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# DRAFT BASIC ASSESSMENT REPORT

FOR THE

## THE PROPOSED UPGRADE OF THE SCHAAPKOP PUMP STATION RISING MAIN, ON REMAINDER OF ERF 464 AND ERF 13486, 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*  
PO Box 19  
6530

**DATE:** 17 January 2023

**SES REF NO:** 07/SPSP/BAR/11/23  
**DEA&DP REF.NO.:** 16/3/3/1/D2/19/0003/24





## **BASIC ASSESSMENT REPORT**

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

**NOVEMBER 2019**

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

### **GENERAL PROJECT DESCRIPTION**

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

The proposed upgrade of the Schaapkop sewer rising main on the Remainders of Erven 464 and 13486, George Local Municipality, Western Cape.



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

1. **The purpose** of this template is to provide a format for the Basic Assessment report as set out in Appendix 1 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), Environmental Impact Assessment ("EIA") Regulations, 2014 (as amended) in order to ultimately obtain Environmental Authorisation.
2. The Environmental Impact Assessment ("EIA") Regulations is defined in terms of Chapter 5 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA") hereinafter referred to as the "NEMA EIA Regulations".
3. The required information must be typed within the spaces provided in this Basic Assessment Report ("BAR"). The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided.
4. All applicable sections of this BAR must be completed.
5. Unless protected by law, all information contained in, and attached to this BAR, will become public information on receipt by the Competent Authority. If information is not submitted with this BAR due to such information being protected by law, the applicant and/or Environmental Assessment Practitioner ("EAP") must declare such non-disclosure and provide the reasons for believing that the information is protected.
6. This BAR is current as of **November 2019**. It is the responsibility of the Applicant/ EAP to ascertain whether subsequent versions of the BAR have been released by the Department. Visit this Department's website at <http://www.westerncape.gov.za/eadp> to check for the latest version of this BAR.
7. This BAR is the standard format, which must be used in all instances when preparing a BAR for Basic Assessment applications for an environmental authorisation in terms of the NEMA EIA Regulations when the Western Cape Government Department of Environmental Affairs and Development Planning ("DEA&DP") is the Competent Authority.
8. Unless otherwise indicated by the Department, one hard copy and one electronic copy of this BAR must be submitted to the Department at the postal address given below or by delivery thereof to the Registry Office of the Department. Reasonable access to copies of this Report must be provided to the relevant Organs of State for consultation purposes, which may, if so indicated by the Department, include providing a printed copy to a specific Organ of State.
9. This BAR must be duly dated and originally signed by the Applicant, EAP (if applicable) and Specialist(s) and must be submitted to the Department at the details provided below.
10. The Department's latest Circulars pertaining to the "One Environmental Management System" and the EIA Regulations, any subsequent Circulars, and guidelines must be taken into account when completing this BAR.
11. Should a water use licence application be required in terms of the National Water Act, 1998 (Act No. 36 of 1998) ("NWA"), the "One Environmental System" is applicable, specifically in terms of the synchronisation of the consideration of the application in terms of the NEMA and the NWA. Refer to this Department's Circular EADP 0028/2014: One Environmental Management System.
12. Where Section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) ("NHRA") is triggered, a copy of Heritage Western Cape's final comment must be attached to the BAR.
13. The Screening Tool developed by the National Department of Environmental Affairs must be used to generate a screening report. Please use the Screening Tool link <https://screening.environment.gov.za/screeningtool> to generate the Screening Tool Report. The screening tool report must be attached to this BAR.

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

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

## DEPARTMENTAL DETAILS

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

## MAPS

<b>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.</b>	
Locality Map:	<p>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:</p> <ul style="list-style-type: none"> <li>• an accurate indication of the project site position as well as the positions of the alternative sites, if any;</li> <li>• road names or numbers of all the major roads as well as the roads that provide access to the site(s)</li> <li>• a north arrow;</li> <li>• a legend; and</li> <li>• a linear scale.</li> </ul> <p>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.</p> <p>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.</p>

<b>Provide a detailed site development plan / site map (see below) as Appendix B1 to this BAR; and if applicable, all alternative properties and locations.</b>	
Site Plan:	<p>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:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• The property boundaries and numbers of all the properties within 50m of the site must be indicated on the site plan.</li> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• 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 <b>must</b> be clearly indicated on the site plan.</li> <li>• Servitudes and an indication of the purpose of each servitude must be indicated on the site plan.</li> <li>• Sensitive environmental elements within 100m of the site must be included on the site plan, including (but not limited to): <ul style="list-style-type: none"> <li>○ Watercourses / Rivers / Wetlands</li> <li>○ Flood lines (i.e., 1:100 year, 1:50 year and 1:10 year where applicable);</li> <li>○ Coastal Risk Zones as delineated for the Western Cape by the Department of Environmental Affairs and Development Planning ("DEA&amp;DP");</li> <li>○ Ridges;</li> <li>○ Cultural and historical features/landscapes;</li> <li>○ Areas with indigenous vegetation (even if degraded or infested with alien species).</li> </ul> </li> <li>• Whenever the slope of the site exceeds 1:10, a contour map of the site must be submitted.</li> <li>• North arrow</li> </ul> <p>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.</p>
Site photographs	<p>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 <b>Appendix C</b>. 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.</p>
Biodiversity Overlay Map:	<p>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 <b>Appendix D</b>.</p>
Linear activities or development and multiple properties	<p>GPS co-ordinates must be provided in degrees, minutes and seconds using the Hartebeeshoek 94 WGS84 co-ordinate system.</p> <p>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.</p> <p>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 <b>Appendix A3</b>.</p>

## 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:	<b>Maps</b>		
	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	N/A
	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;	Will be included with Final BAR
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	N/A
	Appendix E2:	Copy of comment from Cape Nature	TBO
	Appendix E3:	Final Comment from the DWS	TBO
	Appendix E4:	Comment from the DEA: Oceans and Coast	N/A
	Appendix E5:	Comment from the DAFF	N/A
	Appendix E6:	Comment from WCG: Transport and Public Works	N/A
	Appendix E7:	Comment from WCG: DoA	TBO
	Appendix E8:	Comment from WCG: DHS	N/A
	Appendix E9:	Comment from WCG: DoH	N/A

	<b>Appendix E10:</b>	<b>Comment from DEA&amp;DP: Pollution Management</b>	TBO
	<b>Appendix E11:</b>	<b>Comment from DEA&amp;DP: Waste Management</b>	N/A
	<b>Appendix E12:</b>	<b>Comment from DEA&amp;DP: Biodiversity</b>	TBO
	<b>Appendix E13:</b>	<b>Comment from DEA&amp;DP: Air Quality</b>	N/A
	<b>Appendix E14:</b>	<b>Comment from DEA&amp;DP: Coastal Management</b>	N/A
	<b>Appendix E15:</b>	<b>Comment from the local authority</b>	TBO
	<b>Appendix E16:</b>	<b>Confirmation of all services (water, electricity, sewage, solid waste management)</b>	
	<b>Appendix E17:</b>	<b>Comment from the District Municipality</b>	TBO
	<b>Appendix E18:</b>	<b>Copy of an exemption notice</b>	N/A
	<b>Appendix E19</b>	<b>Pre-approval for the reclamation of land</b>	N/A
	<b>Appendix E20:</b>	<b>Proof of agreement/TOR of the specialist studies conducted.</b>	
	<b>Appendix E21:</b>	<b>Proof of land use rights</b>	
	<b>Appendix E22:</b>	<b>Proof of public participation agreement for linear activities</b>	✓
<b>Appendix F:</b>	<b>Public participation information: including a copy of the register of I&amp;APs, the comments and responses Report, proof of notices, advertisements and any other public participation information as is required.</b>		
<b>Appendix G:</b>	<ul style="list-style-type: none"> <li>• <b>Appendix G1: Botanical Assessment: Mark Berry Environmental Consultants cc – T/A MB Botanical Surveys</b></li> <li>• <b>Appendix G2: Aquatic Biodiversity Impact Assessment: Upstream Consulting: Debbie Fordham</b></li> <li>• <b>Appendix G3: Terrestrial Faunal and Avifaunal Species Compliance Statement Report: Blue Skies Research: Dr Jacobus H. Visser</b></li> </ul>		✓
<b>Appendix H:</b>	<b>EMPr</b>		✓
<b>Appendix I:</b>	<b>Screening tool report</b>		✓
<b>Appendix J:</b>	<b>Engineering Report</b>		✓
<b>Appendix K:</b>	<b>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</b>		Section E
<b>Appendix.....</b>	<b>Any other attachments must be included as subsequent appendices</b>		

## SECTION A: ADMINISTRATIVE DETAILS

Highlight the Departmental Region in which the intended application will fall	CAPE TOWN OFFICE:		GEORGE OFFICE:
	REGION 1 (City of Cape Town, West Coast District)	REGION 2 (Cape Winelands District & Overberg District)	REGION 3 (Central Karoo District & Garden Route District)
<b>Duplicate this section where there is more than one Proponent</b> Name of Applicant/Proponent: Name of contact person for Applicant/Proponent (if other): Company/ Trading name/State Department/Organ of State: Company Registration Number: Postal address: Telephone: E-mail:	George Municipality: Water & Sanitation: Civil Engineering Services		
	Johannes Franciscus Koegelenberg		
	George Municipality: Water & Sanitation: Civil Engineering Services		
	PO Box 19		
	George		Postal code: 6530
	044 801 9278		Cell:
	jkoegelenberg@george.gov.za		Fax: ( )
	Company of EAP: Sharples Environmental Services cc EAP name: Michael Bennett (Registered EAP) Carla Swanepoel (Candidate EAP) Postal address: PO Box 9087 Telephone: 044 873 9087 E-mail: <a href="mailto:michael@sesc.net">michael@sesc.net</a> <a href="mailto:carla@sesc.net">carla@sesc.net</a> Fax: ( ) Qualifications: <i>Michael:</i> BSc Environmental & Geographic Sciences and Ocean and Atmospheric Science <i>Carla:</i> BSc Hons Environmental Sciences – Biodiversity and Conservation Ecology EAPASA registration no: Michael: 2021/3163		
<b>Duplicate this section where there is more than one landowner</b> Name of landowner: Name of contact person for landowner (if other): Postal address: Telephone: E-mail:	George Municipality		
	Johannes Franciscus Koegelenberg		
	PO Box 19		
	George		Postal code: 6530
	044 801 9278		Cell:
	jkoegelenberg@george.gov.za		Fax: ( )
	Name of Person in control of the land: Name of contact person for person in control of the land: Postal address: Telephone: E-mail:		
	Same as above Postal code: Cell: Fax: ( )		
<b>Duplicate this section where there is more than one Municipal Jurisdiction</b> Municipality in whose area of jurisdiction the proposed activity will fall: Contact person: Postal address: Telephone: E-mail:	George Municipality		
	Johannes Franciscus Koegelenberg		
	PO Box 19		
	George		Postal code: 6530
	044 801 9278		Cell:
	jkoegelenberg@george.gov.za		Fax: ( )



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

1.	Is the proposed development (please tick):	New		<b>Expansion</b>	<b>X</b>
2.	Is the proposed site(s) a brownfield or greenfield site? Please explain.				
The pump station is located on a brownfield site, however, the pipeline to be replaced crosses a greenfield site.					
3.	<b>For Linear activities or developments</b>				
3.1.	Provide the Farm(s)/Farm Portion(s)/Erf number(s) for all routes:				
<ul style="list-style-type: none"> <li>o Erf RE/13486, George</li> <li>o Erf RE/464, George</li> </ul>					
3.2.	Development footprint of the proposed development for all alternatives.	Footprint of Pipe Bridge and pipeline footprint =		Approx 330 m <sup>2</sup>	
		Footprint of proposed gravel access road =		725 m <sup>2</sup>	
		Temporary disturbance footprints and storage areas =		871 m <sup>2</sup> + 1748 m <sup>2</sup> + 687 m <sup>2</sup> + 668 m <sup>2</sup> = 3974 m <sup>2</sup>	
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.				
<p>Schaapkop Pump Station was constructed in 1986 and generally operates with vintage equipment from that era. The equipment is therefore more than 30 years old, far exceeding the expected design life of mechanical and electrical equipment. In addition, the pump station is faced with a capacity shortfall. The pump station is experiencing frequent and costly breakdowns, threatening the integrity of the sewage system. Therefore, the upgrade of the pump station and rising main is required.</p> <p>The rising main from Schaapkop Pump Station to the Outeniqua Wastewater Treatment Works consists of various sections of pipe. Most of the pipeline consist of an asbestos cement pipe with constant inside nominal diameter of 800 mm. A short section of pipe is made of asbestos cement pipe with constant inside nominal diameter of 500 mm, as well as steel pipe over a bridge (river crossing). The pipe bridge also serves as a crossing for the rising main from the Tamsui pumps station to the Schaapkop Pump Station.</p> <p>As part of the upgrade of the of Pump Station, the existing portion of 500 mm diameter rising main will be upgraded to an 800 mm diameter rising main.</p> <p>The first ±147 m of the existing rising main is of 500 mm diameter and includes a pipe bridge section. Record drawings indicate a 600 mm diameter end cap which is connected to the existing rising main with 800 mm × 600 mm steel tee. It is proposed that the new 800 mm diameter rising main be connected to the existing 800 mm diameter rising main using this existing end cap. The exact position and depth, as well as the condition of the end cap and tee piece will have to be confirmed during the Design Development Stage.</p>					

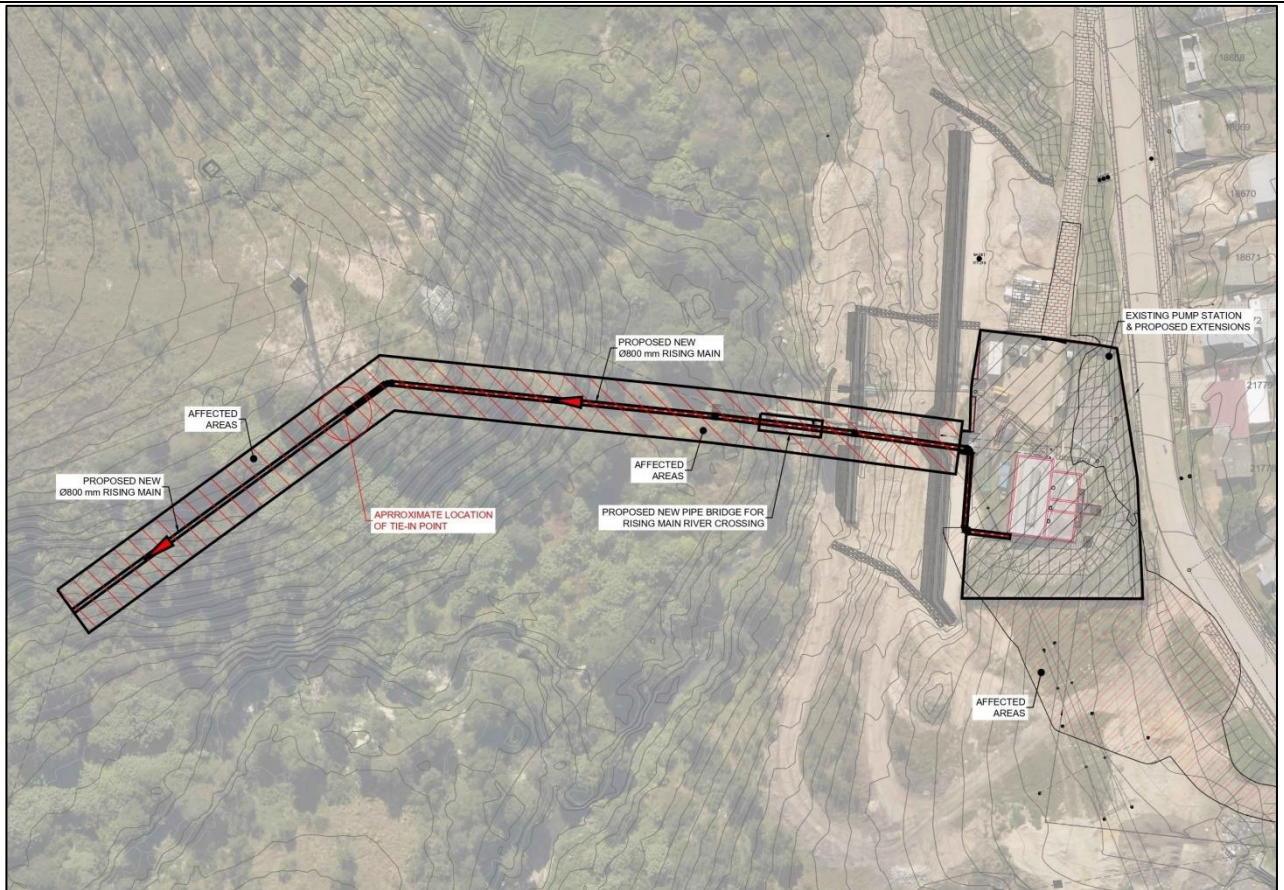


Figure 1: Schaapkop Rising Main Preliminary Route.

