represents a positive impact. The No-Go scenario will result in continued erosion of wetland seep habitat and deposition of high quantities of sediment into the river.

Most of the potential impacts assessed are expected to occur during the construction phase. Given the highly modified nature of the affected watercourse and the fact that most upgrades will occur outside of delineated wetland areas, it is unlikely that the proposed upgrades will result in any deterioration in the PES or EIS during the construction phase and impacts can be mitigated to a low level of risk. From an operational perspective, impacts are considered to be positive. As highlighted above, all stormwater outlets are existing and are currently discharging stormwater into the Meul River and associated wetland habitat. Lack of erosion protection is causing erosion of the banks and wetland habitat at numerous of these outlets. Upgrading the outlets by including energy dissipation and erosion protection will result in an improvement over the current scenario.

Water Use Authorisation.
Risks of activities associated with the phases of stormwater upgrade to the seep wetlands were determined according to the risk assessment matrix developed as part of GN 4167 of 2023 (Section 21 (c) and (i) water use Risk Assessment Protocol). Given that all proposed activities fall within a Low Risk class the stormwater upgrades would require a General Authorisation as opposed to a comprehensive WUL.

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.		
Jamie Pote (*Pr. Sci. Nat.)*			
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 National Web-based Environmental Screening Tool was applied to determine the Relative Terrestrial Biodiversity Theme Sensitivity.

According to the Terrestrial Biodiversity Assessment Report compiled by Mr. Jamie Pote *(Pr. Sci. Nat)*: The National Vegetation Type (NBA, 2018) indicated for the site and surrounding area are Garden Route Granite Fynbos (Figure 16), having a Critically Endangered status, as per National Biodiversity Red Listed Ecosystems Assessment (NBA/RLE, 2022).

The Garden Route BSP (GRBSP, 2007) identified the vegetation as being Grassy Fynbos (associated with the slopes) and Rivers & Floodplain (associated with the watercourses). The Garden Route BSP further indicates that portions of the site partially intersect with designated Critical Biodiversity Area along the watercourses and possibly representing historically intact or remnant vegetation. The Garden Route BSP is largely integrated with and/or superseded by the Western Cape BSP and National Vegetation Map, which is also updated to represent changing land use, but indicates that the later plans are broadly aligned with the earlier GRBSP.

The Western Cape Biodiversity Spatial Plan (2017) indicates that most of the proposed stormwater structure footprints fall within transformed roads and road reserves, with predominantly the discharge points falling within areas designated CBA 1 & 2 and ESA 2 (Figure 17), which are associated with the watercourses and surrounding vegetation that are undeveloped within the urban area.
Because the location of the site is within an urban area and its vegetation cover is significantly altered where little to no natural vegetation remains, and since any vegetation restoration implies that vegetation would be in a secondary context and thus would strictly speaking not be CBA 1 but CBA 2.

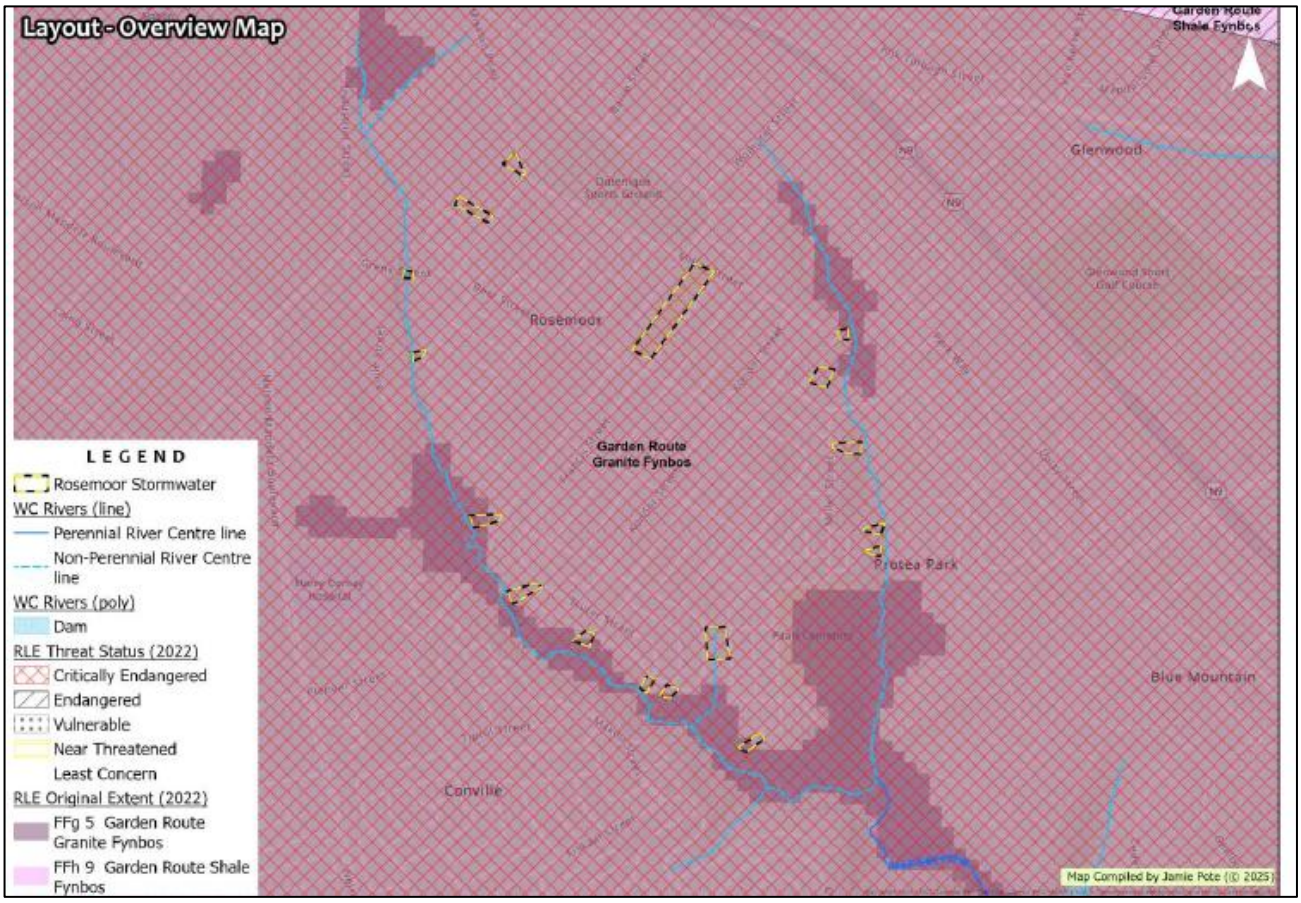

Figure 16: National Biodiversity Assessment Vegetation Type and Conservation status (NBA, 2018). Darker shaded areas indicative of remnant vegetation.