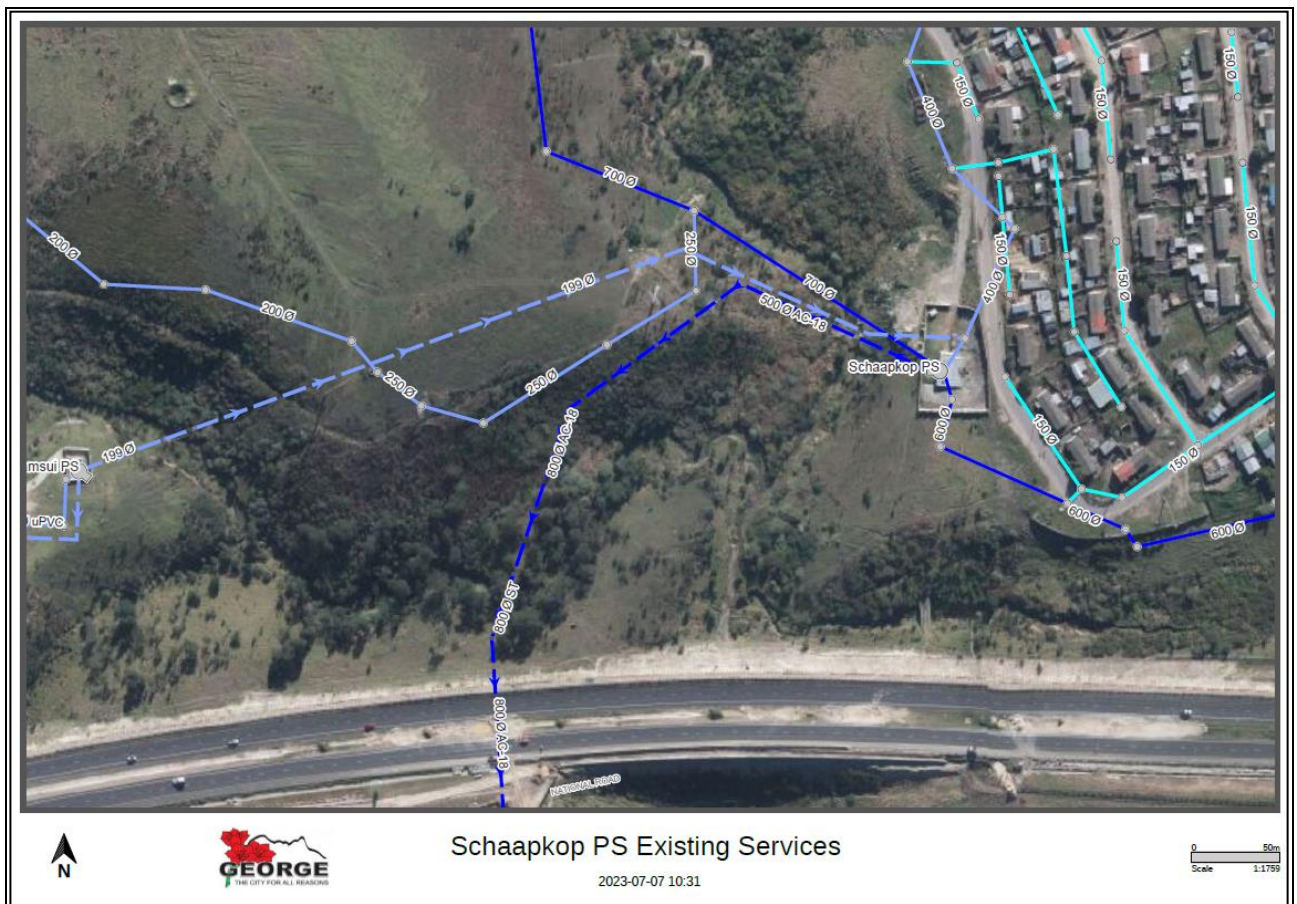
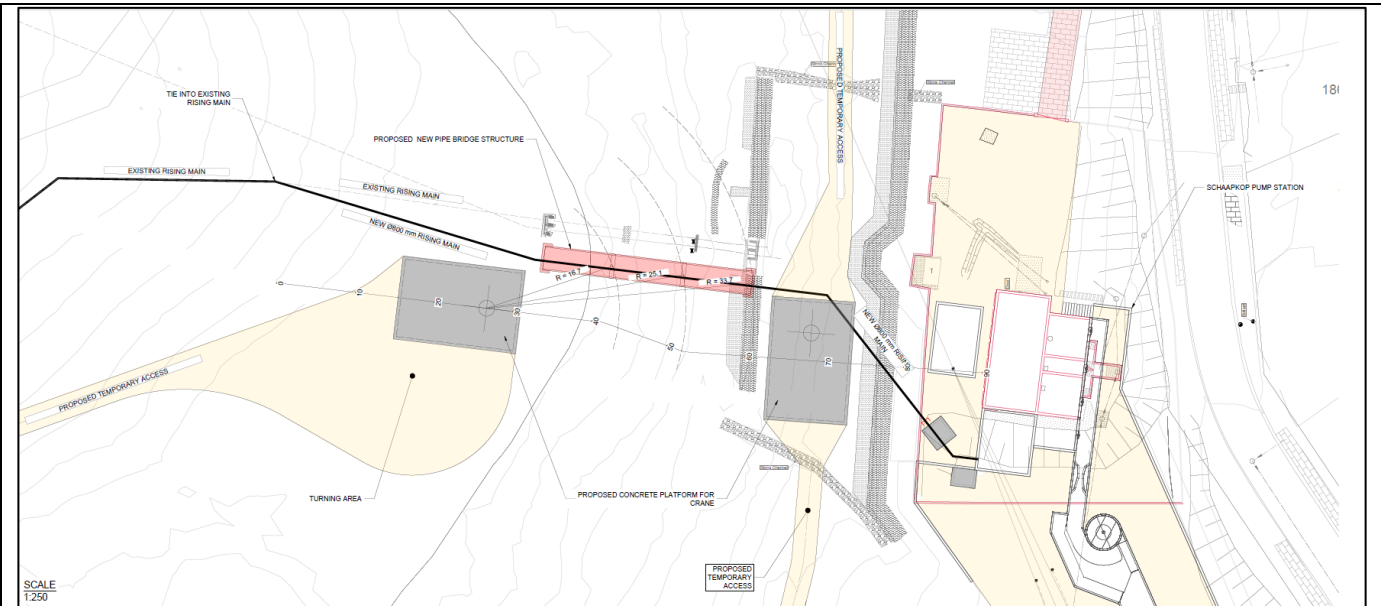


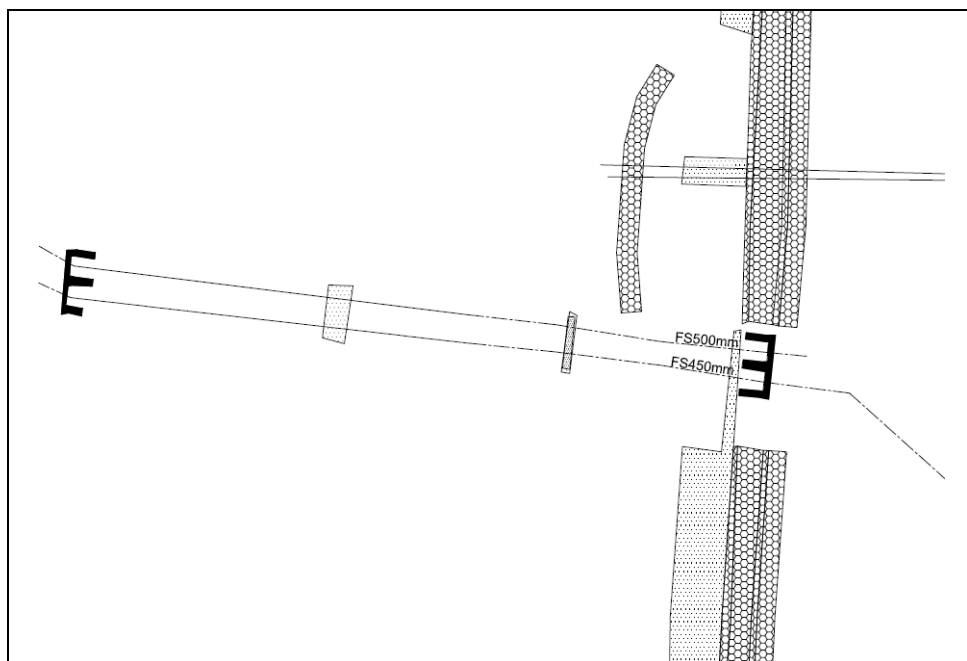
Figure 2: Existing Services Layout



**Figure 3: Site Development plan**

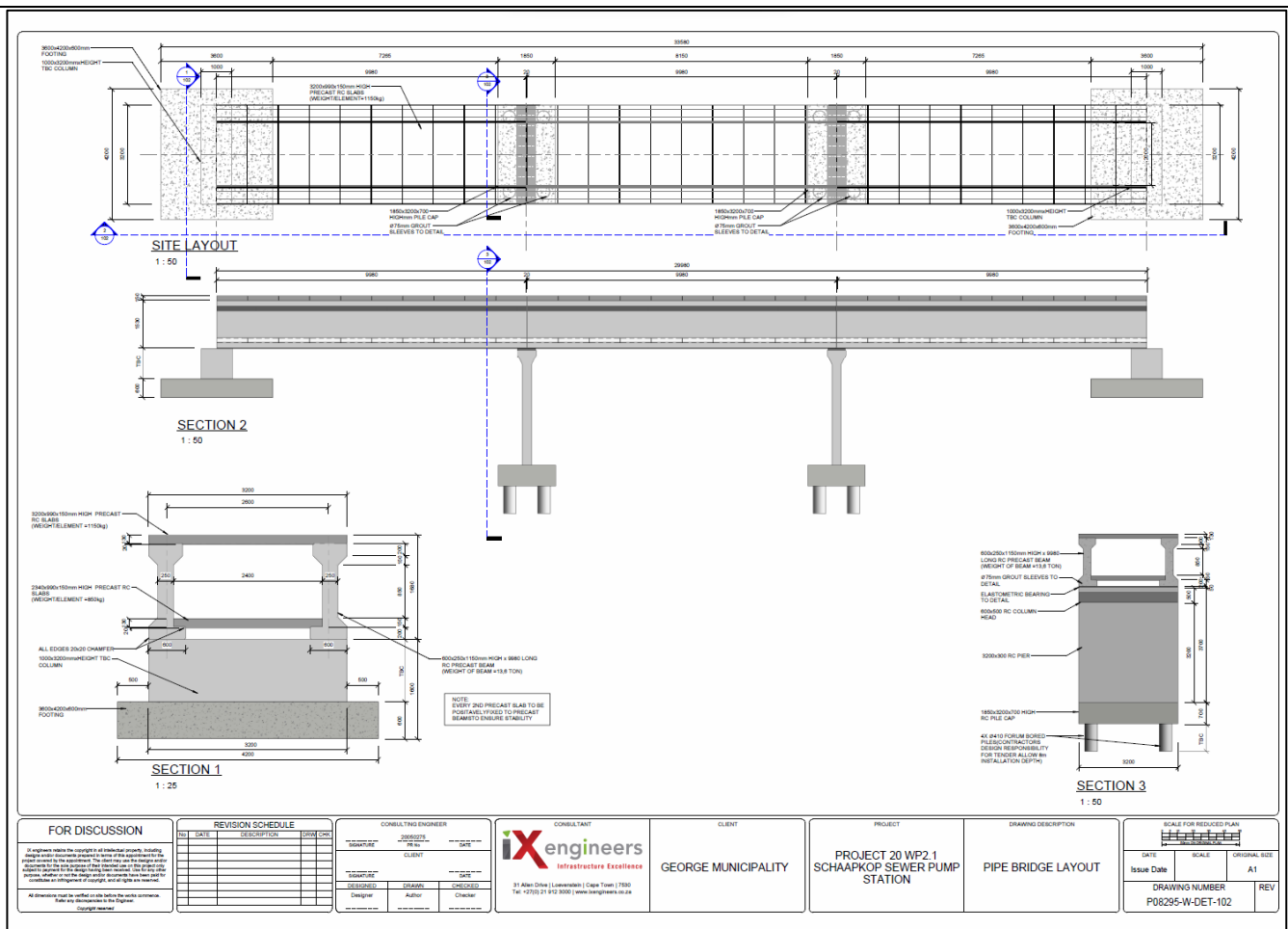
### Pipe Bridge

The current pipe bridge across the Schaapkop river accommodates the existing 500 mm diameter rising main as well as the 450 mm diameter syphon pipeline. The bridge comprises of anchor structures on the eastern and western banks with two support columns along the pipelines. Figure 4 below shows a schematic of the existing pipe bridge.



**Figure 4: Schematic of Existing Pipe Bridge**

It is proposed that a similar anchor structure be constructed on the western bank with provision for the new 800 mm diameter rising main. Furthermore, based on client preference, it is recommended that the pipework across the Schaapkop River will be enclosed in a concrete structure. Figure 5 illustrates the Layout of Pipe Bridge Anchor Structure on Eastern Bank. It is proposed that the same type of enclosure be implemented for the Schaapkop Rising Main Pipe Bridge. The base of the structure will tie into the base of the anchor structures. Final details of the Pipe Bridge including the enclosure will be finalised during the Design Development stage.



**Figure 5: Layout of Pipe Bridge.**

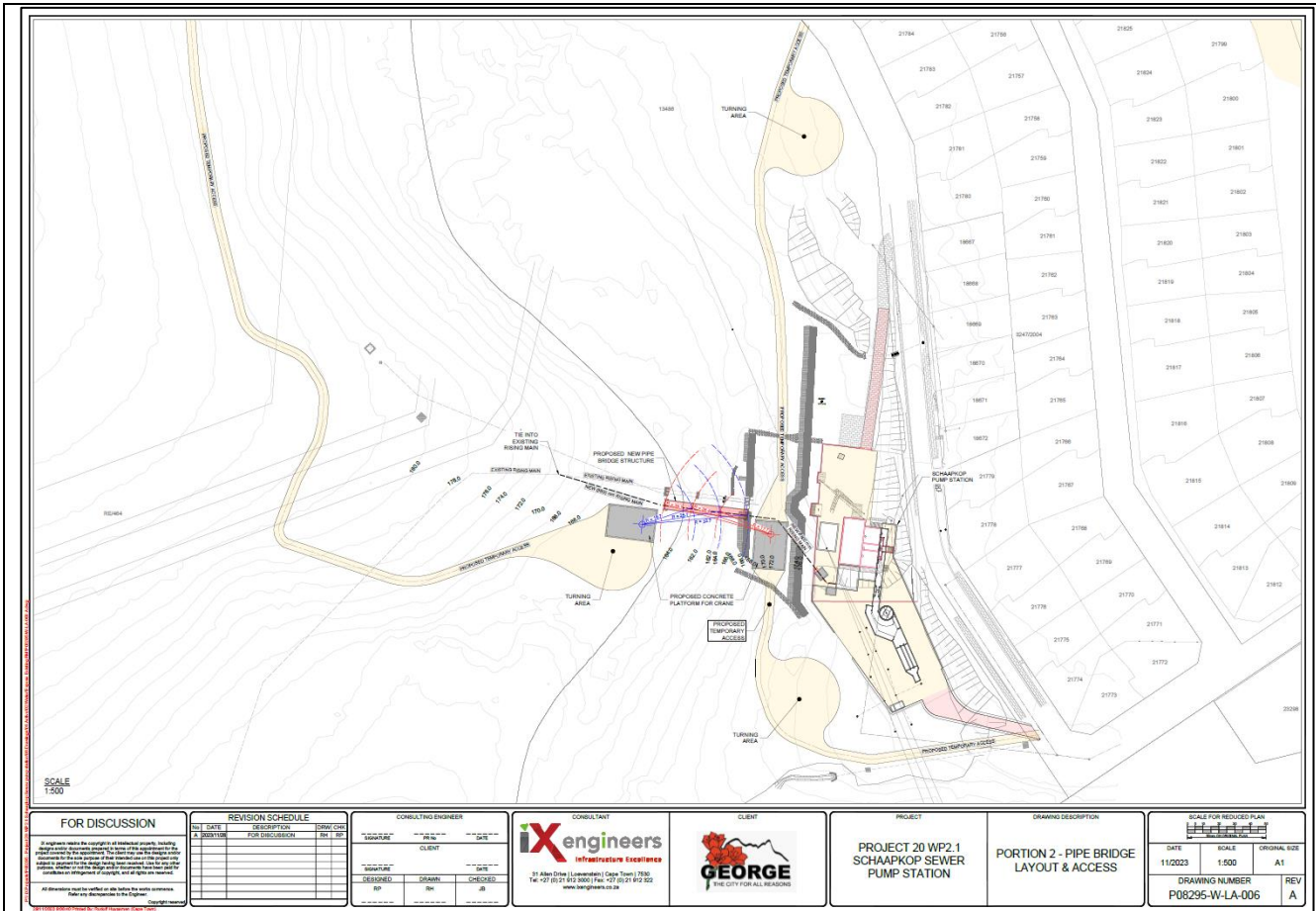
It is envisaged that an isolation valve be installed on the end cap of the existing pipework. The timing of the isolation valve installation will be crucial to avoid any spillage in the system. During this time, tanker trucks, surcharging lines, freeze isolation and over pumping will be considered. Once the valve is installed, the new rising main connection can be made without interfering with the existing pumping operations.

The proposed upgrading of a portion of the rising main is part of a phased approach to upgrade the Schaapkop Pump Station.

In sequence, the new pumps will be transferred to the new rising main, starting at new pump 4. The discharge pipework will be swung from the existing discharge connections, to the new rising main. As pump No.4 is transferred, pumps 1-3 will continue to pump through the existing rising main (blank flanges will be used to isolate open end of existing discharge manifold). After pump 4 is connected, pump 3 will be connected to the new rising main, while pumps 1 and 2 remain pumping through the existing rising main. Once pump 3 is connected, the new rising main will become operational. The isolation valve at the tie in point will be opened, and the existing rising main isolated on site (existing isolation valves to be confirmed). At this point, pipework for pumps 1 and 2 will be swung to the new discharge pipework and connected. Once the pumps are connected, the existing rising main will be decommissioned. The termination points of the existing rising main will be determined during Design Development stage.

**Site access and storage/laydown areas**

Site access is discussed in 3.4 below. Apart from the temporary site access on the eastern side of the river, a section of gravel road needs to be constructed on the western embankment from approximately next to the electrical pylon on the top of the hill down to the working area near the pipe bridge, as shown in Figure 6.



**Figure 6: Temporary work area and proposed gravel road down to the pipe bridge**

The existing pumpstation may be used to store materials and equipment within the yard, additional storage/laydown/work area is required on the western side of the river. Figure 6 shows the approximate working area near the pipe bridge.

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

From the East: The site is accessed from Bruce Street which is at the end of the Borchersds neighbourhood in George. The site will be accessed from either the north or the south of the pumpstation as shown in Figures 7 and 8.



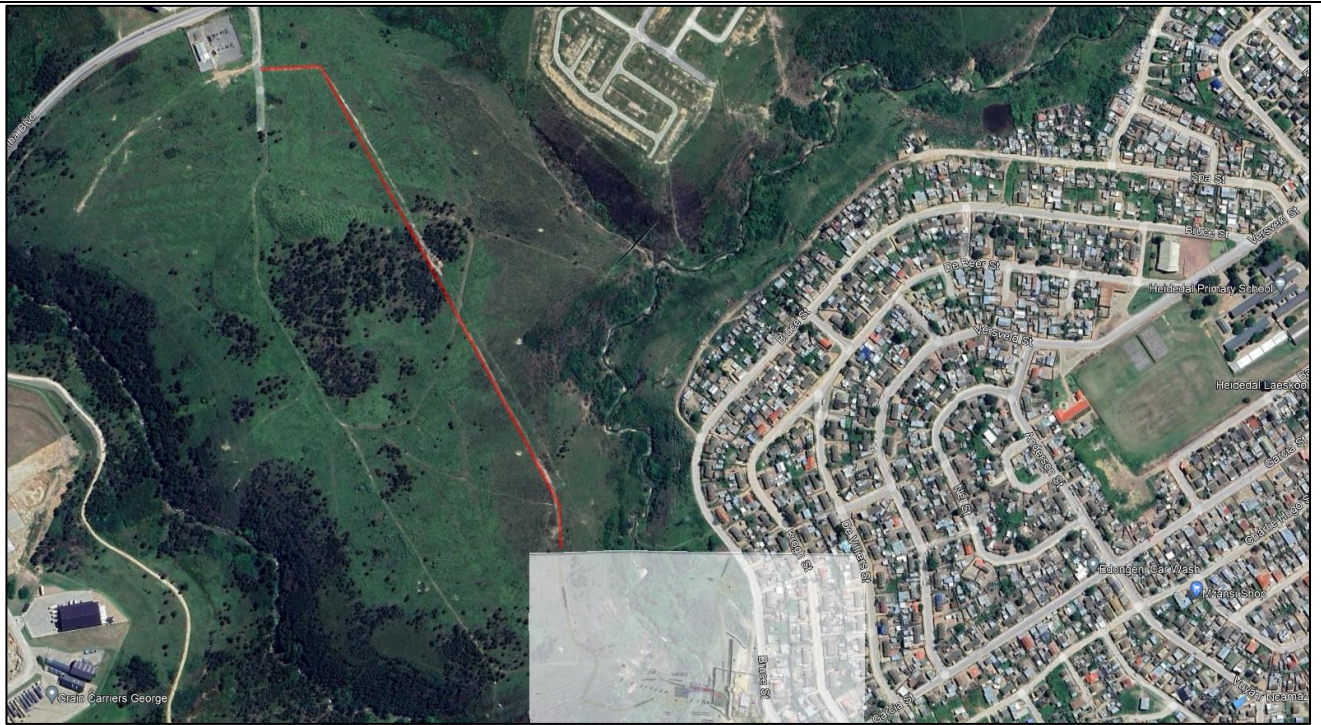
Figure 7: The eastern site is accessed from Bruce Street.



Figure 8: Eastern site access

Western site access

The site will be accessed from the west of the river from P.W. Botha Boulevard and run along a two-track road (existing), a section of new gravel road will have to be constructed down to the site as shown by the red line in Figure 9 and 10.



**Figure 9: Western Site access**

A section of gravel road needs to be constructed on the western embankment from approximately next to the electrical pylon on the top of the hill down to the working area near the pipe bridge, as shown in Figure 11 and highlighted by the red arrow.

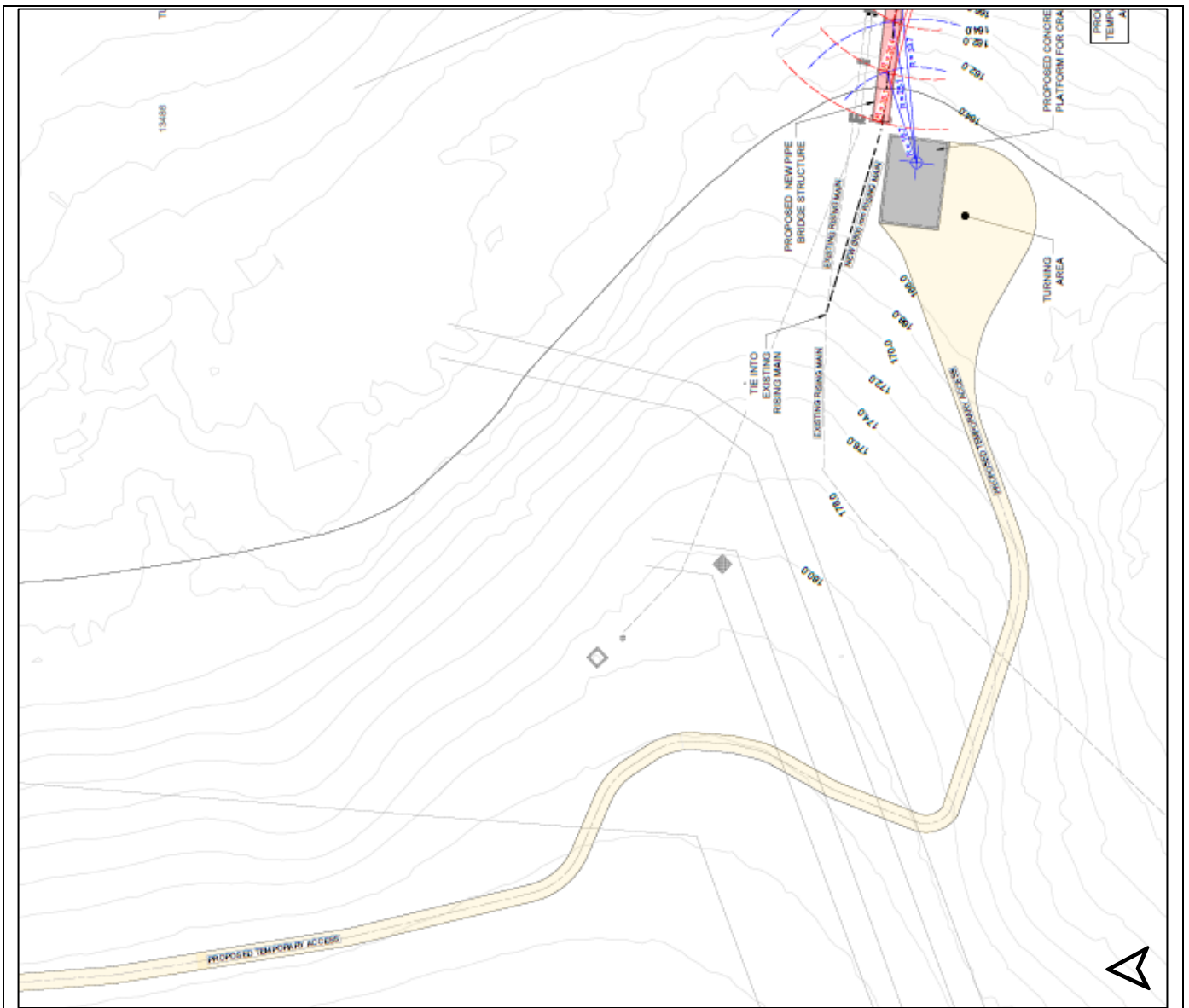


Figure 10: Western site access





**Figure 11: Temporary work areas and proposed gravel road down to the pipe bridge.**

The existing pumpstation may be used to store materials and equipment within the yard, additional storage/laydown/work area is required on the western side of the river. Figure 11 shows the approximate working area near the pipe bridge.

3.5.	SG Digit codes of the Farms/Farm Portions/ Erf numbers for all alternatives																					
	<b>ERF RE/13486</b>	C	0	2	7	0	0	0	2	0	0	0	1	3	4	8	6	0	0	0	0	0
	<b>ERF RE/464</b>	C	0	2	7	0	0	0	2	0	0	0	0	0	4	6	4	0	0	0	0	0
3.6.	<b>Starting point co-ordinates for all alternatives</b>																					
	Latitude (S)	33°	59'	38.67"																		
	Longitude (E)	22°	27'	48.08"																		
	<b>Middle point co-ordinates for all alternatives</b>																					
	Latitude (S)	33°	59'	38.28"																		
	Longitude (E)	22°	27'	44.25"																		
	<b>End point co-ordinates for all alternatives</b>																					
	Latitude (S)	33°	59'	39.61"																		
Longitude (E)	22°	27'	41.76"																			



**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.	<b>Other developments</b>			
4.1.	Property size(s) of all proposed site(s):			m <sup>2</sup>
4.2.	Developed footprint of the existing facility and associated infrastructure (if applicable):			m <sup>2</sup>
4.3.	Development footprint of the proposed development and associated infrastructure size(s) for all alternatives:			m <sup>2</sup>
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).			
4.5.	Indicate how access to the proposed site(s) will be obtained for all alternatives.			
4.6.	SG-Digit code(s) of the proposed site(s) for all alternatives:			
4.7.	Coordinates of the proposed site(s) for all alternatives:			
	-Latitude (S)			
	-Longitude (E)			

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

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

Has exemption been applied for in terms of the NEMA and the NEMA EIA Regulations. If yes, include a copy of the exemption notice in Appendix E18.	YES	NO
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### 2. Is the following legislation applicable to the proposed activity or development.

The National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) ("ICMA"). If yes, attach a copy of the comment from the relevant competent authority as Appendix E4 and the pre-approval for the reclamation of land as Appendix E19.	YES	NO
The National Heritage Resources Act, 1999 (Act No. 25 of 1999) ("NHRA"). If yes, attach a copy of the comment from Heritage Western Cape 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.
<ul style="list-style-type: none"> <li>Amended Environmental Impact Assessment Regulations, GN No. R. 324 – 327 (7 April 2017)</li> <li>The Constitution of the Republic of South Africa, 1996 (Act 108 of 1996)</li> <li>Spatial Planning and Land Use Management Act, No. 16 of 2013 (SPLUMA)</li> <li>Infrastructure Development Act, 2014 (Act No. 23 of 2014)</li> <li>The National Environmental Management Laws Amendment Act, 2022</li> </ul>

### 4. Policies

Explain which policies were considered and how the proposed activity or development complies and responds to these policies.
No Policies

### 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.
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 review and integration of specialist input into this Basic Assessment Report
External Guideline: Generic Water Use Authorization Application Process (2007)	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.
Guideline on Public Participation (2013)	Guideline considered in the undertaking of the public participation for the proposed development. All relevant provisions contained in the guideline were adhered to in the basic assessment process as appropriate, except where an exemption/ deviation has been granted by the Competent Authority.
Guideline on Alternatives (2013)	Guideline considered when identifying and evaluating possible alternatives for the proposed development. Alternatives that were considered in the impact assessment process are reported on in this Basic Assessment Report (see section E)

## 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 specialist studies were undertaken for this proposal:

No.	Specialist Assessment	Assessment Protocol
1.	Terrestrial Biodiversity Impact Assessment	Terrestrial
2.	Aquatic Biodiversity Impact Assessment	Aquatic
3.	Plant Species Assessment	Terrestrial Plant Species
4.	Animal Species Assessment	Terrestrial Animal Species

The corresponding assessment protocols were used by the specialists to compile and structure their reports.

## SECTION D: APPLICABLE LISTED ACTIVITIES

List the applicable activities in terms of the NEMA EIA Regulations

Activity No(s):	Provide the relevant <b>Basic Assessment Activity(ies)</b> as set out in <b>Listing Notice 1</b>	Describe the portion of the proposed development to which the applicable listed activity relates.
19	<p><b>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.</b></p> <p>but excluding where such infilling, depositing, dredging, excavation, removal or moving—</p> <p>(a) will occur behind a development setback;</p> <p>(b) is for maintenance purposes undertaken in accordance with a maintenance management plan;</p> <p>(c) falls within the ambit of activity 21 in this Notice, in which case that activity applies;</p> <p>(d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or</p> <p>(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.</p>	<p>The construction of the Pipe Bridge piers within the river will trigger this Activity.</p>
46	<p><b>The expansion and related operation of infrastructure for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes where the existing infrastructure—</b></p> <p><b>i) has an internal diameter of 0,36 metres or more; or</b></p> <p><b>ii) has a peak throughput of 120 litres per second or more; and</b></p> <p>(a) where the facility or infrastructure is expanded by more than 1 000 metres in length; or</p> <p><b>(b) where the throughput capacity of the facility or infrastructure will be increased by 10% or more;</b></p> <p>excluding where such expansion—</p> <p>(aa) relates to the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes within a road reserve or railway line reserve; or</p> <p>(bb) will occur within an urban area.</p>	<p>The existing rising main that conveys flow from the Schaapkop Pump Station to the Outeniqua Wastewater Treatment Works is comprised of a portion of 500 mm diameter pipe and it will be upgraded to an 800mm diameter rising main. This activity is therefore triggered by the proposal.</p>
48	<p><b>The expansion of—</b></p> <p><b>(i) infrastructure or structures where the physical footprint is expanded by 100 square metres or more; or</b></p> <p>(ii) dams or weirs, where the dam or weir, including infrastructure and water surface area, is expanded by 100 square metres or more;</p> <p><b>where such expansion occurs—</b></p> <p><b>(a) within a watercourse;</b></p> <p>(b) in front of a development setback; or</p> <p><b>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;</b></p> <p>excluding—</p> <p>(aa) the expansion of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;</p> <p>(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;</p>	<p>The rising main crosses a tributary of the Schaapkop River over a pipe bridge and from there the 32 m section of the pipeline is within 32 m of the river. This activity is therefore triggered by the proposal.</p>

	(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 <b>Basic Assessment Activity(ies)</b> as set out in <b>Listing Notice 3</b>	Describe the portion of the proposed development to which the applicable listed activity relates.
4	<b>The development of a road wider than 4 metres with a reserve less than 13,5 metres.</b> <b>i. Western Cape</b> <b>i. Areas zoned for use as public open space or equivalent zoning;</b> <b>ii. Areas outside urban areas;</b> <b>(aa) Areas containing indigenous vegetation;</b> (bb) Areas on the estuary side of the development setback line or in an estuarine functional zone where no such setback line has been determined; or iii. Inside urban areas: (aa) Areas zoned for conservation use; or (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority.	A gravel road will be constructed on the western side of the river to access the site which will include stormwater control structures such as berms and grass block / gabion stormwater energy dissipating structures.
12	<b>The clearance of an area of 300 square metres or more of indigenous vegetation</b> except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. <b>i. Western Cape</b> <b>ii. 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;</b> iii. 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 or erven in urban areas; <b>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;</b> or v. On land designated for protection or conservation purposes in an Environmental Management Framework adopted in the prescribed manner, or a Spatial Development Framework adopted by the MEC or Minister.	An area of more than 300 m <sup>2</sup> will have to be cleared during the replacement of the 500 mm pipe with an 800 mm pipe.  Garden Route Granite Fynbos is Critically Endangered. This activity is therefore triggered.
23	<b>The expansion of—</b> (i) dams or weirs where the dam or weir is expanded by 10 square metres or more; or <b>(ii) infrastructure or structures where the physical footprint is expanded by 10 square metres or more; where such expansion occurs—</b> <b>(a) within a watercourse;</b> (b) in front of a development setback adopted in the prescribed manner; or <b>(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;</b> excluding the expansion of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour. <b>i. Western Cape</b> <b>i. Outside urban areas:</b> (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 footprint will be expanded by more than 10 m <sup>2</sup> and crosses a tributary of the Schaapkop river.  DEA&DP has not adopted critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans as triggers. <u>This activity is therefore not triggered.</u>

**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 <b>Basic Assessment Activity(ies)</b> as set out in <b>Category A</b>	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 <b>Listed Activity(ies)</b>	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.
<p>The preferred and only alternative is to upgrade the existing rising main. As part of the upgrade of the of Pump Station, the existing portion of 500 mm diameter rising main will be upgraded to an 800 mm diameter rising main.</p> <p>The first ±147 m of the existing rising main is of 500 mm diameter and includes a pipe bridge section. Record drawings indicate a 600 mm diameter end cap which is connected to the existing rising main with 800 mm × 600 mm steel tee. It is proposed that the new 800 mm diameter rising main be connected to the existing 800 mm diameter rising main using this existing end cap.</p> <p>Please refer to Section B, point 3.3 for more details on the proposed upgrade of the rising main.</p>	
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.
<p>Schaapkop Pump Station was constructed in 1986 and has thus been at this site for more than 35 years, Additionally the proposal is to replace the existing section of pipeline with a new pipeline of a larger diameter.</p>	
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.
<p>No potential conflict. The development does not entail a new development on the site – only the upgrade of an existing pump station and rising main.</p>	
4.	Explain how the proposed development will be in line with the following?
4.1	The Provincial Spatial Development Framework.
<p>The development is the upgrade and expansion of an existing sewage pump station and rising main.</p> <p>Schaapkop Pump Station was constructed in 1986 and generally operates with vintage equipment from that era. The equipment is therefore more than 35 years old, far exceeding the expected design life of mechanical and electrical equipment. In addition, the pump station is faced with a capacity shortfall. The pump station is experiencing frequent and costly breakdowns, threatening the integrity of the sewage system. Therefore, the upgrade of the pump station and rising main is required.</p>	
4.2	The Integrated Development Plan of the local municipality.
<p>The development is the upgrade of an existing sewage rising main.</p>	
<p><b>Strategic Objective 3: Affordable Quality Services</b></p>	

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/PREDETERMINED OBJECTIVES (PDOS)
<b>WASTEWATER MANAGEMENT</b>	<ul style="list-style-type: none"> <li>a) To provide and maintain safe and sustainable sanitation management and infrastructure</li> <li>b) Accelerated delivery in addressing sanitation backlogs</li> <li>c) To provide basic services to informal settlements that comply with the minimum standards</li> <li>d) To enhance the quality of sanitation</li> </ul>
<b>WATER</b>	<ul style="list-style-type: none"> <li>a) To provide world-class water services in George to promote development and fulfil basic needs</li> <li>b) To provide basic services to informal settlements that comply with the minimum standards</li> <li>c) To improve service delivery practices</li> </ul>

4.3. The Spatial Development Framework of the local municipality.

The development is the upgrade and expansion of an existing sewage pump station and rising main. The George SDF is therefore not applicable to the proposed upgrades.