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 Terrestrial biodiversity assessment report compiled by Mr. Jamie Pote *(Pr. Sci. Nat)*:

The Western Cape Biodiversity Spatial Plan (2017) indicates that most of the proposed stormwater structure footprints fall within transformed roads and road reserves, with predominantly the discharge points falling within areas designated CBA 1 & 2 and ESA 2, which are associated with the watercourses and surrounding vegetation that are undeveloped within the urban area.
Because the location of the site is within an urban area and its vegetation cover is significantly altered where little to no natural vegetation remains, and since any vegetation restoration implies that vegetation would be in a secondary context and thus would strictly speaking not be CBA 1 but CBA 2. In principle it would be possible to restore indigenous vegetation, however the likelihood in the short term is not considered to be high, without significant cost. A part of this process would be to formalise and improve stormwater runoff and discharge into the watercourses, so the proposed activity could indirectly improve overall localised ecological functioning. The site does provide some ecological connectivity and supports ecological processes, be-it in a significantly altered or modified form. In light of the modified nature, the proposed activity is not seen to exceed current baseline disturbance levels.

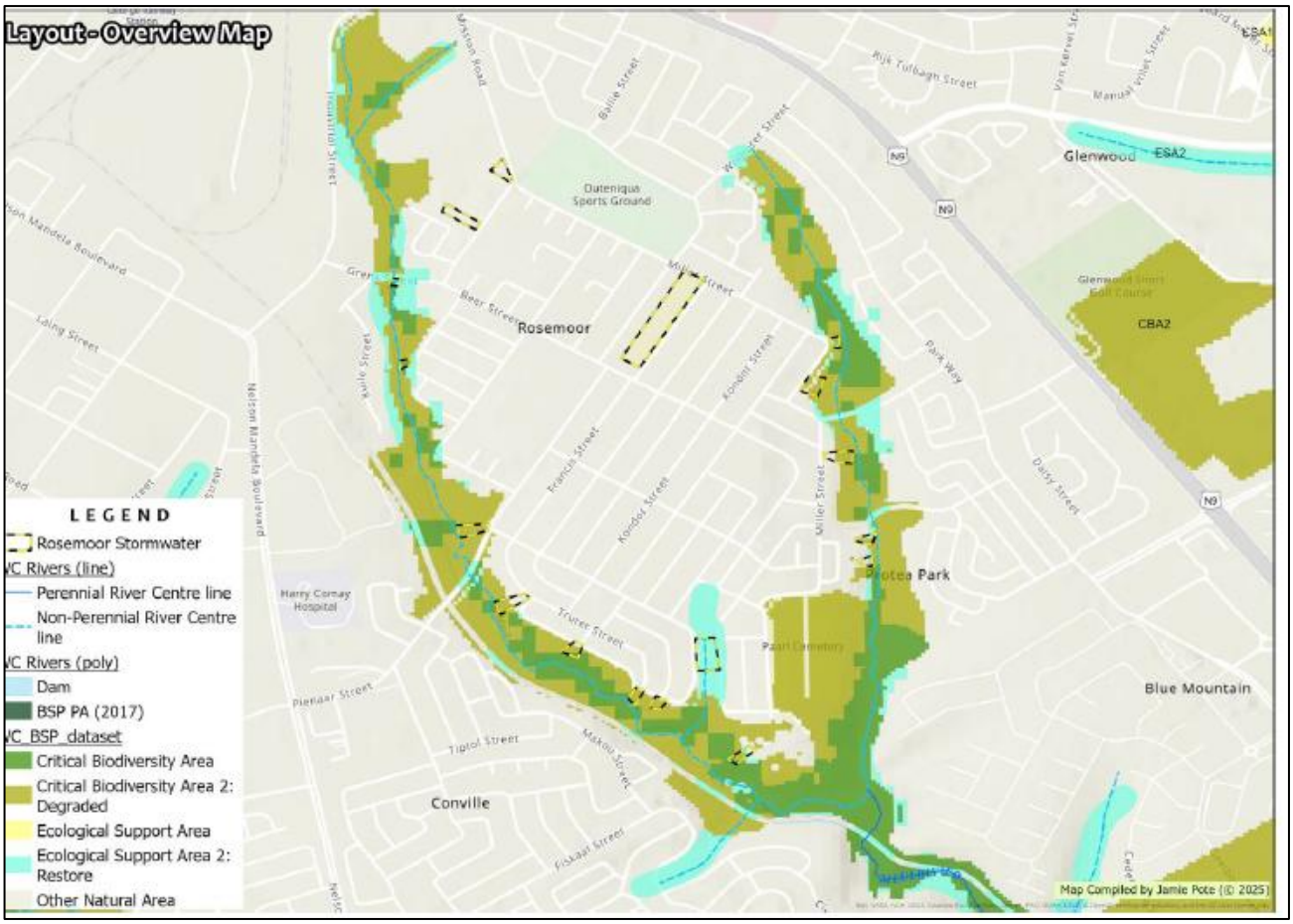

Figure 17: Western Cape Biodiversity Plan (WCBSP, 2017)- The site does overlap with some designated CBA1, CBA 2 and ESA 2 areas.

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.

According to the terrestrial assessment report compiled by Mr Jamie Pote:

A CBA 1 designation implies natural vegetation is present, whereas CBA 2 implies restoration is required. Considering the significant lack of indigenous species and high levels of disturbance and/or alien invasion, the correct CBA/ESA designations would need of be ESA 2 and possibly CBA 2. It is questionable if the broader vegetated areas along the watercourses would ever achieve a state that would support conservation (i.e. CBA), without significant changes to municipal management and well as resident behaviour, well outside the scope of this assessment; however, they do serve a somewhat role in supporting local ecological processes and connectivity, and with some rehabilitation (which includes construction and improvement of stormwater discharge), this is likely to improve. Ecological processes should be considered within a landscape level and since the ecological areas are within a significantly modified and fragmented urban landscape, the minor impacts of the proposed stormwater infrastructure discharge points will have a negligible impact.

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.

N/A. The proposed site does not overlap with any The South Africa Protected Areas Database (SAPAD) designated Protected Areas and is unlikely to have any impacts of significance to any species or processes associated with any nearby Protected Areas.

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

According to the Terrestrial Biodiversity Impact Assessment Report compiled by Mr. Jamie Pote, the following observations were made during the field survey:

No endemic and range restricted species were recorded to be present. Several species are known from the surrounding area, but unlikely to be affected by the proposed activity. The Fauna species include mainly species typical of urbanised and transformed areas, perhaps having the occasional visit from less common species that typically occur in natural areas that are in transit through urban areas or are acclimated to the urbanised environment

The site falls within the general distribution range of a single faunal SCC however; none are confirmed to be present. Since the project footprint is relatively small, is situated directly adjacent to urban and disturbed areas and surrounded by extensive outlying areas of natural habitat, any disturbance or displacement associated with increased activity or habitat destruction as a direct result of the activity is unlikely to pose a significant negative impact faunal species and in particular the species of special concern.