4.4. The Environmental Management Framework applicable to the area.

No EMF for George.

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

The **terrestrial biodiversity specialist** described the biodiversity of the site as follows:

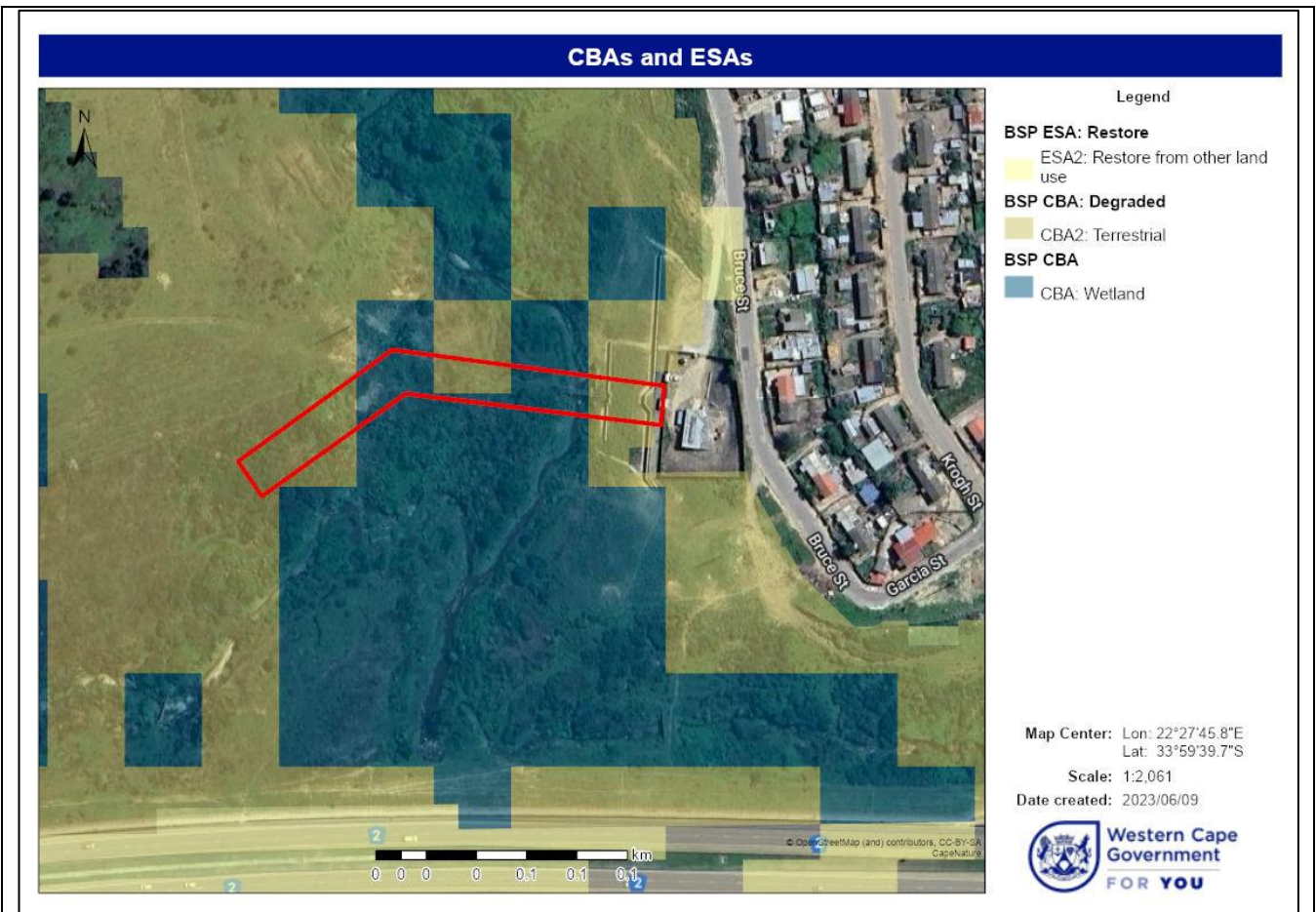
The project footprint currently overlaps with areas regarded as aquatic Critical Biodiversity Area (CBA) in the central and eastern sections, with the remainder of the footprint intersecting degraded CBA2. Following the ground-truthing phase however, it is evident that faunal habitats on the site exist in a degraded state which supports a relatively impaired faunal and avifaunal diversity, some intact predator-prey dynamics, but overall altered ecosystem dynamics with no resident or potential subpopulations of terrestrial faunal or avifaunal Species of Conservation Concern (SCC). To this end, the site cannot even be regarded as a degraded CBA (defined as: “Areas in a degraded or secondary condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure”), and will likely continue to degrade within the next few years, following reoccurring impacts from the adjacent Lawaaiikamp suburb. To this end, the management objective for a CBA2 which is to “Maintain in a natural or near-natural state, with no further loss of habitat. Degraded areas should be rehabilitated. Only low-impact, biodiversity-sensitive land-uses are appropriate.” is not applicable in the context of the current project footprint, and the planned activities will be able to proceed without having highly negative impacts on the study area landscape from a terrestrial biodiversity perspective.

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

The Western Cape Biodiversity Spatial Plan (WCBSP) is the product of a systematic biodiversity planning assessment that delineates Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs) which require safeguarding to ensure the continued existence and functioning of species and ecosystems, including the delivery of ecosystem services, across terrestrial and freshwater realms. These spatial priorities are used to inform sustainable development in the Western Cape Province.

Figure 12 below indicates the mapped CBA 1 & 2 areas across the site. It shows that the pipeline route crosses over Wetland CBA 1 and Terrestrial CBA 2.





**Figure 12: Biodiversity Overlay Map for the site and surrounding area.**

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.
No changes to the screening report.	
9.	Explain how the proposed development will optimise vacant land available within an urban area.
N/A - The site is not vacant land. Upgrades are proposed to the existing facility.	
10.	Explain how the proposed development will optimise the use of existing resources and infrastructure.
The site has existing resources and infrastructure which will be upgraded.	
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 – it is proposed to upgrade an existing pipeline (service).	
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.

In order to properly interpret the EIA Regulations’ requirement to consider “need and desirability”, it is necessary to turn to the principles contained in NEMA, which serve as a guide for the interpretation, administration and implementation of NEMA and the EIA Regulations. With regard to the issue of “need”, it is important to note that this “need” is not the same as the “general purpose and requirements” of the activity. While the “general purpose and requirements” of the activity might to some extent relate to the specific requirements, intentions and reasons that the applicant has for

proposing the specific activity, the "need" relates to the interests and needs of the broader public. In this regard the NEMA principles specifically inter alia require that environmental management must:

- "place people and their needs at the forefront of its concern" and equitably serve their interests;
- "be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option;
- pursue environmental justice "so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person";
- ensure that decisions take "into account the interests, needs and values of all interested and affected parties"; and
- ensure that the environment is "held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage".

### **Community Wellbeing – Clean Water and Sanitation**

Sewer systems are essential to the wellbeing of a community. They help to transport wastewater filled with bacteria out of the area and to a place for treatment, so that clean water can be safely distributed back into the environment. But there's a lot that goes into maintaining this essential infrastructure, and every section of it requires routine inspections maintenance, upgrades and upkeep to protect the community it serves.

## **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.

Appendix E22

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?	<b>YES</b>	NO
2.2.	Provide the name and/or company who conducted the specialist study.		
Debbie Fordham of Upstream Consulting (Appendix G2)			
2.3.	Explain how the presence of watercourse(s) and/or wetlands on the property(ies) has influenced your proposed development.		
<p>(Source: AQUATIC BIODIVERSITY IMPACT ASSESSMENT for the proposed UPGRADE OF THE SCHAAPKOP SEWER RISING MAIN ON REMAINDER OF ERF 464 AND ERF 13486, GEORGE, dated 17 October 2023, Prepared by Debbie Fordham of Upstream Consulting. (Appendix G2)).</p> <p><b>Catchment Characteristics</b></p> <p>The study area is situated within quaternary catchment K30C of the Gouritz Water Management Area (Figure 13). The site falls within the Southern Coastal Belt Ecoregion which is described by Kleynhans et al. (2005) as an area of hills and mountains with moderate to high relief and surrounding plains. The area is characterised by gently undulating topography on the coastal plateau between the Outeniqua Mountains and the ocean. The largest river in this quaternary catchment is the Kaaimans River to the east. The pipeline upgrades will be located across the Skaapkop River, which originates on the plateau in George, and flows for a relatively short length, directly into the Indian Ocean. According to the Freshwater Biodiversity Information System (FBIS), the site is situated in the non-perennial, Upper Foothills geomorphological zone of the river profile (DWAF, 2006).</p> <p><b>Strategic Water Source Area</b></p> <p>The study area falls within the Outeniqua Strategic Water Source Area for surface water (Le Maitre et al. 2018). Refer to Figure 13. A Strategic Water Source Areas (SWSA) is where the water that is supplied is considered to be of national importance for water security. Surface water SWSAs are found in areas with high rainfall and produce most of the runoff.</p> <p><b>Conservation Priority Areas</b></p> <p>Figure 14 shows that the pipeline crossing is located within CBA 1 wetland habitat and is thus a biodiversity priority area for conservation. The given reasons for this classification are that it is within the Bontebok Extended Distribution Range and the South Eastern Coastal Belt watercourse protection area. Critical Biodiversity Areas (CBA's) are required to meet biodiversity targets. According to the WCBSP, these areas have high biodiversity and ecological value and therefore must be kept in a natural state without further loss of habitat or species.</p>			

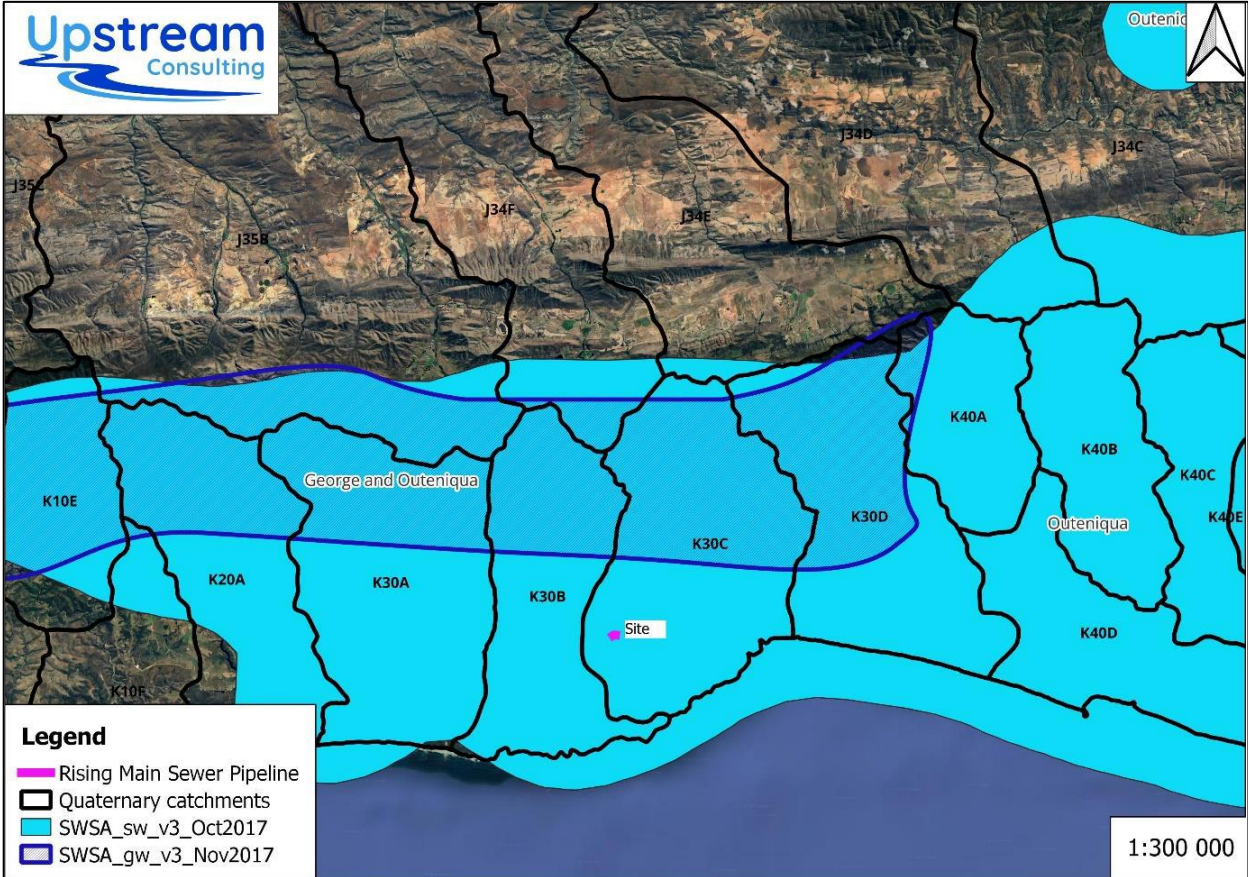


Figure 13: Map of the site in relation to quaternary catchment K30C and Strategic Water Source Areas.

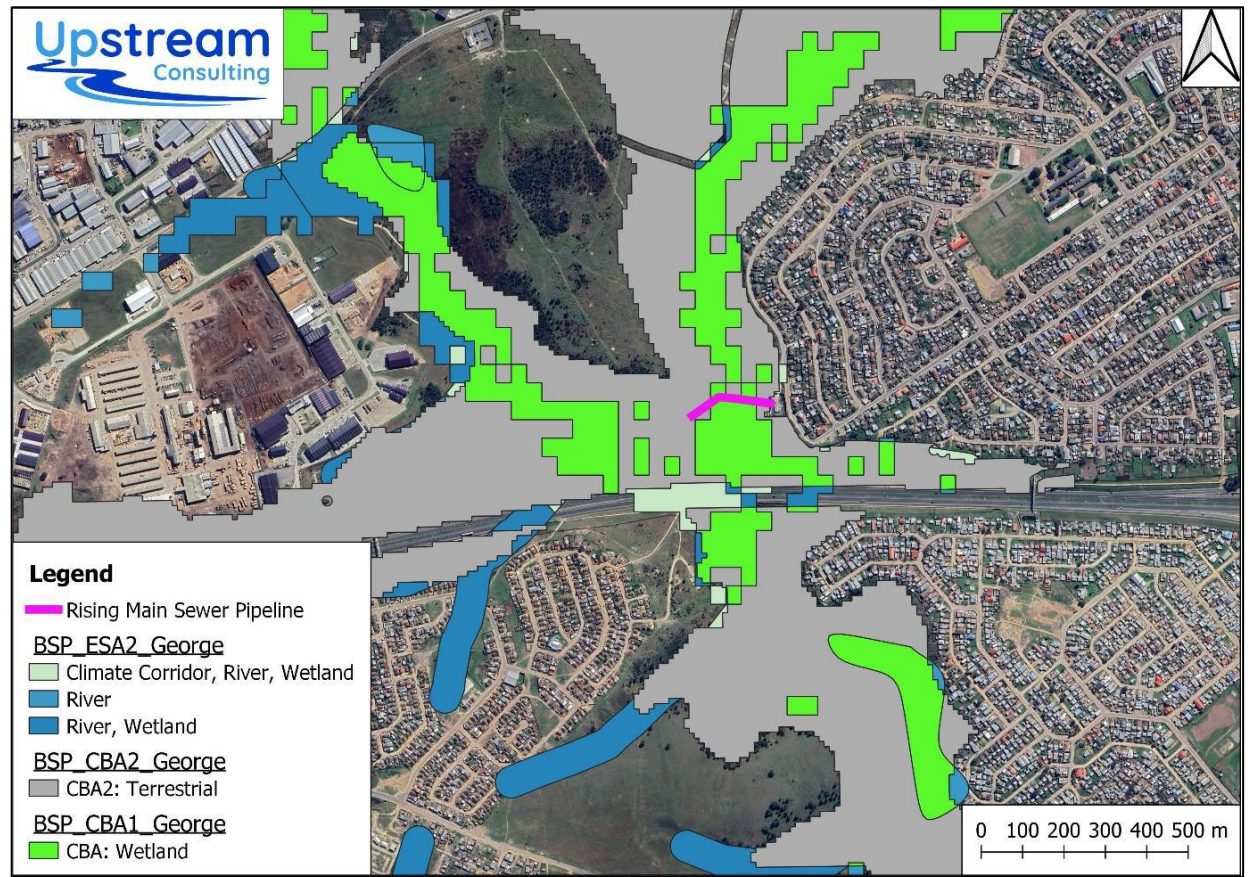


Figure 14: Map of the site in relation to aquatic priority areas identified in the WCBSA (2017).