Records indicate that the species *Chlorotalpa duthieae*, Sensitive species & *Afrixalus knysnae* have been recorded in the wider area, however none are likely to occur on the site. There is no evidence of any Golden Moles being present and while aquatic habitat is present, it is not deemed suitable due to the high levels of pollution in the watercourse and also the disturbed nature of the vegetation.

The site is not situated within or near nay designated Important Bird Area The nearest IBA is the Outeniqua mountains IBA situated just over 3 km to the north and east. While the surrounding area may have transient bird species visitors that are associated with the IBA, it is unlikely that the specific activity, within an urban and significantly transformed and degraded area is likely to have any impact of significance to such occurrences.

The birds *Bradypterus sylvaticus* & *Circus ranivorus,* as well as the insect *Aneuryphymus montanus*, while likely occurring in the surrounding area where natural vegetation is intact and more extensive, are unlikely to be affected by the proposed activity which will have a small and highly localised footprint. Improved stormwater management is also likely to improve overall aquatic health after construction.

No fauna relocation is likely to be required before commencement, and permits were unlikely to be required for any species of conservation concern, but recommended as a precautionary measure for any small rodents and reptiles may occur, and since fauna are mobile, they may be transient to the area.

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 upgrades.

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.		
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.
N/A

8. Socio/Economic Aspects

8.1.	Describe the existing social and economic characteristics of the community in the vicinity of the proposed site.
	Rosemore is a suburb in George almost in the centre of town. According to Census 2022 the George municipality has a population of 294 929 which is the highest population in the Garden Route District municipality.
8.2.	Explain the socio-economic value/contribution of the proposed development.
The estimated cost of the proposal is R 32 456 677.83 excluding VAT.	
8.3.	Explain what social initiatives will be implemented by applicant to address the needs of the community and to uplift the area.
The need for stormwater infrastructure upgrades required within the Rosemore area to prevent future flooding and provide jobs to locals.	
8.4.	Explain whether the proposed development will impact on people's health and well-being (e.g. in terms of noise, odours, visual character and sense of place etc) and how has this influenced the proposed development.
It is not expected that the proposed expansion will have any significant negative impacts on people's health in terms of noise, odours or visual characteristics.	

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 site alternative.	
The site is situated in Rosemore. Rosemore is a suburb in George almost in the centre of town. Rosemore is situated nearby the suburbs of Conville and Levallia and is nestled between the Meul River in the south and west and a tributary stream of the Meul River to the East. As the proposal is for the upgrading of existing stormwater infrastructure, no property or site alternatives exist.	
Provide a description of any other property and site alternatives investigated.	
As the proposal is for the upgrading of existing stormwater infrastructure, no property or site alternatives exist	
Provide a motivation for the preferred property and site alternative including the outcome of the site selectin matrix.	
As the proposal is for the upgrading of existing stormwater infrastructure, no property or site alternatives exist	
Provide a full description of the process followed to reach the preferred alternative within the site.	
As the proposal is for the upgrading of existing stormwater infrastructure, no property or site alternatives exist	
Provide a detailed motivation if no property and site alternatives were considered.	

Not Applicable
List the positive and negative impacts that the property and site alternatives will have on the environment.
Not Applicable

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

Provide a description of the preferred activity alternative.
Not Applicable
Provide a description of any other activity alternatives investigated.
Not Applicable
Provide a motivation for the preferred activity alternative.
Not Applicable
Provide a detailed motivation if no activity alternatives exist.
This proposal is not for a new development but rather to upgrade the stormwater infrastructure in Rosemore.
List the positive and negative impacts that the activity alternatives will have on the environment.
Not Applicable

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.
Replacing the existing Storm Water System in place: This entails removal of the existing pipes in the alignment in which they currently reside and replacement with new pipes at slightly deeper invert level when upsizing. This is likely the best option for most of the pipelines identified above but it does come with some challenges. The presence of existing services in close proximity to the existing sewer pipes could make construction slightly challenging. The existing pipe will need to be found, excavated and removed (whether by hand or by machine), disposed of offsite and the new pipe installed. The presence of junction boxes or other connections underground may not be known and it could be prudent to have the existing storm water pipelines CCTV inspected prior to construction. The replacement of the existing pipe does have the benefit of not having an undersized asset still in the ground that will remain unused in the future and thus this is the preferred option where practical.
Provide a description of any other design or layout alternatives investigated.
1. **Construction of a new storm water pipe on an alignment that is not the same as the existing pipes.** In some areas the existing pipelines have been encroached upon by structures and removal of the existing pipelines will be difficult to impossible. One such area is the Nieuwoud Outlet shown in the figure below. For this pipeline a possible reroute as shown in blue must be considered depending on ground levels determined in the topographical survey.

Figure 18: Possible rerouting of Nieuwoud outlet pipe

Another such area is in Woltemade Street shown in Figure 19 below. For this pipeline a possible reroute as shown in blue was considered. Unfortunately, due to ground levels determined by the topographical survey only Langmark Street can drain to the north towards Miller Street and a reroute in Woltemade Street is possible.

Figure 19: Possible rerouting of the Woltemade Outlet Pipe

2. Possible extensions to the network not indicated in the initial scope of work

The area of concern around Hibiscus Road and St Mary Street discussed above may necessitate redirecting the storm water infrastructure in alternative routes not indicated by the Storm Water Masterplan. The figure below shows both Hibiscus Road and St Mary's Street seemingly draining into St Mary's Primary School. This is obviously not a tenable situation and depending on the findings of the Topographical Survey additional pipelines to convey the storm water to a suitable downstream location will be required (possibly as shown in red in the figure 20).

Figure 20: Possible additional pipes not included in the original scope

With further investigation some existing storm water midblocks could be rerouted to reduce strain within the existing network and divert the network away from the properties and into the roads. It was deemed possible to reroute the following road storm water network to reduce any strain on the existing network and minimizing the number of upgrades required

- Langmark Street can be rerouted toward Miller Street and tie into its existing network as indicated on Figure 21 below.
- George Moore Street can be rerouted towards O'Connel Street and tie into its existing stormwater network as indicated on Figure 22 below.
- Francis Street can be rerouted towards O'Connel Street and tie into the existing storm water network the two existing networks in question can also be combined into one outlet structure as indicated on Figure 23.
- Nuwe Street can be rerouted towards Kondor Street and tie into the existing storm water network as indicated on Figure 24.