No endemic or conservation worthy aquatic species (Listed or Protected) were observed within the site. Due to the highly modified condition of the area, and high levels of water pollution, it is likely that any aquatic species are disturbance-tolerant species with a low level of biodiversity.

### Identified Aquatic Habitats

Following the contextualisation of the study area with the available desktop data, a site visit was conducted to groundtruth the findings and delineate the aquatic habitat and map it within the 500m radius of the disturbance area. The additional information collected in the field allowed for the development of an improved baseline aquatic habitat delineation map (Figure 15).

Four watercourses were identified and mapped within a 500m radius of the proposed pipeline upgrade route. For reference purposes, the identified HGM units were named as follows:

- HGM1 – Skaapkop River
- HGM2 – Tributary river
- HGM3 – Seep
- HGM4 – Seep

Although the national wetland map shows the site as being within channelled valley bottom wetland habitat, the HGM 1 watercourse is characteristic of a riparian system (the Skaapkop River). There is wetland habitat upstream of the site, but in the reach where the pipeline crosses, the valley steepens and there is a distinct channel with concentrated flows, within well-defined riverbanks. No wetland characteristics were evidenced within the proposed construction zone. Additionally, the HGM3 and HGM4 seep wetlands were not identified by the NWM5. Therefore, there are slight discrepancies between the national desktop wetland data and the in-field assessment findings.

Figure 15 shows the above-listed watercourses in relation to the pipeline and 500m radius study area.

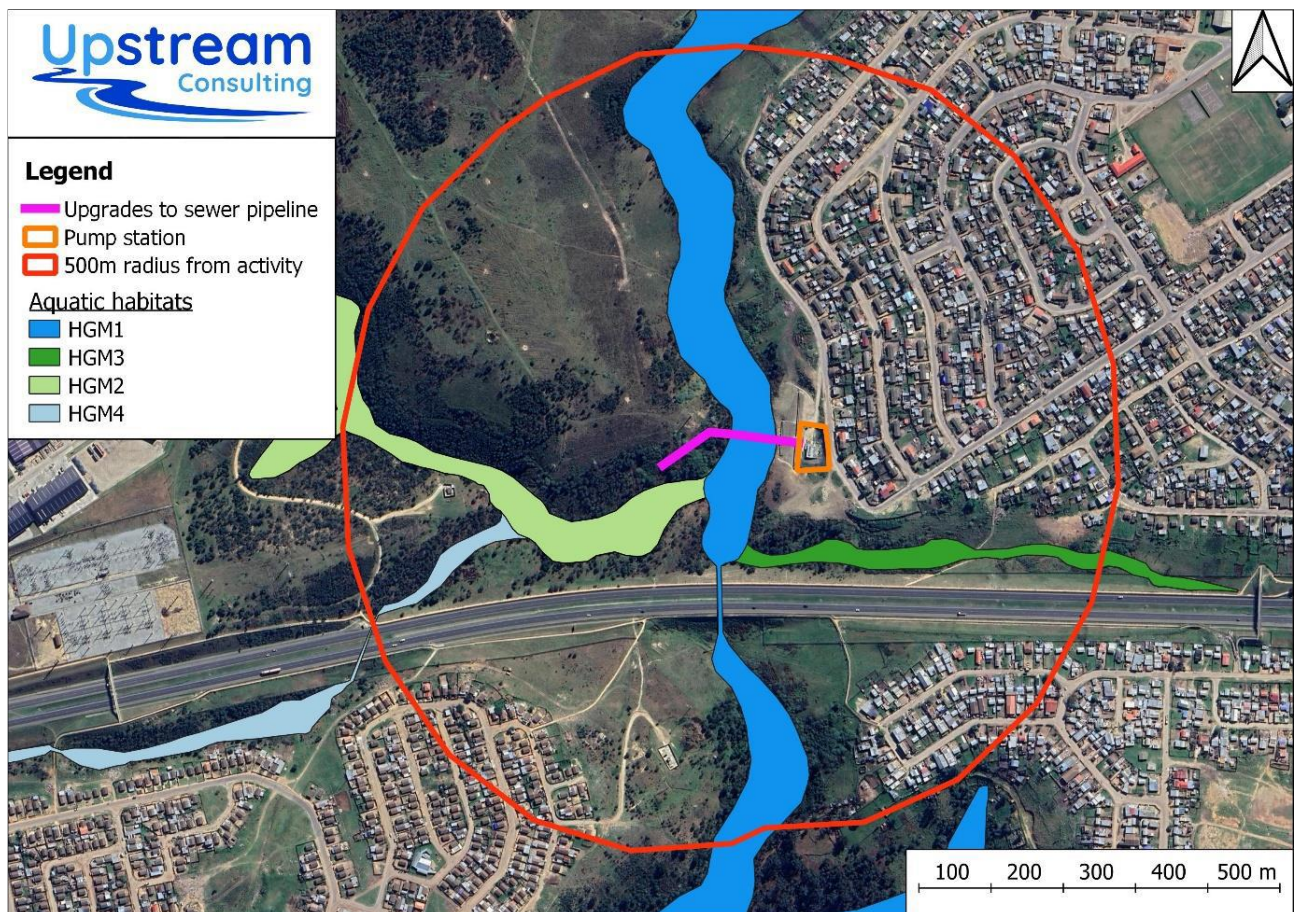


Figure 15: Map of the delineated aquatic habitat within the 500m radius study area.

## Screening / Risk Assessment

Subsequent screening provided an indication of which of these systems may potentially be impacted upon by the project and required further assessment. There are a number of factors which influence the level of impact, such as type of system, position of the system in relation to the project and position the system is located in the landscape. It was determined that the Skaapkop River (HGM1) will be directly impacted by the proposed pipeline upgrades, and that the tributary (HGM2) may be indirectly disturbed by earthworks upslope during construction. Refer to Figure 16 below.

Therefore, the affected reach of the Skaapkop River, and the area of tributary confluence, was assessed in detail. The two seep wetlands (HGM3 & HGM4) will not be impacted by the project and were not assessed further.



**Figure 16: Photograph showing the approximate pipeline route requiring upgrades in yellow.**

### Description of Affected Aquatic Habitat

The Skaapkop River is a perennial upper foothills system within the South Eastern Coastal Belt. It has a relatively small catchment, originating on the coastal plateau, and flowing a short distance before entering the Indian Ocean. The slightly sinuous channel is contained in a narrow valley which steepens rapidly near the coastline. In the reach assessed (HGM1), the river has a sandy channel with evidence of deposition. During low flows the active channel can be reduced to 1m in width and 30cm in depth. The fynbos thicket vegetation is heavily infested with alien invasive plant species. The dominant plant species in the riparian area and banks include *Solanum mauritianum* (alien), *Ricinus communis* (alien), *Pteridium aquilinum*, and *Pennisetum clandestinum* (alien).

Development in the catchment and along the banks has significantly modified the river regime. The system has been subjected to riparian habitat loss and disturbance due to urban encroachment, erosion and sedimentation from catchment land surface changes, water pollution and channel straightening. Sewage overflows from the pump station, as well as a stormwater pipeline outlet, have caused significant water pollution (Figure 17). There is an existing pipeline crossing the river from the Skaapkop pump station and the upgrades will follow the same route. The impacts associated with the project will be very similar to those which occurred during the construction of the existing infrastructure and are unlikely to cause any further deterioration of ecological condition.



**Figure 17: Photograph showing the degraded state of the river system, with erosion and deposition clearly evident, alien invasive plants, and indicating the pipeline crossing and stormwater outlet.**

**Present Ecological State**

The Present Ecological State (PES) refers to the health or integrity of rivers and includes both instream habitat as well as riparian habitat adjacent to the main channel. The rapid Index of Habitat Integrity (IHI) tool (Kleynhans, 1996) was used to determine river PES by comparing the current state of the in-stream and riparian habitats (with existing impacts) relative to the estimated reference state without anthropogenic impacts.

As discussed in the section above, the reach of the river is severely degraded and polluted. The Skaapkop River (HGM1) falls within the 'D' Ecological Category for PES (Table 2). It has deviated significantly from the estimated reference state.

Resource	IHI Score	Class	Rationale
HGM 1 – Skaapkop River	53,33	<b>D</b>	The system has been largely impacted by water quality, flow, and bank condition modifications. The river is confined within the urban environment and receives contaminated stormwater and sewage overflows. The riparian zone has been subjected to habitat loss due to clearance and a high level of alien plant infestation. A large loss of natural habitat, biota and basic ecosystem functions has occurred.



## Functional assessment

The assessment showed that the reach of the river assessed provides a low level of direct provisioning services to society (Table 1), largely due to the modified condition, but maintains a Moderate EIS.

**Table 1: Ecosystems Services summary for the affected river reach**

ECOSYSTEM SERVICE		Supply	Demand	Importance Score	Importance
REGULATING AND SUPPORTING SERVICES	Flood attenuation	1,1	0,3	0,0	Very Low
	Sediment trapping	1,0	2,3	0,6	Very Low
	Erosion control	1,5	1,1	0,5	Very Low
	Phosphate assimilation	1,0	0,8	0,0	Very Low
	Nitrate assimilation	1,0	1,5	0,3	Very Low
	Toxicant assimilation	1,0	1,5	0,3	Very Low
	Carbon storage	1,0	0,0	0,0	Very Low
	Biodiversity maintenance	1,7	2,5	1,5	Moderately Low
PROVISIONING SERVICES	Water for human use	1,6	0,0	0,1	Very Low
	Harvestable resources	1,0	0,0	0,0	Very Low
	Food for livestock	2,0	0,0	0,5	Very Low
	Cultivated foods	2,8	0,0	1,3	Low
CULTURAL SERVICES	Tourism and Recreation	0,8	0,0	0,0	Very Low
	Education and Research	1,5	0,0	0,0	Very Low
	Cultural and Spiritual	1,0	0,0	0,0	Very Low

## Ecological importance and sensitivity

The Ecological Importance and Sensitivity (EIS) of riparian areas is a representation of the importance of the aquatic resource for the maintenance of biological diversity and ecological functioning, whilst Ecological Sensitivity (or fragility) refers to a system's ability to resist disturbance and its capability to recover from disturbance (Kleynhans & Louw, 2007). The EIS category of the reach assessed was determined as being 'Moderate' (C category).

No endemic or conservation worthy species (Listed or Protected) were observed or have been recorded within the reach of river. The river is heavily impacted by urban development, water pollution, and invasive plant species. However, it is a corridor between the Outeniqua Mountains and the ocean and provides a link between upstream and downstream biological functioning. Although much of the lateral connectivity has been damaged, the longitudinal connectivity remains.

## Aquatic Buffer Zones

An aquatic impact buffer zone is defined as a zone of vegetated land designed and managed so that sediment and pollutant transport carried from source areas via diffuse surface runoff is reduced to acceptable levels (Macfarlane and Bredin, 2016). Aquatic buffer zones are designed to act as barriers between human activities and sensitive water resources in order to protect them from adverse negative impacts. Buffer zones associated with water resources have been shown to perform a wide range of functions and have therefore been adopted as a standard measure to protect water resources and associated biodiversity. Currently there are no formalised riverine or wetland buffer distances provided by the provincial authorities and as such the buffer model as described Macfarlane & Bredin (2017) for wetlands and rivers was used. These buffer models are based on the

condition of the waterbody, the state of the remainder of the site, coupled to the type of activity, as well as the proposed alteration of hydrological flows.

In this case, the construction activities will need to encroach into the riparian habitat and any buffer zone surrounding the pipeline upgrade route. However, areas outside of the proposed construction disturbance area should be adopted as No-Go areas. No activities, access roads, turning areas, etc. must encroach into the No-Go areas shown in Figure 18. These No-Go boundaries must be demarcated during site preparation.

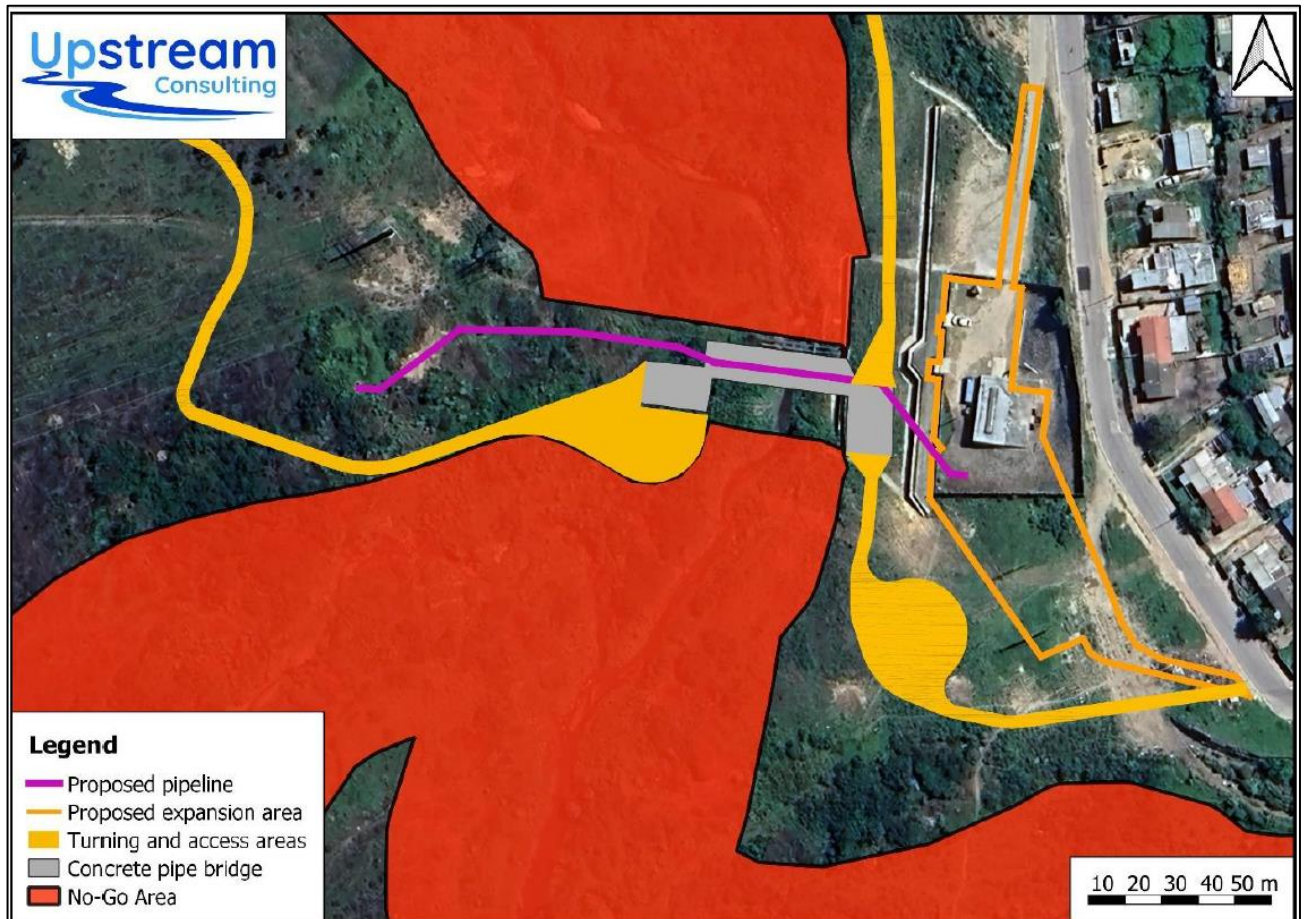


Figure 18: Aquatic buffer map.

## CONCLUSION

The aquatic habitats within a 500 metre radius of the proposed pipeline upgrades were identified and mapped on a desktop level utilising available data. Following the desktop findings, the infield site assessment confirmed the location and extent of these systems. Subsequent screening provided an indication of which of these systems may potentially be impacted upon by the project. It was determined that the Skaapkop River will be directly impacted by the proposed pipeline upgrades, and that the tributary stream may be indirectly disturbed by earthworks upslope during construction. The Skaapkop River is a perennial upper foothills system within the South Eastern Coastal Belt. It has a relatively small catchment, originating on the coastal plateau, and flowing a short distance before entering the Indian Ocean. Development in the catchment and along the banks has significantly modified the river regime. The system has been subjected to riparian habitat loss and disturbance due to urban encroachment, erosion and sedimentation from catchment land surface changes, water pollution and channel straightening. Sewage overflows from the pump station, as well as a stormwater pipeline outlet, have caused significant water pollution. There is an existing pipeline crossing the river from the Schaapkop pump station and the upgrades will follow the same route. The impacts associated with the project will be very similar to those which occurred during the construction of the existing infrastructure and are unlikely to cause any further deterioration of ecological condition.

The impact significance upon aquatic biodiversity for the project was determined as Low after mitigation. The river is in a severely modified condition and the project activities, after mitigation, will not cause further deterioration of any water resources. The impacts can be decreased to acceptable levels provided that mitigation measures are implemented. Of the three design alternatives assessed, Option 3 (pipeline along riverbed) is the least preferred design/construction method from an aquatic biodiversity perspective, as it will cause the most disturbance to the river. Design Options 1 and 2 (bridge crossings) will have very low impact significance after mitigation, and either of these are preferred for the maintenance of aquatic biodiversity.