Figure 21: Possible additional pipes in Langmark Street not included in original scope

Figure 22: Possible additional pipes in George Moore Street not included in original scope

Figure 23: Possible additional pipes in Francis Street not included in original scope

Figure 24: Possible additional pipes in Nuwe Street not included in original scope

It is important to note that due to the natural ground levels of the surrounding area for each of the reroutes in question, it may necessitate pipes to be constructed deep to be able to tie into the existing stormwater network downstream. All of these reroutes are recommended as it reduces the number of pipes running under existing homes and ensures future maintenance on the network takes place within the road.

Provide a motivation for the preferred design or layout alternative.

It is very likely that the final detailed design will include a combination of all three concepts

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

More than one of the design approaches will be implemented at each site as appropriate for each affect site. All of these reroutes are recommended as it reduces the number of pipes running under existing homes and ensures future maintenance on the network takes place within the road.

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

Positive

- Maintain municipal infrastructure
- Reduction in erosion

Negative

• Temporary inconvenience to residents during construction • Temporary inconvenience to the biosphere environments construction	
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	
Provide a description of any other technology alternatives investigated.	
Not Applicable	
Provide a motivation for the preferred technology alternative.	
Not Applicable	
Provide a detailed motivation if no alternatives exist.	
This proposal is not for a new development but rather to upgrade the stormwater infrastructure.	
List the positive and negative impacts that the technology alternatives will have on the environment.	
Not applicable	
1.5.	Operational alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.
Provide a description of the preferred operational alternative.	
Not Applicable, refer to design alternatives	
Provide a description of any other operational alternatives investigated.	
Not Applicable, refer to design alternatives	
Provide a motivation for the preferred operational alternative.	
Not Applicable, refer to design alternatives	
Provide a detailed motivation if no alternatives exist.	
Not Applicable, refer to design alternatives	
List the positive and negative impacts that the operational alternatives will have on the environment.	
Not Applicable, refer to design alternatives	
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.	
No Go option is not feasible as this infrastructure upgrade is required to ensure that the municipality provides quality services	
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.
Not Applicable, refer to design alternatives	
1.8.	Provide a concluding statement indicating the preferred alternatives, including the preferred location of the activity.
Not Applicable, refer to design alternatives	

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).
No-go areas are not identified within the site. Only the development footprint and the smallest reasonable working area around the footprint must be used

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

Describe the methodology to be used in determining and ranking the nature, significance, consequences, extent, duration of the potential environmental impacts and risks associated with the proposed activity or development and alternatives, the degree to which the impact or risk can be reversed and the degree to which the impact and risk may cause irreplaceable loss of resources.
The assessment criteria utilised in this environmental impact assessment is based on, and adapted from, the Guideline on Impact Significance, Integrated Environmental Management Information Series 5 (Department of Environmental Affairs and Tourism (DEAT), 2002) and the Guideline 5: Assessment of Alternatives and Impacts in Support of the Environmental Impact Assessment Regulations (DEAT, 2006). **Determination of Extent (Scale):**

Site Specific	On site or within 100 m of the site boundary, but not beyond the property boundaries.

Local	The impacted area includes the whole or a measurable portion of the site and property, but could affect the area surrounding the development, including the neighbouring properties and wider municipal area.
Regional	The impact would affect the broader region (e.g., neighbouring towns) beyond the boundaries of the adjacent properties.
National	The impact would affect the whole country (if applicable)

Determination of Duration

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

Determination of Probability:

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

Determination of Significance (without mitigation):

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

Determination of Significance (with mitigation):

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

Determination of Reversibility:

Completely Reversible	The impact is reversible with implementation of minor mitigation measures
Partly Reversible	The impact is partly reversible but more intense mitigation measures
Barely Reversible	The impact is unlikely to be reversed even with intense mitigation measures

Irreversible	The impact is irreversible, and no mitigation measures exist

Determination of degree to which an impact can be mitigated

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

Determination of Loss of Resources

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

Determination of Consequence Significance

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

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.

CONSTRUCTION AND OPERATIONAL PHASE		
Potential impact and risk:	Impact on Terrestrial Biodiversity (Vegetation)	**NO- GO**
Nature of impact:	Negative	
Extent and duration of impact:	Site-Specific & Long Term	
Consequence of impact or risk:	Permanent or temporary loss of indigenous vegetation cover because of site clearing. Site clearing before construction will result in the blanket clearing of vegetation within the affected footprint.	
Probability of occurrence:	Definite	
Degree to which the impact may cause irreplaceable loss of resources:	Marginal Loss	
Degree to which the impact can be reversed:	High reversibility	
Indirect impacts:	None	
Cumulative impact prior to mitigation:	Low	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low	No impact
Degree to which the impact can be avoided:	High	

Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	High	
Proposed mitigation:	• No clearing outside of development footprint to take place. • Areas surrounding the footprints should be revegetated on completion of construction	
Residual impacts:	None	
Cumulative impact post mitigation:	Negligible	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very Low	No impact

CONTRUCTION AND OPERATIONAL PHASE		
Potential impact and risk:	Impact on Terrestrial Biodiversity (Flora species)	**NO GO**
Nature of impact:	Negative	
Extent and duration of impact:	Site-Specific & Long Term	
Consequence of impact or risk:	Several special of concern are known from surrounding areas, which could be destroyed during site preparation, none of which were confirmed to be present.	
Probability of occurrence:	Probable	
Degree to which the impact may cause irreplaceable loss of resources:	Marginal Loss	
Degree to which the impact can be reversed:	High reversibility	
Indirect impacts:	None	
Cumulative impact prior to mitigation:	Low	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low	No impact
Degree to which the impact can be avoided:	High	
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	High	
Proposed mitigation:	• A flora search and rescue is unlikely to be required and no protected flora were found to be present within a natural context.	
Residual impacts:	None	
Cumulative impact post mitigation:	Negligible	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very Low	No impact

CONSTRUCTION AND OPERATIONAL PHASE		**No- Go**
Potential impact and risk:	Impact on Terrestrial Biodiversity: A lien Invasive species	
Nature of impact:	Negative	
Extent and duration of impact:	Site-Specific & Long Term	

Consequence of impact or risk:	Susceptibility of post construction disturbed areas to invasion by exotic and alien invasive species and removal of exotic and alien invasive species during construction. Post construction disturbed areas having no vegetation cover are often susceptible to invasion by weedy and alien species, which can not only become invasive but also prevent natural flora from becoming established.	
Probability of occurrence:	Probable	
Degree to which the impact may cause irreplaceable loss of resources:	Marginal Loss	
Degree to which the impact can be reversed:	High reversibility	
Indirect impacts:	None	
Cumulative impact prior to mitigation:	Negligible	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low	No impact
Degree to which the impact can be avoided:	High	
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	High	
Proposed mitigation:	• A suitable weed management strategy to be implemented in and around the site post construction, which is likely to result in proliferation of weeds in disturbed areas on completion.	•
Residual impacts:	None	
Cumulative impact post mitigation:	Negligible	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very low	No impact

CONSTRUCTION AND OPERATIONAL PHASE		**No go**
Potential impact and risk:	Impact on Terrestrial Biodiversity: Erosion	
Nature of impact:	Negative	
Extent and duration of impact:	Site-Specific & Medium Term	
Consequence of impact or risk:	Susceptibility of some areas to erosion because of construction related disturbances. Removal of vegetation cover and soil disturbance may result in some areas being susceptible to soil erosion after completion of the activity.	

Probability of occurrence:	Probable	
Degree to which the impact may cause irreplaceable loss of resources:	Marginal Loss	
Degree to which the impact can be reversed:	High reversibility	
Indirect impacts:	No significant indirect impacts are anticipated.	
Cumulative impact prior to mitigation:	No cumulative impacts are expected because of the development of the site providing recommendation and mitigation measures are adhered to, due to the limited disturbance area.	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low	No impact
Degree to which the impact can be avoided:	High	
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	High	
Proposed mitigation:	• Suitable measures must be implemented at all discharge points to protected against erosion. • Areas must be rehabilitated, and a suitable indigenous grass seed mix planted where natural vegetation re-establishment does not occur.	•
Residual impacts:	None	
Cumulative impact post mitigation:	Negligible.	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very low	No impact

CONSTRUCTION AND OPERATIONAL PHASE		**No Go**
Potential impact and risk:	Impact on Terrestrial Biodiversity: Ecological processes	
Nature of impact:	Negative	
Extent and duration of impact:	Site-Specific & short Term	
Consequence of impact or risk:	Disturbances to ecological processes: Activity may result in disturbances to ecological processes.	
Probability of occurrence:	Probable	
Degree to which the impact may cause irreplaceable loss of resources:	Marginal Loss	
Degree to which the impact can be reversed:	High reversibility	
Indirect impacts:	No significant indirect impacts are anticipated.	

Cumulative impact prior to mitigation:	Low	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low	No impact
Degree to which the impact can be avoided:	High	
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	High	
Proposed mitigation:	• The habitats and microhabitats present on the project site are not unique and are widespread in the general area, hence the local impact associated with the footprint above current baseline levels would be of low significance if mitigation measures are adhered to.	•
Residual impacts:	None	
Cumulative impact post mitigation:	Negligible.	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very low	No impact

CONSTRUCTION AND OPERATIONAL PHASE		**NO – GO**
Potential impact and risk:	Impact on Terrestrial Biodiversity: Negative	
Nature of impact:	Faunal Species	
Extent and duration of impact:	Site-Specific & short Term	
Consequence of impact or risk:	Activities associated with bush clearing, killing of perceived dangerous fauna, may lead to increased mortalities among faunal species.	
Probability of occurrence:	Probable	
Degree to which the impact may cause irreplaceable loss of resources:	Marginal Loss	
Degree to which the impact can be reversed:	High reversibility	
Indirect impacts:	No significant indirect impacts are anticipated.	
Cumulative impact prior to mitigation:	No cumulative impacts are expected because of the development of the site providing recommendation and mitigation measures are adhered to, due to the limited disturbance area.	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low	NO IMPACT

Degree to which the impact can be avoided:	High	
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	High	
Proposed mitigation:	• Small mammals within the habitat on and around the affected area are generally mobile and likely to be transient to the areas. Specific measures are made to reduce this risk. The risk of species of special concern is low and it is unlikely that there will be any impact to the populations of such species	•
Residual impacts:	None	
Cumulative impact post mitigation:	Negligible	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very low	NO IMPACT

Construction and operational phase		
Potential impact and risk:	Impact on Aquatic Biodiversity	No Go
Nature of impact:	Management of construction site and works	
Extent and duration of impact:	Site-Specific & short Term	
Consequence of impact or risk:	Disturbance and pollution of wetland habitat	
Probability of occurrence:	Highly Probable	
Degree to which the impact may cause irreplaceable loss of resources:	Marginal Loss	
Degree to which the impact can be reversed:	Fully reversable	
Indirect impacts:	None	
Cumulative impact prior to mitigation:	Medium	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Medium negative**	**No impact**
Degree to which the impact can be avoided:	High	
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	High	

Proposed mitigation:	• Excavators and all other machinery and vehicles must be checked for oil and fuel leaks daily. No machinery or vehicles with leaks are permitted to work in the wetland. • Excavators and all other machinery and vehicles must be checked for oil and fuel leaks daily. No machinery or vehicles with leaks are permitted to work in the wetland. • Refuelling and fuel storage areas, and areas used for the servicing or parking of vehicles and machinery, must be located on impervious bases and should have bunds around them (sized to contain 110 % of the tank capacity) to contain any possible spills; • No laydown areas, stockpiling of construction materials or excavated topsoil is permitted within delineated wetland areas; • Cement/concrete used in the construction must not be mixed on bare ground or within the delineated extent of the wetlands. An impermeable/bunded area must be established in such a way that cement slurry, runoff and cement water will be contained and will not flow into the surrounding environment or contaminate the soil; • Construction within wetland seep areas must be confined to clearly demarcated areas so as to prevent unnecessary disturbance of wetland habitat outside of these areas; • Construction areas to be inspected on a regular basis (at least weekly) by an appropriately qualified ECO for signs of disturbance, sedimentation and pollution during the construction phase. If signs of disturbance,	

	sedimentation or pollution are noted, immediate action should be taken to remedy the situation and, if necessary, a freshwater ecologist should be consulted for advice on the most suitable remediation measures.	
Residual impacts:	Very Low	
Cumulative impact post mitigation:	Negligible	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Low Negative**	**No impact**