The proposed project requires a Water Use License (WUL) in terms of Chapter 4 and Section 21 of the National Water Act No. 36 of 1998, prior to the commencement of activities.

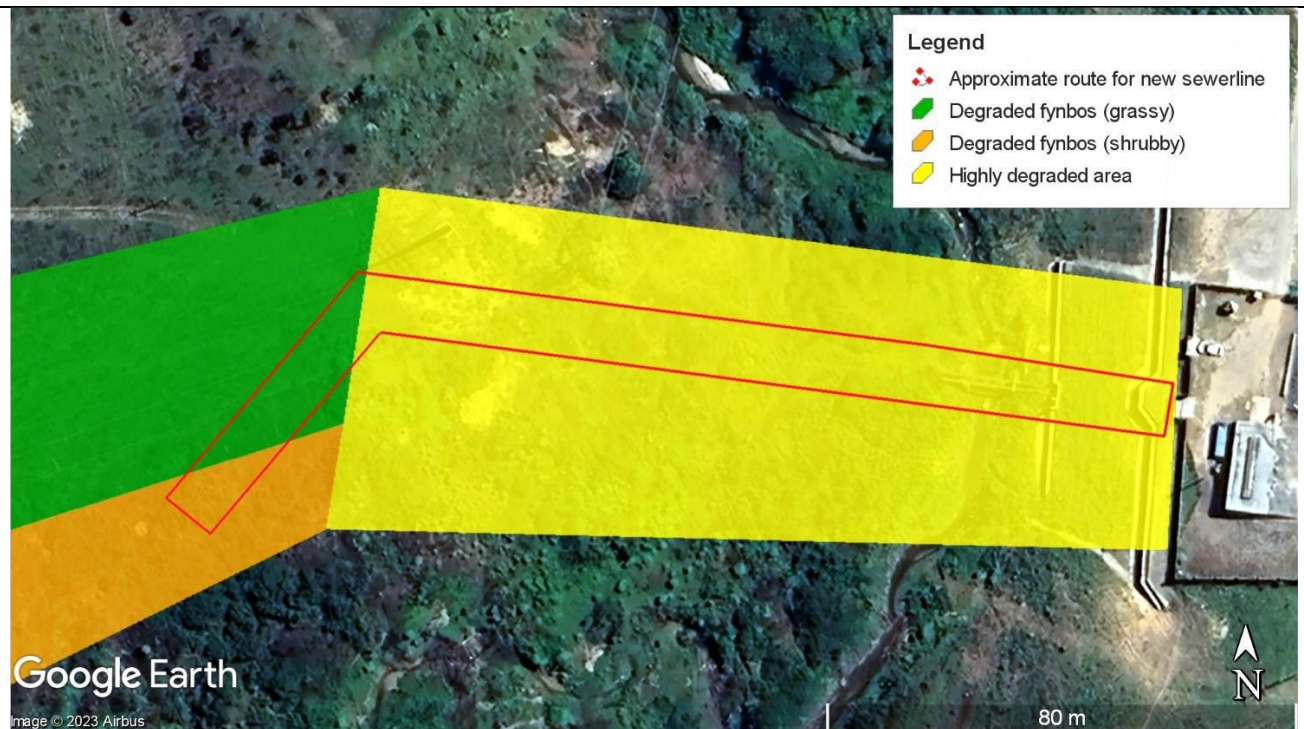
### 3. Coastal Environment

3.1.	Was a specialist study conducted?	YES	<b>NO</b>
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?	<b>YES</b>	NO
4.2.	Provide the name and/or company who conducted the specialist studies.		
	Mark Berry of Mark Berry Botanical (Appendix G1) Dr. Jacobus H. Visser of Blue Skies Research (Appendix G3)		
4.3.	Explain which systematic conservation planning and other biodiversity informants such as vegetation maps, NFEPA, NSBA etc. have been used and how has this influenced your proposed development.		
	<p><b>Vegetation map:</b> A product of The Vegetation of South Africa, Lesotho and Swaziland (VEGMAP) (Mucina &amp; Rutherford, 2006). The South African National Biodiversity Institute (SANBI) has updated the VEGMAP (2018). These shapefiles were used. In addition, the National Web-based Environmental Screening Tool was applied to determine the Relative Plant Species Theme Sensitivity as is required of botanical specialists.</p> <p>The 2018 Vegetation Map of South Africa classifies the main vegetation types found in the area as <u>Garden Route Granite Fynbos</u>. Due to its transformed state, Garden Route Granite Fynbos is currently listed as Critically Endangered in the Revised National List of Threatened Ecosystems (DEA, 2022). It has been transformed mainly for cultivation, pine plantations and urban development (Mucina, 2006).</p> <p><b>The vegetation across the site, as described by M. Berry (Appendix G1):</b> The proposed sewer pipe is located in an area that was probably used for grazing in the past but is now lying fallow. Fynbos elements are more prominent in the degraded fynbos areas. Elsewhere, only a few scattered fynbos species were noted here and there. One can distinguish between a grassier fynbos along the powerline servitude and a strip of shrubby fynbos below at the western end of the pipeline route. The grassiness can be ascribed to frequent bush-cutting during past agricultural use and probably also for safety reasons underneath the powerline. There is a high presence of invasive species, such as bugweed (<i>Solanum mauritanum</i>) and black wattle (<i>Acacia mearnsii</i>), especially in the highly degraded area. The vegetation can probably be best described as a low grassland or a degraded grassy fynbos where there is a significant fynbos component. Structurally, the shrubby</p>		

fynbos can be described as a low to mid-high closed small-leaved shrubland following Campbell's classification.



**Figure 19: Botanical attributes of the proposed pipeline route.**

All the recorded species are widespread and mostly common in the region. No regional endemics, SCC or protected tree species were recorded. There are only a few iNaturalist records of *Gnidia setosa* from the region<sup>4</sup>, but this can probably be ascribed to under-sampling. Floristic association with Garden Route Granite Fynbos is poor with only one important taxon recorded, namely *Leucadendron salignum*. This can be ascribed to the degraded state of the site.

\*Please refer to the botanical assessment report (Appendix G1) for the full list of plant species recorded by the botanist on site.

**Ecosystem threat status:** Informed by (1) The National List of Threatened Terrestrial Ecosystems (Government Gazette, 2011), (2) The Western Cape State of Biodiversity 2017 Report (Turner, 2017), and (3) The National Biodiversity Assessment (2018)(SANBI, 2019).

According to The National List of Ecosystems that are Threatened and Need of Protection (Government Gazette, 2011), the project footprint overlaps with a "Critically Endangered" ecosystem type following from the historical presence of Garden Route Granite Fynbos vegetation. Even so, this designation fails to take into account the degraded habitat conditions on the site, which point to a degraded and compromised ecosystem dynamic.

**Biodiversity planning:** The 2017 Western Cape Biodiversity Spatial Plan (CapeNature, 2017) GIS (Geographical Information System) shapefiles for the George Municipality is important for determining the conservation importance of the designated habitat. Ground-truthing is an essential component in terms of determining the habitat condition.

**Important species:** The presence or absence of threatened (i.e., species of conservation concern) and ecologically important species informs the ecological condition and sensitivity of the site. The latest conservation status of species is checked in the Red List of South African Plants (Raimondo et al. 2009) ([www.redlist.sanbi.org](http://www.redlist.sanbi.org)).

**Site boundary:** these and other resource layers were used to define the site boundary and to compile several maps. This information is available on the CapeFarmMapper website (Department of Agriculture: gis.elsenberg.com).

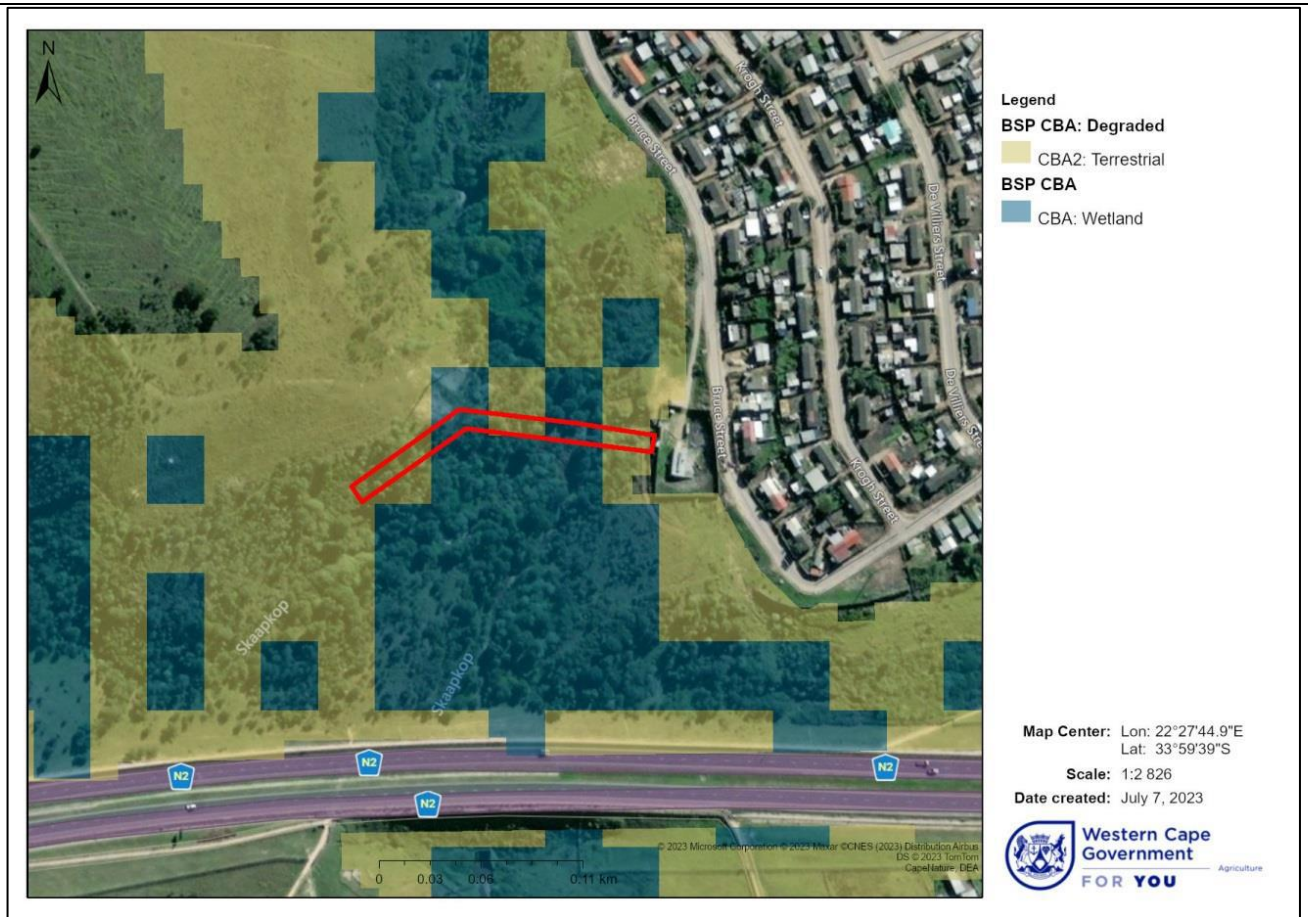
4.4. Explain how the objectives and management guidelines of the Biodiversity Spatial Plan have been used and how has this influenced your proposed development.

The 2017 WCBSP Handbook (Pool-Stanvliet et al., 2017) distinguishes between the various conservation planning categories. Critical Biodiversity Areas are habitats with high biodiversity and ecological value. Such areas include those that are likely to be in a natural condition (CBA 1) and those that are potentially degraded or represent secondary vegetation (CBA 2).

Ecological Support Areas are not essential for meeting biodiversity targets but play an important role in supporting the functioning of Protected Areas or CBAs and are often vital for delivering ecosystem services. A distinction is made between ESAs that are still likely to be functional (i.e., in a natural, near natural or moderately degraded condition; (ESA 1) and Ecological Support Areas that are severely degraded, or have no natural cover remaining, and therefore require restoration (ESA 2). Other Natural Area (ONA) sites are not currently identified as a priority but retain most of their natural character and perform a range of biodiversity and ecological infrastructure functions. Although not prioritised, they are still an important part of the natural ecosystem.

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

The project footprint currently overlaps with areas regarded as aquatic CBA in the central and eastern sections, with the remainder of the footprint intersecting degraded CBA2. Following the ground-truthing phase however, it is evident that faunal habitats on the site exist in a degraded state which supports a relatively impaired faunal and avifaunal diversity, some intact predator-prey dynamics, but overall altered ecosystem dynamics with no resident or potential subpopulations of terrestrial faunal or avifaunal SCC. To this end, the site cannot even be regarded as a degraded CBA (defined as: "Areas in a degraded or secondary condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure"), and will likely continue to degrade within the next few years, following reoccurring impacts from the adjacent Lawaaikamp suburb. To this end, the management objective for a CBA2 which is to "Maintain in a natural or near-natural state, with no further loss of habitat. Degraded areas should be rehabilitated. Only low-impact, biodiversity-sensitive land-uses are appropriate." is not applicable in the context of the current project footprint, and the planned activities will be able to proceed without having highly negative impacts on the study area landscape from a terrestrial biodiversity perspective.



**Figure 20: CBA Map**

A brief description of the Critical Biodiversity Areas (CBAs) categories which intersect with the study area (information sourced from Cape Farm Mapper version 2.6.10, Western Cape Department of Agriculture).

Category 1	Category 2	Definition	Objective
CBA: Aquatic	CBA: Wetland	Areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure.	Maintain in a natural or near-natural state, with no further loss of natural habitat. Degraded areas should be rehabilitated. Only low-impact, biodiversity-sensitive land uses are appropriate.
CBA2: Terrestrial	CBA2: Terrestrial	Areas in a degraded or secondary condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure.	Maintain in a natural or near-natural state, with no further loss of habitat. Degraded areas should be rehabilitated. Only low-impact, biodiversity-sensitive land-uses are appropriate.

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 site is not located in a protected area.

4.7.	Explain how the presence of fauna on and adjacent to the proposed development has influenced your proposed development.
<p>(Source: TERRESTRIAL FAUNAL AND AVIFAUNAL SPECIES COMPLIANCE STATEMENT REPORT FOR THE UPGRADE OF THE SCHAAPKOP SEWER RISING MAIN ON REMAINDER OF ERF 464 AND ERF 13486, GEORGE LOCAL MUNICIPALITY, 2023, Prepared by Dr. J.H. Visser of Blue Skies Research (Appendix G3)).</p> <p><b>Mammals</b>  Three mammal species were recovered within the study area, all of which are currently classified as "Least concern". These species include a small mammal predator, the Marsh Mongoose (<i>Atilax paludinosus</i>) along with rodent prey species such as the African Mole-rat (<i>Cryptomys hottentotus</i>) and Four-striped Grass Mouse (<i>Rhabdomys pumilio</i>). The site appears generally depauperate in mammal species and does not support any antelope species, most likely given its proximity to the adjacent Lawaakamp residential area with associated impacts on the study area landscape.</p> <p><b>Avifauna</b>  In total, 27 bird species were recorded within the study area, all of which are currently classified as "Least concern". The majority of avifauna on the site constitute common vegetation associated species. Most notable is the presence of raptor species in the study area, including the Black-winged Kite (<i>Elanus caeruleus</i>) and Rock Kestrel (<i>Falco rupicolus</i>) - a factor linked to the perching opportunities offered by the overhead power lines and the presence of suitable rodent prey.</p> <p><b>Grasshoppers</b>  No grasshopper species were observed within the study area landscape, likely owing to the wet nature of the grassland habitats on the site. Even so, the presence of the Yellow-winged Agile Grasshopper was evaluated based on suitable habitat (recently burnt Schlerophyll on south-facing slopes) for this species. Because this habitat is not available on the site, it is highly unlikely that this species will occur here.</p> <p><b>Absence of SCC in the study area</b>  Conditions in the study area currently point to altered ecosystem dynamics, impaired terrestrial faunal and avifaunal diversity and a highly degraded habitat structure with significant daily impacts emanating from the adjacent Lawaakamp suburb (see Subsection 11.1 of the Terrestrial Biodiversity Compliance Statement). Indeed, a general lack of SCC subpopulations characterises the broader study area landscape, as is evidenced by the fact that a large number of species (especially mammals) has not been observed here or has only been recorded a few times and a number of years ago (even though the pentad overlapping the study area is well-represented in the atlasing cards). To this end, the site does not constitute suitable habitat for any of the SCC considered in the current assessment, and it is highly unlikely that these species will occur here.</p>	

## 5. Geographical Aspects

Explain whether any geographical aspects will be affected and how has this influenced the proposed activity or development.
The pipeline crosses the Skaapkop River and as such it influenced the proposed methods of crossing the river which have been described in this BAR.

## 6. Heritage Resources

6.1.	Was a specialist study conducted?	YES	<b>NO</b>
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.

The proposal will be undertaken partially within the existing footprint of the facility and on disturbed and degraded land. Therefore, the proposal does not trigger listed activities in terms of the NHRA.

## 8. Socio/Economic Aspects

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

(Source: George South East Local Spatial Development Framework (October 2015)).

The site is situated in Ward 20, just outside the suburbs of Borchers and Lawaakamp. These suburbs along with Maraiskamp, Conville, Parkdene, Ballotsview, Rosemoor and Protea Park as well as the vacant land south of the industrial area on a portion of the Remainder of Erf 464 are considered the George South East Suburbs.

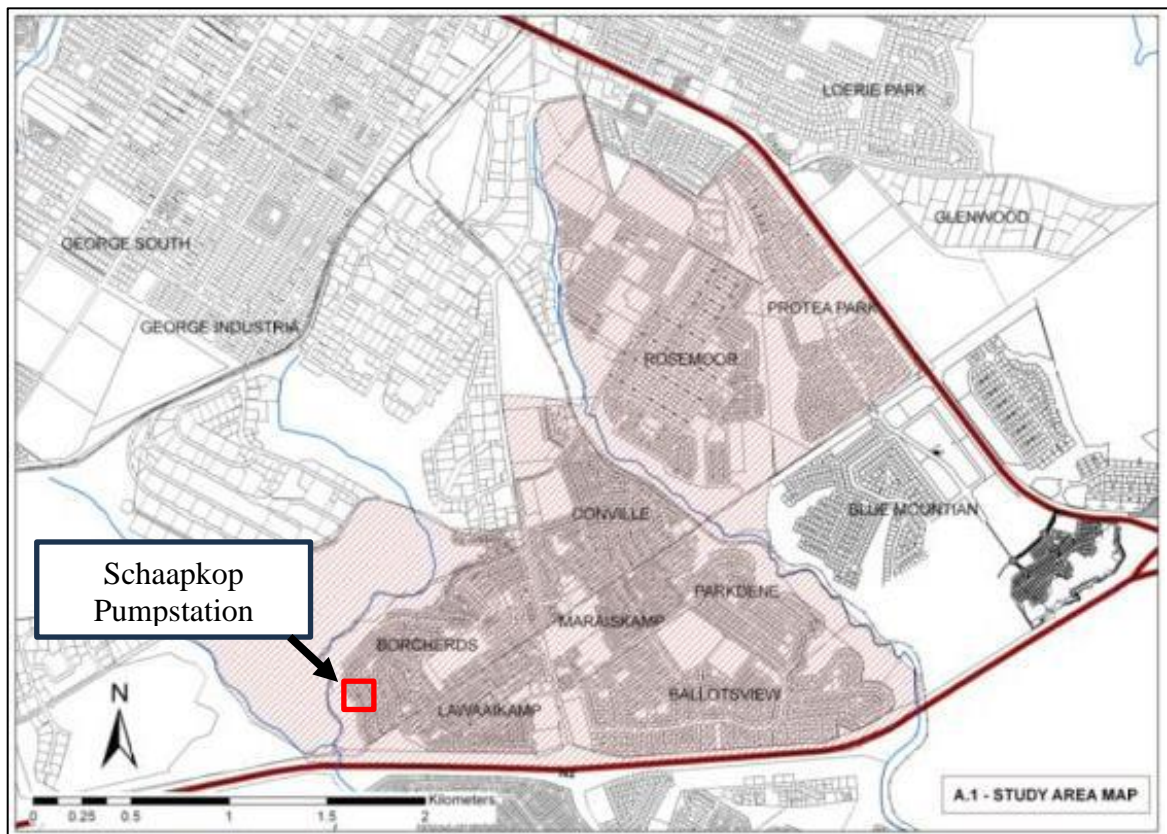


Figure 21: The George South East Suburbs highlighted in red.



George South East forms an integral part of George and serves mainly as a residential area for George. George South East is furthermore characterized by low order commercial and public facilities which are mainly directed on the local residents.

The area originated mainly as a so-called group area for the coloured population in the previous political dispensation with Lawaakamp added at a later stage as an improvement scheme for the squatters that lived there. This socio-political background of the area explains the existing situation as the design and development of the townships is typical of areas where the aim was to provide dormitory townships with little opportunities for integrated settlements. Little or no opportunities for its residents to enjoy all components of neighbourhood living and to advance to better housing were planned or currently exist.

Throughout the years and in spite of attempts to provide some facilities, the area remained mainly residential with limited social facilities.

George South East is predominantly a built-up town area but is characterised by deep valleys that run through the area. These river valleys (including the Schaapkop River Valley) are at present in a neglected state and serves to a big extent as a dumping area for household rubbish.

Demarcated by main transport routes and a railway line, the area is mainly a residential area with associated uses such as schools, clinics and community halls, shops, etc. Housing consists mainly of the typical subsidised houses which were all built as government housing projects. Because of a general housing shortage overcrowding took place and many shacks were erected. In the survey done for the Housing Master Plan it was found that 41% of the families in the sample survey stay in shacks.

Informal settlements occur in a number of places: along the slopes of most of the river valleys and on an educational site (Erf 17461 George) in Protea Park.

8.2.	Explain the socio-economic value/contribution of the proposed development.
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The proposed upgrades are expected to cost between R 10 million and R 15 million. The upgrades will increase the pumping capacity and resilience of the greater sewerage network which will benefit George as a whole.

Local labour will be sourced for the construction phase.

Municipal Tender rules apply.

8.3.	Explain what social initiatives will be implemented by applicant to address the needs of the community and to uplift the area.
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This proposal is going to address the needs of the community 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.
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Impacts will be temporary in nature and limited to the construction phase. Increasing the sewerage network capacity and resilience will decrease future sewerage spills and breakdowns.

## 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.
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Provide a description of the preferred property and site alternative.

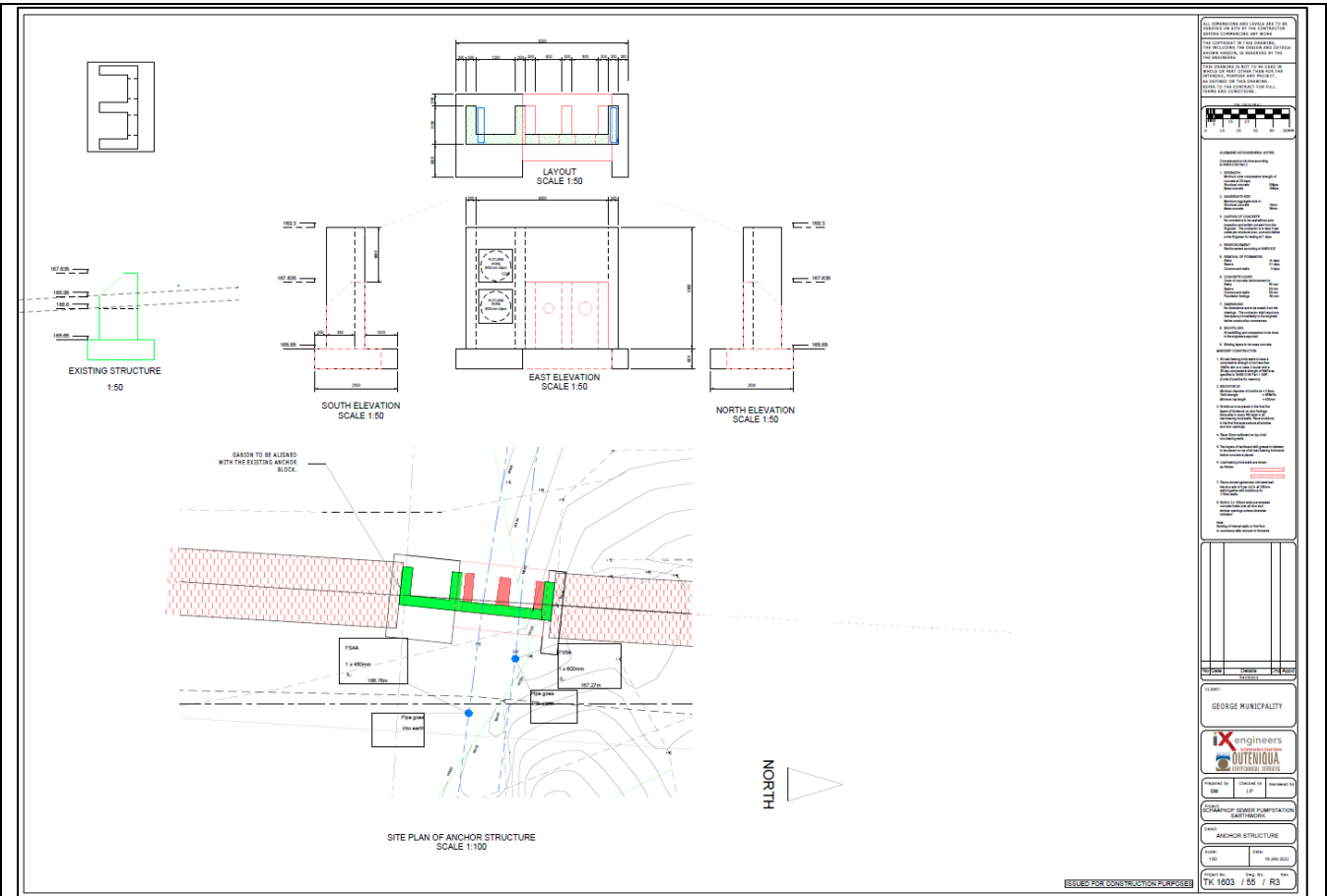
The existing and preferred site spans across two properties: Erf 13486 and Erf RE/464. The properties are situated just outside the Borchards and Lawaakamp suburbs of George South East.

As the proposal is for the upgrading of an existing facility, no property or site alternatives exist.

Provide a description of any other property and site alternatives investigated.	
No property or site alternatives are being investigated. The proposal is for the upgrade of an existing facility.	
Provide a motivation for the preferred property and site alternative including the outcome of the site selectin matrix.	
The pump station has been at this site for more than 35 years. It will not make sense to move the whole site somewhere else.	
Provide a full description of the process followed to reach the preferred alternative within the site.	
N/A	
Provide a detailed motivation if no property and site alternatives were considered.	
The pump station has been at this site for more than 35 years. It will not make sense to move the whole site somewhere else.	
List the positive and negative impacts that the property and site alternatives will have on the environment.	
N/A	
1.2.	Activity alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.
Provide a description of the preferred activity alternative.	
The preferred activity is to upgrade a section of the existing rising main. As part of the upgrade of the of Pump Station, the existing portion of 500 mm diameter rising main will be upgraded to an 800 mm diameter rising main.	
No activity alternatives exist.	
Provide a description of any other activity alternatives investigated.	
No other activity has been investigated.	
Provide a motivation for the preferred activity alternative.	
N/A	
Provide a detailed motivation if no activity alternatives exist.	
The preferred activity is to upgrade a section of the existing rising main. As part of the upgrade of the of Pump Station, the existing portion of 500 mm diameter rising main will be upgraded to an 800 mm diameter rising main.	
No activity alternatives exist.	
List the positive and negative impacts that the activity alternatives will have on the environment.	
N/A	
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.	
Please refer to the Engineering Report and Engineering Options (Appendix J). As the Pipeline is existing the route and site are fixed however three different forms of crossing the Skaapkop River were explored as Alternatives (Options in the Engineering Report).	
<b>Alternative A (Preferred Alternative)</b> As seen from the report the Preferred Alternative (Option 2) will entail the construction of a U channel concrete pipe bridge with the pipeline covered with removeable concrete cover slabs. At both sides of the river a foundation structure will be erected to accommodate the pipe bridge, as seen in Figure 22 (an example of such a u channel concrete pipe bridge) and Figure 23, the Layout of Pipe Bridge Anchor Structure on Eastern Bank.	



**Figure 22: Alternative A, Preferred Alternative (example of a typical u channel concrete pipe bridge)**



**Figure 23: Layout of Pipe Bridge Anchor Structure on Eastern Bank**

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

Two other Alternatives were explored for the means of crossing the Skaapkop River.

**Alternative B (Option 1 in the Engineering Report)**

For this alternative the same means of crossing the river that currently exists is proposed. For this Alternative the river will be crossed with a steel pipe acting as a pipe bridge and the pipe itself simultaneously. On the eastern riverbank a concrete anchor block exists. On the Western side the pipe gradually slopes into the embankment (Figure 24).



**Figure 24: Existing Pipe bridge (Alternative B, Option 1 in the Engineering Report)**

**Alternative C (Option 3 in the Engineering Report)**

For this Alternative the river crossing could be completed via a pipeline following the riverbed profile, the pipeline will therefore under the riverbed. At both riverbanks an anchor block will be required as well as in the riverbed. Air valves will be installed at both riverbanks.

Provide a motivation for the preferred design or layout alternative.

As shown in the Impact tables, Alternative C (Option 3) will have a relatively high impact significance as there would be greater disturbance to the river as the bed will have to be excavated to install and secure the pipeline in place. In terms of environmental impact significance Alternatives A and B are essentially the same. The Preferred Alternative A is therefore preferred due to the Engineering and Socio-economic advantages and disadvantages as shown in table

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

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

**Table 2: Alternatives advantages and disadvantages**

Advantages	Disadvantages
<b>Alternative A, Preferred (Option 2 of the engineering report) Typical crossing as per existing structure covered with concrete U-channel and cover slabs</b>	
Nothing to very little potential of vandalism.	Anchor block at each riverbank.
Second longest construction period.	Visual impact.
	Potential of cement spillage in Schaapkop river during construction.
	Construction period longer than Alternative B (Option 1)

<b>Alternative B, (Option 1 of the engineering report) Typical crossing as per existing structure</b>	
Cheapest option	Highest potential of vandalism – leading to spillage in Schaapkop river.
Construction period shortest.	At least one anchor block at either of the two riverbanks.
Lowest potential of concrete spillage in Schaapkop river.	Visual impact.
	Potential of cement spillage in Schaapkop river during construction.
<b>Alternative C, (Option 3 of the engineering report) Alternative river crossing, riverbed crossing:</b>	
Nothing to very little potential of vandalism.	Anchor block at each riverbank.
No visual impact.	Installation of air valves. Air valves are generally installed on pump discharge headers and at high points along force mains to prevent air pockets or vacuum conditions. Air and vacuum pockets can cause system surges, loss of efficiency and rapid corrosion of the pipe.
	Most expensive option
	Longest construction period.
	Must work within a flowing watercourse
	Excavate within riverbed.
	Potential of cement spillage in Schaapkop river during construction.
	Potential of flood damage.
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 to this proposal	
Provide a description of any other technology alternatives investigated.	
Not Applicable to this proposal	
Provide a motivation for the preferred technology alternative.	
Not Applicable to this proposal	
Provide a detailed motivation if no alternatives exist.	
Not Applicable to this proposal	
List the positive and negative impacts that the technology alternatives will have on the environment.	
Not Applicable to this proposal	
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 to this proposal	
Provide a description of any other operational alternatives investigated.	
Not Applicable to this proposal	
Provide a motivation for the preferred operational alternative.	

Not Applicable to this proposal	
Provide a detailed motivation if no alternatives exist.	
Not Applicable to this proposal	
List the positive and negative impacts that the operational alternatives will have on the environment.	
Not Applicable to this proposal	
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.	
Sewerage infrastructure must be maintained and periodically upgraded to ensure functionality and prevent breakdowns	
1.7.	Provide an explanation as to whether any other alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist.
1.8.	Provide a concluding statement indicating the preferred alternatives, including the preferred location of the activity.
Taking the finding of the specialists into account, the impacts associated with Alternatives A and B are very similar, as such the deciding factor for the Preferred Alternative A is derived from Engineering input that Alternative A (Option 2 of the Engineering report) is the preferred alternative as shown in table 2, because it solves the vandalism and theft issue.	

## 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).	
As the site traverses a river, the construction activities will be in the most sensitive part of the area. As such the goal of the No-Go area for this proposal will be to limit the movements within the river to the absolute minimum. The contractor will therefore be offered a reasonable working corridor to ensure labourer safety however all areas outside of the working footprint will be considered the No-Go area as per Figure 18 or 25 (Aquatic buffer map)	

## 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 <i>Guideline on Impact Significance, Integrated Environmental Management Information Series 5</i> (Department of Environmental Affairs and Tourism (DEAT), 2002) and the <i>Guideline 5: Assessment of Alternatives and Impacts in Support of the Environmental Impact Assessment Regulations</i> (DEAT, 2006).	
<b>Determination of Extent (Scale):</b>	
<b>Site specific</b>	On site or within 100 m of the site boundary, but not beyond the property boundaries.
<b>Local</b>	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.
<b>Regional</b>	The impact would affect the broader region (e.g., neighbouring towns) beyond the boundaries of the adjacent properties.
<b>National</b>	The impact would affect the whole country (if applicable).
<b>Determination of Duration:</b>	
<b>Temporary</b>	The impact will be limited to the construction phase.

<b>Short term</b>	The impact will either disappear with mitigation or will be mitigated through a natural process in a period shorter than 8 months after the completion of the construction phase.
<b>Medium term</b>	The impact will last up to the end of the construction phase, where after it will be entirely negated in a period shorter than 3 years after the completion of construction activities.
<b>Long term</b>	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.
<b>Permanent</b>	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:**

<b>Improbable</b>	The possibility of the impact occurring is very low, due either to the circumstances, design or experience.
<b>Probable</b>	There is a possibility that the impact will occur to the extent that provisions must therefore be made.
<b>Highly probable</b>	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.
<b>Definite</b>	The impact will take place regardless of any prevention plans.