CONSTRUCTION AND OPERATIONAL PHASE		
Potential impact and risk:	Impact on Aquatic Biodiversity	No Go
Nature of impact:	Excavation of banks	
Extent and duration of impact:	Site-Specific & short Term	
Consequence of impact or risk:	Erosion and sedimentation of wetland habitat	
Probability of occurrence:	Highly Probable	
Degree to which the impact may cause irreplaceable loss of resources:	Marginal Loss	
Degree to which the impact can be reversed:	Fully reversable	
Indirect impacts:	None	
Cumulative impact prior to mitigation:	Medium	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Medium negative**	**No impact**
Degree to which the impact can be avoided:	High	
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	High	
Proposed mitigation:	• Construction activities must be timed to coincide with low rainfall probability (dry season) to avoid erosion of exposed banks; • Existing erosion gulleys must be backfilled and re-profiled to match natural contours/slopes; • Since stormwater outlets will be built where erosion potential is high, construction must be sequenced so that they are put in place with the	

	minimum possible delay. Disturbance/excavation of areas where stormwater outlets are to be constructed must be undertaken only when final placement can follow immediately following the initial disturbance; • A construction schedule must be developed and clearly defined so as to avoid multiple sites being exposed and unattended to at any moment in time. The completion date for each phase of development must be indicated and all clearing, excavation, and stabilisation operations must be completed before moving onto the next phase; • Construction within wetland seep areas must be confined to clearly demarcated areas so as to prevent unnecessary disturbance of wetland habitat outside of these areas; • Following backfilling and construction of stormwater infrastructure, exposed unvegetated slopes must be stabilised with appropriate geotextiles (e.g. SoilSaver®) or vegetated with appropriate indigenous vegetation. Banks should ideally be regraded to a achieve slopes of 1:4 or flatter; and • Wooden stakes must be used to anchor erosion control mats as there is a high probability that metal stakes will be stolen.	
Residual impacts:	Very Low	
Cumulative impact post mitigation:	Negligible	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Low Negative**	**No impact**

CONSTRUCTION AND OPERATIONAL PHASE		
Potential impact and risk:	Impact on Aquatic Biodiversity	No Go
Nature of impact:	Excavation of banks	
Extent and duration of impact:	Site-Specific & short Term	
Consequence of impact or risk:	Disturbance of wetland habitat	
Probability of occurrence:	Highly Probable	
Degree to which the impact may cause irreplaceable loss of resources:	Marginal Loss	
Degree to which the impact can be reversed:	Fully reversable	
Indirect impacts:	None	
Cumulative impact prior to mitigation:	Medium	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Medium negative**	**No impact**
Degree to which the impact can be avoided:	High	
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	High	
Proposed mitigation:	• Areas where instream construction activities will take place must be confined to clearly demarcated areas so as to prevent unnecessary disturbance of instream and riparian habitat outside of these areas; and • A single point of access must be used to access each site.	
Residual impacts:	Very Low	
Cumulative impact post mitigation:	Negligible	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Low Negative**	**No impact**

OPERATIONAL PHASE		
Potential impact and risk:	Impact on Aquatic Biodiversity	No Go
Nature of impact:	Discharge of stormwater into wetland habitat	Discharge of stormwater into wetland habitat
Extent and duration of impact:	Site-Specific & long Term	Site-Specific & long Term
Consequence of impact or risk:	Reduced erosion of wetland habitat	Erosion of wetland habitat
Probability of occurrence:	Highly Probable	Definite

Degree to which the impact may cause irreplaceable loss of resources:	Marginal Loss	Marginal Loss
Degree to which the impact can be reversed:	Fully reversable	Fully reversable
Indirect impacts:	None	Medium
Cumulative impact prior to mitigation:	Low	medium
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Low negative**	**High Negative**
Degree to which the impact can be avoided:	High	High
Degree to which the impact can be managed:	High	High
Degree to which the impact can be mitigated:	High	High
Proposed mitigation:	• The stormwater outlet structures must be inspected on a routine basis to ensure that is free of any blockages and debris and is operating according to design specifications; • The bed and banks of the river must be routinely inspected (especially following heavy rainfall events) to ensure that the outlet structure is not causing unnecessary erosion of the bed and banks of the river. Any erosion observed must immediately be attended to through appointment of a suitably qualified aquatic specialist; • All gabion structures must be inspected on a routine basis to ensure that the baskets are intact and that rocks have not displaced. Any faults must be immediately repaired; and • Gabion structures must be lined with geotextiles to prevent the migration of fines that would otherwise undermine these structures.	None- No go
Residual impacts:	Very Low	Moderate
Cumulative impact post mitigation:	Negligible	Negligible
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Low Positive**	**High Negative**

SECTION I: FINDINGS, IMPACT MANAGEMENT AND MITIGATION MEASURES

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

Table 1: Summary of the impacts post mitigation

Impact	Alternative	No go
Construction		
Disturbance and pollution of wetland habitat	**Low negative**	**No impact**
Erosion and sedimentation of wetland habitat	**Low negative**	**No impact**
Disturbance of wetland habitat	**Low negative**	**No impact**
Impact on Vegetation	**Very Low negative**	**No impact**
Impact of flora species	**Very Low negative**	**No impact**
Ecological processes	**Very low negative**	**No impact**
Impact on Faunal species	**Very low negative**	**No impact**
Impact on Faunal habitat	**Very low negative**	**No impact**
Impact on Faunal processes	**Very low negative**	**No impact**
Operational Phase		
Reduced erosion of wetland habitat	**Low positive**	**High negative**
Impact on vegetation	**Very low negative**	**No impact**
Impact on flora species	**Very low negative**	**No impact**
Impact on alien invasive species	**Very low negative**	**No impact**
Impact on Ecological processes	**Very low**	**No impact**
Impact on faunal species	**Very low negative**	**No impact**
Impact on Fauna habitat	**Very low negative**	**No impact**
Impact on Faunal processes	**Very low negative**	**No impact**

Construction phase

Vegetation

Permanent or temporary loss of indigenous vegetation cover because of site clearing. Site clearing before construction will result in the blanket clearing of vegetation within the affected footprint. The percentage of natural vegetation within this habitat is likely between 5 and 10 % comprising a few scratted elements. The vegetation present is not representative of the Critically Endangered

Plant species

National Environmental Screening Tool flagged several flora species. Almost the entire site is situated within a significantly altered and degraded landscape, where little natural vegetation remains. No significant pockets of natural vegetation were found that might provide suitable habitat for these species and it is confirmed that no species of conservation concern having an elevated status and/or limited distribution range as flagged in the screening tool are present.

Animal Species

National Environmental Screening Tool flagged several fauna species. Almost the entire site is situated within a significantly altered and degraded landscape, where little natural vegetation remains. No significant pockets of natural vegetation were found that might provide suitable habitat for these species and it is confirmed that no species of conservation concern having an elevated status and/or limited distribution range as flagged in the screening tool are present.

Erosion and sedimentation of wetland habitat

Installation of stormwater infrastructure on slopes will require the excavation of sections of the

banks which will expose bare soil to the environment and could lead to high rates of erosion and sedimentation, particularly during heavy rainfall events. This can result in high levels of turbidity as well as infilling of wetland habitat by high sediment loads. Given the current PES of affected wetlands these impacts are not expected to be particularly severe if the appropriate mitigation measures are implemented. There is no impact associated with the No-Go option.

Disturbance of wetland habitat
Additional impacts associated with the construction phase involve the loss of additional habitat and biota as a result of disturbances (e.g. from construction vehicles and machinery) that occur outside of the areas designated for the installation of stormwater outlets. Given the current PES of the watercourses these impacts are not expected to be particularly severe if the appropriate mitigation measures are implemented. There is no impact associated with the No-Go option.

Operational phase

Reduced erosion of wetland habitat
The most serious impacts related to stormwater discharge relates to the input of high volumes of water at high velocity, which has already caused erosion of wetland seep habitat. Considering that all outlets currently discharge stormwater into the Meul River and associated wetland habitat, the intensity of impact has been assessed relative to the current scenario. In this respect, the addition of energy dissipation structures designed to reduce the velocity of the water discharged which will help to prevent erosion problems and represents a positive impact. The No-Go scenario will result in continued erosion of wetland seep habitat and deposition of high quantities of sediment into the river.

Alien invasive
Post construction disturbed areas having no vegetation cover are often susceptible to invasion by weedy and alien species, which can not only become invasive but also prevent natural flora from becoming established.

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

Terrestrial Biodiversity assessment report impact management measures

- No clearing outside of development footprint to take place
- Areas surrounding the footprints should be revegetated on completion of construction.
- A flora search and rescue is unlikely to be required and no protected flora were found to be present within a natural context.
- A suitable weed management strategy to be implemented in and around the site post construction, which is likely to result in proliferation of weeds in disturbed areas on completion.
- Suitable measures must be implemented at all discharge points to protected against erosion.
- Areas must be rehabilitated, and a suitable indigenous grass seed mix planted where natural vegetation re-establishment does not occur.
- Adequate measures to be implemented for erosion and stormwater management and/or dispersion at stormwater discharge points.
- Where possible, design of discharge points should accommodate measures to trap and reduce discharge of solid waste into watercourses (paper, plastic, etc), that would allow for easier ongoing cleanup.
- The habitats and microhabitats present on the project site are not unique and are widespread in the general area, hence the local impact associated with the footprint above current baseline levels would be of low significance if mitigation measures are adhered to.
- Small mammals within the habitat on and around the affected area are generally mobile and likely to be transient to the area. Specific measures are made to reduce this risk. The risk of species of special concern is low, and it is unlikely that there will be any impact to populations of such species because of the activity.
- A faunal search and rescue is unlikely to be required and no protected species are likely to be affected but is recommended as a precautionary measure.

- No animals are to be harmed, trapped or killed during the course of operations other than where rescue is required and only undertaken by an expert.

Aquatic biodiversity assessment

- Excavators and all other machinery and vehicles must be checked for oil and fuel leaks daily. No machinery or vehicles with leaks are permitted to work in the wetland;
- Refuelling and fuel storage areas, and areas used for the servicing or parking of vehicles and machinery, must be located on impervious bases and should have bunds around them (sized to contain 110 % of the tank capacity) to contain any possible spills.
- No laydown areas, stockpiling of construction materials or excavated topsoil is permitted within delineated wetland areas;
- Cement/concrete used in the construction must not be mixed on bare ground or within the delineated extent of the wetlands. An impermeable/bunded area must be established in such a way that cement slurry, runoff and cement water will be contained and will not flow into the surrounding environment or contaminate the soil;
- Construction within wetland seep areas must be confined to clearly demarcated areas so as to prevent unnecessary disturbance of wetland habitat outside of these areas;
- Workers must be properly instructed in the proper care of the environment, especially with respect to poaching, disturbance of nesting and roosting areas, disposal of human waste, garbage etc.;
- Construction areas to be inspected on a regular basis (at least weekly) by an appropriately qualified ECO for signs of disturbance, sedimentation and pollution during the construction phase. If signs of disturbance, sedimentation or pollution are noted, immediate action should be taken to remedy the situation and, if necessary, a freshwater ecologist should be consulted for advice on the most suitable remediation measures.
- Construction activities must be timed to coincide with low rainfall probability (dry season) to avoid erosion of exposed banks;
- Existing erosion gulleys must be backfilled and re-profiled to match natural contours/slopes;
- Since stormwater outlets will be built where erosion potential is high, construction must be sequenced so that they are put in place with the minimum possible delay. Disturbance/excavation of areas where stormwater outlets are to be constructed must be undertaken only when final placement can follow immediately following the initial disturbance;
- Construction within wetland seep areas must be confined to clearly demarcated areas so as to prevent unnecessary disturbance of wetland habitat outside of these areas;
- Following backfilling and construction of stormwater infrastructure, exposed unvegetated slopes must be stabilised with appropriate geotextiles (e.g. SoilSaver®) or vegetated with appropriate indigenous vegetation. Banks should ideally be regraded to a achieve slopes of 1:4 or flatter; and
- Wooden stakes must be used to anchor erosion control mats as there is a high probability that metal stakes will be stolen.
- Areas where instream construction activities will take place must be confined to clearly demarcated areas so as to prevent unnecessary disturbance of instream and riparian habitat outside of these areas; and
- The stormwater outlet structures must be inspected on a routine basis to ensure that is free of any blockages and debris and is operating according to design specifications;
- The bed and banks of the river must be routinely inspected (especially following heavy rainfall events) to ensure that the outlet structure is not causing unnecessary erosion of the bed and banks of the river. Any erosion observed must immediately be attended to through appointment of a suitably qualified aquatic specialist;
- All gabion structures must be inspected on a routine basis to ensure that the baskets are intact and that rocks have not displaced. Any faults must be immediately repaired; and

- Gabion structures must be lined with geotextiles to prevent the migration of fines that would otherwise undermine these structures.

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.

N/A. All mitigation recommended will be implemented

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

During the construction phase the community will temporarily be inconvenienced by the construction impacts however this impact is temporary in nature. Traffic flow will also be disturbed during the construction phase.

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

N/A

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

N/A

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

All specialists' recommendations have been included in the EMPr requirements and informed the preferred location, layout, operational and activity alternatives as proposed.

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

1	**AVOID IMPACTS**	THE TEMPORARY IMPACTS TO THE BIOPHYSICAL ENVIRONMENT ARE UNAVOIDABLE
2	**MINIMISE IMPACTS**	THE IMPACTS WILL BE MINIMISED THROUGH THE IMPLEMENTATION OF THE MITIGATION MEASURES WITHIN THE EMPR
3	**RECTIFY**	THE DISTURBANCES CREATED BY THE CONSTRUCTION PHASE WILL BE REHABILITATED IN ACCORDANCE WITH THE EMPR
4	**OFFSET**	NONE NECESSARY

SECTION J: GENERAL

1. Environmental Impact Statement

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

As shown in Table 2, with the implementation of the proposed mitigation measures the negative impacts associated with the construction phase can all be considered very low. The proposal is to upgrade the existing stormwater infrastructure of the Rosemore area.

Table 2: Summary of the impacts post mitigation

Impact	**Alternative**	**No go**
Construction		
Disturbance and pollution of wetland habitat	**Low negative**	**No impact**
Erosion and sedimentation of wetland habitat	**Low negative**	**No impact**
Disturbance of wetland habitat	**Low negative**	**No impact**
Impact on Vegetation	**Very Low negative**	**No impact**
Impact of flora species	**Very Low negative**	**No impact**
Ecological processes	**Very low negative**	**No impact**
Impact on Faunal species	**Very low negative**	**No impact**
Impact on Faunal habitat	**Very low negative**	**No impact**
Impact on Faunal processes	**Very low negative**	**No impact**
Operational Phase		
Reduced erosion of wetland habitat	**Low positive**	**High negative**
Impact on vegetation	**Very low negative**	**No impact**
Impact on flora species	**Very low negative**	**No impact**

Impact on alien invasive species	**Very low negative**	**No impact**
Impact on Ecological processes	**Very low**	**No impact**
Impact on faunal species	**Very low negative**	**No impact**
Impact on Fauna habitat	**Very low negative**	**No impact**
Impact on Faunal processes	**Very low negative**	**No impact**

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

POSITIVE

- Upgrading municipal infrastructure
- Reduce the chances of localized flooding
- Providing temporary job opportunities for community members

NEGATIVE

- Loss of vegetation
- Temporary inconvenience to residents due to construction

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

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

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

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

Table 3: Summary of impact management objects and impact management outcomes

PRE- CONSTRUCTION	
IMPACT MANAGEMENT OBJECTIVES	**IMPACT MANAGEMENT OUTCOMES**
To appoint a suitably qualified and experienced Environmental Control Officer	The conditions of Environmental Authorisation and the requirements of the EMPr are implemented and monitored during all phases of the development, which will promote sound environmental management on site.
Identify and demarcate no-go areas, working areas and site facilities	Future construction activities will be restricted to within the designated areas & environmentally sensitive areas (no-go areas) will be protected from disturbance
To set up and equip the site camp and associated site facilities in a manner that will promote good environmental management.	Site camp facilities do not impact significantly on environment. The equipment required to implement the provisions of the EMPr are provided on site.
Environmental Control Officer to conduct an inspection prior to the commencement of construction activities on site.	Good environmental management is promoted and enforced by the ECO during the full pre-construction and construction phases. Site facilities are appropriately located on site.

	Construction workers receive environmental awareness training before commencing work on site
CONSTRUCTION PHASE	
To limit impact on vegetation	No clearing outside of development footprint to take place and areas surrounding the footprints should be revegetated on completion of construction.
To limit erosion	Suitable measures must be implemented at all discharge points to protected against erosion. And areas must be rehabilitated, and a suitable indigenous grass seed mix planted where natural vegetation re-establishment does not occur.
To limit disturbance and pollution of wetland habitat	Construction machinery is maintained within the development footprint and the water quality of the wetland is not impaired.
To limit erosion and sedimentation of wetland habitat	Soil erosion is kept to a minimum and the wetland is not sedimented or polluted
To limit disturbance of wetland habitat	The disturbance to undertake the activities are limited to the footprint and a reasonable working are around the sites.
POST CONSTRUCTION PHASE	
To limit the impact on vegetation	The disturbed areas are rehabilitated sufficiently and no alien vegetation establish in the recovering areas
Reduced erosion of wetland habitat	Any erosion observed must immediately be attended to through appointment of a suitably qualified aquatic specialist;

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.

Impact mitigation measures as per EMPr must be fully complied with

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

The proposed upgrade of infrastructure should be authorised.
As seen in the body of this Basic Assessment Report, the negative impacts associated with the construction phase can be mitigated to that of a no significance to low significance for terrestrial biodiversity. The impact on the watercourse Low Negative construction phase impact (assuming implementation of mitigation measures).

Proposed Conditions of Authorisation:

- The EMPr must be implemented.
- An ECO must be appointed to monitor compliance with the EMPr

2.4.	Provide a description of any assumptions, uncertainties and gaps in knowledge that relate to the assessment and mitigation measures proposed.
	It is assumed that the proposed mitigation measures as listed in this report and the EMPr will be implemented and adhered to as the significance of impacts ratings are conditional on implementation of the mitigation measures. **<u>Assumptions and limitations of the Terrestrial biodiversity assessment report</u>** • Any botanical surveys based upon a limited sampling time-period, may not reflect the actual species composition of the site due to seasonal variations in flowering times. Additionally, the composition of fire adapted vegetation may vary depending on level

	of maturity or time since last burn. As far as possible, site collected data has been supplemented with desktop and database centred distribution data. • As far as possible, site collected data has been supplemented with desktop and database-centred distribution data as well as previous studies undertaken in the area. **<u>Assumptions and limitations of the Aquatic biodiversity assessment report</u>** • The assessment of the site visit represents a brief temporal snapshot of conditions on the site. Changes in season or short-term changes in climatic conditions may possibly result in the formation of aquatic habitats (e.g. temporary or seasonal wetlands) under significantly wetter conditions. Despite this limitation the sensitivity of aquatic biodiversity on the site was determined with a very high level of confidence. • Assessment of impacts was based on the technical design drawings provided.
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.

Estimated duration of the Construction Phase – 2 years

Frequency at which the environmental audits in terms of Regulation 34 of the NEMA EIA Regulations, 2014 must be conducted by an independent person – Due to the expected construction period it is recommended that environmental audits in terms of Regulation 34 of the NEMA EIA Regulations, 2014 must be conducted at least one year after construction has commenced and annually thereafter during construction (if construction period takes more than 12 months).

The period for which the EA is required, and the activity must be concluded- Within 5 years of obtaining Environmental Authorisation.

Period during which post construction monitoring requirements should take place- Post construction monitoring should take place one year after construction completion, during which rehabilitation and operational requirements must be reported upon by the independent Environmental Control Officer

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.
N/A

4. Waste

Explain what measures have been taken to reduce, reuse or recycle waste.
An integrated waste management approach will be followed as per the requirements of the EMPr during the construction phase.

5. Energy Efficiency

8.1.	Explain what design measures have been taken to ensure that the development proposal will be energy efficient.
The proposal will not use power during the operational phase. Generators will be used during the construction phase if required.	

SECTION K: DECLARATIONS

DECLARATION OF THE APPLICANT

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

I…**Lindsay Mooiman**……, ID number **6510240147084**……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.

2025.08.27

Signature of the Applicant: Date:

George Municipality

Name of company (if applicable):

DECLARATION OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

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

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

Signature of the EAP: Date: 5 September 2025

Sharples Environmental Services cc

Name of company (if applicable):