#### **Determination of Significance (without mitigation):**

<b>No significance</b>	The impact is not substantial and does not require any mitigation action.
<b>Low</b>	The impact is of little importance but may require limited mitigation.
<b>Medium</b>	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.
<b>Medium-High</b>	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.
<b>High</b>	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.
<b>Very High</b>	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):**

<b>No significance</b>	The impact will be mitigated to the point where it is regarded to be insubstantial.
<b>Low</b>	The impact will be mitigated to the point where it is of limited importance.
<b>Medium</b>	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.
<b>High</b>	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:**

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

**Determination of Degree to which an Impact can be Mitigated:**

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

**Determination of Loss of Resources:**

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

**Determination of Cumulative Impact:**

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

**Determination of Consequence significance:**

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

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

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

## Development/Construction Phase Impacts

Alternative:	Alternatives A, B and C	No-Go Alternative
<b>PLANNING, DESIGN AND DEVELOPMENT PHASE</b>		
<b>Potential impact and risk:</b>	<b>Impact on terrestrial biodiversity (vegetation)</b>	
Nature of impact:	<ul style="list-style-type: none"> <li>• Disturbance of degraded fynbos (500-750 m<sup>2</sup>).</li> <li>• Impact on the functionality of biodiversity network. Impact will be temporary.</li> <li>• Increased opportunity for alien infestation.</li> <li>• Erosion on the steeper slope due to poor rehabilitation efforts.</li> </ul>	No Impact
Extent and duration of impact:	<ul style="list-style-type: none"> <li>• Construction footprint and immediate surroundings</li> <li>• Short to medium term</li> </ul>	
Consequence of impact or risk:	Exposed soils vulnerable to erosion whilst vegetation recovers	
Probability of occurrence:	High	
Degree to which the impact may cause irreplaceable loss of resources:	Medium	
Degree to which the impact can be reversed:	Medium-high	
Indirect impacts:	Disturbed areas vulnerable to erosion whilst vegetation recovers	
Cumulative impact prior to mitigation:	The continued erosion of Garden Route Granite Fynbos and the biodiversity network as a result of construction activities. In this instance, the loss of biodiversity and resultant cumulative impact is considered small (acceptable) due to the already degraded state of the site, the linear nature of the project and the potential for rehabilitation. There should be no cumulative impact if rehabilitation is successful.	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Medium-low (-)</b>	<b>No Impact</b>
Degree to which the impact can be avoided:	Low	
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	High	
Proposed mitigation:	See below	
Residual impacts:	Modified landscape (Pipeline footprint)	
Cumulative impact post mitigation:	There should be no cumulative impact if rehabilitation is successful.	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Low (-)</b>	<b>No Impact</b>

### Mitigation Measures:

- During the construction phase, demarcate/fence off the construction footprint. Restrict all construction activities, such as stockpiling, parking and cement mixing, to already disturbed areas away from natural vegetation. The contractor(s) must be made aware of the sensitive surroundings. The fynbos outside the footprint must be declared a 'no-go' area and not be disturbed in any way.
- Pollutant substances brought onto site must be properly contained. Cement/concrete mixing must be contained on impervious and bunded surfaces. No cement mixing is allowed inside vegetated areas. Cement water is highly alkaline and considered toxic.
- Remove topsoil and/or seedbearing indigenous plant material from the vegetated areas to be disturbed for use in the rehabilitation of disturbed areas after construction. Avoid using seed-bearing alien plant material for rehabilitation purposes.
- Rehabilitate/revegetate all the disturbed surfaces. Erosion prevention measures may be needed on the steep slopes, such as silt fences, logs, netting or berms, to slow down runoff and potential erosion. Mulching and seeding with indigenous grass seed may also be needed. However, due to the linear nature of the project, it is expected that the disturbed areas will recover relatively quickly without the need for much intervention.
- Engage in alien clearing, focussing on invasive species such as black wattle and bugweed. These species are category 2 and 1b invaders that require compulsory control as part of an invasive species control programme. Their control will become a medium-term maintenance requirement.
- Allow at least 24 months for the monitoring of rehabilitation success and alien infestation post construction.

Alternative:	Alternative A, B and C	No-Go Alternative
<b>PLANNING, DESIGN AND DEVELOPMENT PHASE</b>		
<b>Potential impact and risk:</b>	<b>Impact on flora and SCC.</b>	
Nature of impact:	Loss of indigenous flora and SCC	No Impact
Extent and duration of impact:	<ul style="list-style-type: none"> <li>• Development footprint</li> <li>• Short to medium term</li> </ul>	
Consequence of impact or risk:	Potential establishment of alien vegetation	
Probability of occurrence:	High	
Degree to which the impact may cause irreplaceable loss of resources:	Medium	
Degree to which the impact can be reversed:	Medium-high	
Indirect impacts:	Alien vegetation establishment in disturbed/recovering areas	
Cumulative impact prior to mitigation:	the continued erosion of Garden Route Granite Fynbos and the biodiversity network as a result of construction activities. In this instance, the loss of biodiversity and resultant cumulative impact is considered small (acceptable) due to the already degraded state of the site, the linear nature of the project and the potential for rehabilitation. There should be no cumulative impact if rehabilitation is successful.	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Medium-low (-)</b>	<b>No Impact</b>
Degree to which the impact can be avoided:	Low	
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	High	
Proposed mitigation:	See below	
Residual impacts:	Alien vegetation establishment in disturbed areas	

Cumulative impact post mitigation:	There should be no cumulative impact if rehabilitation is successful.	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Low (-)</b>	<b>No Impact</b>

**Mitigation Measures:**

- Search and rescue succulents and bulbs from the construction footprint for replanting in the disturbed areas after construction. Topsoil, cuttings and seedbearing plant material can also be salvaged for this purpose, especially cuttings from *Carpobrotus edulis*. Geophytes should be removed along with some soil, placed in gel, bagged and then taken to a nursery for temporary storage or transplanted directly in the receiving area. Ideally, bulbs should be salvaged during leaf fall, but before or after flowering.

Alternative:	Alternative A and B	Alternative C	No-Go Alternative
<b>PLANNING, DESIGN AND DEVELOPMENT PHASE</b> *Please refer to the aquatic assessment report, page 28 of Appendix G2.			
<b>Potential impact and risk:</b>	<b>Disturbance of aquatic habitat and biota - Clearance of vegetation, earthworks on the riverbanks, and further invasive alien plant infestation.</b>		
Nature of impact:	The disturbance or loss of aquatic vegetation and habitat refers to the direct physical destruction or disturbance which can result in further deterioration in freshwater ecosystem integrity, and a reduction in the supply of ecosystem services.		No Impact
Extent and duration of impact:	Site and short term		
Consequence of impact or risk:	deterioration in freshwater ecosystem integrity, and a reduction in the supply of ecosystem services.		
Probability of occurrence:	Probable	definite	
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss of resource		
Degree to which the impact can be reversed:	Reversible		
Indirect impacts:	Deterioration in freshwater ecosystem integrity, and a reduction in the supply of ecosystem services.		
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Medium (-)</b>	<b>Medium (-)</b>	<b>No Impact</b>
Degree to which the impact can be avoided:	Cannot be avoided		
Degree to which the impact can be managed:	Can be managed		
Degree to which the impact can be mitigated:	High	Medium	
Proposed mitigation:	See below		
Residual impacts:	Negligible		
Cumulative impact post mitigation:	The project is unlikely to have any significant cumulative impacts as this is an existing sewer pipeline route, being upgraded to accommodate a growing population, in a severely degraded area. Most of the risk is temporary and		

	contained within the construction phase. The application of mitigation measures will prevent any negative residual impacts and will enhance the project benefits (such as essential sewer system maintenance).		
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Low (-)</b>	<b>Low (-)</b>	<b>No Impact</b>

**Mitigation measures to reduce residual risk or enhance opportunities:**

- A construction method statement must be compiled and available on site. It must consider the buffer zone and include methods to avoid unnecessary disturbance and prevent material being washed downslope into the river.
- The edges of the construction servitude relative to the aquatic habitat must be clearly staked-out and demarcated prior to construction commencing.
- Removal of vegetation must only be when essential for the continuation of the project. Do not allow any disturbance to the adjoining natural vegetation cover or soils.
- Access to and from the development area should be either via existing roads, new roads or within the construction servitude. Any contractor found working within No-Go areas must be fined as per fining schedule/system setup for the project.
- Following construction, it is important to stabilise any steep, bare areas on the slope and river banks via geotextiles and/or revegetation.
- It is the contractor's responsibility to continuously monitor the area for newly established alien species during the contract and establishment period, which if present must be removed. Removal of these species shall be undertaken in a way which prevents any damage to the remaining indigenous species and inhibits the re-infestation of the cleaned areas. Any use of herbicides in removing alien plant species is required to be investigated by the ECO before use.
- It is recommended that a rehabilitation plan be compiled to return the disturbed areas (such as the turning area) which are within the riparian area, to the pre-construction state.
- Monitoring of the project activities is essential to ensure the mitigation measures are implemented. Compliance with the mitigation recommendations must be audited by a suitably qualified independent Environmental Control Officer with an appropriately timed audit report, especially during work in the riparian zone.

Alternative:	Alternatives A, B and C	(No-Go)
<b>PLANNING, DESIGN AND DEVELOPMENT PHASE</b>		
<b>Potential impact and risk:</b>	<b>CAPITAL EXPENDITURE DUE TO CONSTRUCTION COSTS</b> It is anticipated that construction related costs will be in the region of R10 million to R15 million:	
Nature of impact:	Positive	No Impact
Extent and duration of impact:	Local and Temporary	
Consequence of impact or risk:	Capital influx for businesses involved, and knock on effect as the businesses that will supply services and materials for the development will benefit from the capital influx	
Probability of occurrence:	Definite	
Degree to which the impact may cause irreplaceable loss of resources:	No loss of resource	
Indirect impacts:	Growth for business involved in the development and general influx of capital into the construction sector support industries	
Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High)	Low-medium	No Impact

Degree to which the impact can be managed:	Can be managed by encouraging proponent to support local business	
Proposed mitigation:	Local business should be supported as far as possible	
Residual impacts:	Certain services or materials may need to be sourced from outside of the George Municipal area	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Medium (+)</b>	<b>No Impact</b>

<b>Alternative:</b>	<b>Alternatives A, B and C</b>	<b>(No-Go)</b>
<b>DEVELOPMENT PHASE</b>		
<b>Potential impact and risk:</b>	<b>NOISE GENERATED BY CONSTRUCTION ACTIVITIES:</b> Construction related noise could cause nuisance to the surrounding environment.	
Nature of impact:	Negative	No Impact
Extent and duration of impact:	Local and Temporary	
Consequence of impact or risk:	Negligible <ul style="list-style-type: none"> <li>Frustrations and disruptions experienced by surrounding landowners</li> <li>Detract from sense of place (peacefulness)</li> </ul>	
Probability of occurrence:	Definite	
Degree to which the impact may cause irreplaceable loss of resources:	No loss of resource	
Degree to which the impact can be reversed:	Irreversible	
Indirect impacts:		
Cumulative impact prior to mitigation:	Low	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low	
Degree to which the impact can be avoided:	Not avoidable	
Degree to which the impact can be managed:	Can be managed by limiting noise impacts to unavoidable noise only	
Degree to which the impact can be mitigated:	Can barely be mitigated	
Proposed mitigation:	<ul style="list-style-type: none"> <li>Construction should only be allowed during normal construction working hours.</li> <li>A register will be kept on site in order to report any complaints received.</li> <li>No unnecessary noise disturbances should be allowed to emanate from the construction site (i.e. loud music).</li> </ul>	
Residual impacts:	Noise impacts even with mitigation will emanate from the site during the construction phase	
Cumulative impact post mitigation:	Negligible	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Low (-)</b>	

Alternative:	Alternatives A, B and C	No-Go
<b>DEVELOPMENT PHASE</b>		
<b>Potential impact and risk:</b>	<b>Temporary Job creation – The development phase is expected to provide jobs for unskilled and skilled labourers.</b>	
Nature of impact:	Positive	No Impact
Extent and duration of impact:	Local and Temporary	
Consequence of impact or risk:	Medium <ul style="list-style-type: none"> <li>• Temporary income for those employed during the construction phase</li> <li>• Skill building for first time construction labourers</li> </ul>	
Probability of occurrence:	Definite	
Degree to which the impact may cause irreplaceable loss of resources:	Not Applicable	
Degree to which the impact can be reversed:	Not Applicable	
Indirect impacts:	Quality of life for labourers is temporarily uplifted Capital influx for households	
Cumulative impact prior to mitigation:	Not Applicable	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)		
Degree to which the impact can be avoided:		
Degree to which the impact can be managed:		
Degree to which the impact can be mitigated:		
Proposed mitigation:		
Residual impacts:		
Cumulative impact post mitigation:	Medium (+)	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)		

## Construction and Operational Phase Impacts

Alternative:	Alternative A and B	Alternative C	No-Go Alternative
<b>CONSTRUCTION PHASE AND INTO OPERATIONAL PHASE</b> *Please refer to the aquatic assessment report, page 29 of Appendix G2.			
<b>Potential impact and risk:</b>	<b>Sedimentation and erosion - Vegetation clearing, earthworks, and exposure of bare soils within and upslope of the aquatic habitat.</b>		
Nature of impact:	The alteration in the physical characteristics of the rivers as a result of increased turbidity and sediment deposition, as well as instability and collapse of unstable soils during project operation. These impacts can result in the deterioration of aquatic ecosystem integrity and a reduction/loss of habitat for aquatic dependent flora & fauna.		No Impact

Extent and duration of impact:	Local and medium term		
Consequence of impact or risk:	Deterioration of aquatic ecosystem integrity and a reduction/loss of habitat for aquatic dependent flora & fauna.		
Probability of occurrence:	Low probability	Highly probable	
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss of resource		
Degree to which the impact can be reversed:	Reversible		
Indirect impacts:	Deterioration of aquatic ecosystem integrity and a reduction/loss of habitat for aquatic dependent flora & fauna.		
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Medium (-)</b>	<b>Medium (-)</b>	<b>No Impact</b>
Degree to which the impact can be avoided:	Cannot be avoided		
Degree to which the impact can be managed:	Can be managed		
Degree to which the impact can be mitigated:	Low	Low	
Proposed mitigation:	See below		
Residual impacts:	Negligible risk and acceptable, with adoption of mitigation measures and monitoring		
Cumulative impact post mitigation:	The project is unlikely to have any significant cumulative impacts as this is an existing sewer pipeline route, being upgraded to accommodate a growing population, in a severely degraded area. Most of the risk is temporary and contained within the construction phase. The application of mitigation measures will prevent any negative residual impacts and will enhance the project benefits (such as essential sewer system maintenance).		
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Low (-)</b>	<b>Low (-)</b>	<b>No Impact</b>

#### **Mitigation measures to reduce residual risk or enhance opportunities:**

- A construction method statement must be compiled and available on site. It must consider the buffer zone and include methods to avoid unnecessary disturbance and prevent material being washed downslope into the river.
- Sedimentation must be minimised with appropriate measures. Any construction causing bare slopes and surfaces to be exposed to the elements must include measures to protect against erosion using covers, silt fences, sandbags, earthen berms etc. Effective stormwater management must include effective stabilisation of exposed soil.
- All stockpiles must be protected and located in flat areas where run-off will be minimised and sediment recoverable.
- Construction must have contingency plans for high rainfall events during construction. Even in the operational phase, measures to contain impacts caused during high rainfall events must be planned for and available for use.
- The area must be maintained through alien invasive plant species removal (which is the landowner's responsibility regardless of mitigation associated with this project) and the establishment of indigenous vegetation cover to filter run-off before it enters the aquatic habitat.
- It is recommended that a rehabilitation plan be compiled to return the disturbed areas (such as the turning area) which are within the riparian area, to the pre-construction state.
- Following construction, it is important to stabilise any steep, bare areas on the transformed slope via geotextiles and/or revegetation. Erosion features that have developed due to construction are required to be stabilised. This may also include the need to deactivate any erosion headcuts/rills/gullies that may have developed.



Alternative:	Alternative A and B	Alternative C	No-Go Alternative
<b>CONSTRUCTION PHASE AND OPERATIONAL PHASE</b> *Please refer to the aquatic assessment report, page 30 of Appendix G2.			
<b>Potential impact and risk:</b>	<b>Changes to surface water quality - During construction there are a number of potential pollution inputs into the aquatic systems (such as hydrocarbons and raw cement). During the operational phase, the sewage infrastructure poses a threat to the water quality.</b>		
Nature of impact:	Water and/or soil pollution cause negative changes in the physical, chemical and biological characteristics of water resources (i.e., water quality). This can result in possible deterioration in aquatic ecosystem integrity and a reduction in species.		failure of the sewer network due to lack of maintenance
Extent and duration of impact:	Site and short term	Local and short term	local but long-term
Consequence of impact or risk:	Possible deterioration in aquatic ecosystem integrity and a reduction in species.		
Probability of occurrence:	Low probability	Low probability	
Degree to which the impact may cause irreplaceable loss of resources:	Marginal loss of resource		
Degree to which the impact can be reversed:	Reversible		
Indirect impacts:	Possible deterioration in aquatic ecosystem integrity and a reduction in species.		
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Low (-)</b>	<b>Medium (-)</b>	<b>Medium (-)</b>
Degree to which the impact can be avoided:	Cannot be avoided		
Degree to which the impact can be managed:	Can be managed		
Degree to which the impact can be mitigated:	Low	Low	
Proposed mitigation:	See below		
Residual impacts:	Negligible risk and acceptable, with adoption of mitigation measures and monitoring		
Cumulative impact post mitigation:	The project is unlikely to have any significant cumulative impacts as this is an existing sewer pipeline route, being upgraded to accommodate a growing population, in a severely degraded area. Most of the risk is temporary and contained within the construction phase. The application of mitigation measures will prevent any negative residual impacts and will enhance the project benefits (such as essential sewer system maintenance).		
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Very Low (-)</b>	<b>Low (-)</b>	<b>Medium (-)</b>

**Mitigation measures to reduce residual risk or enhance opportunities:**

- Mixing and/or decanting of all chemicals and hazardous substances must take place on a tray, shutter boards or on an impermeable surface and must be protected from stormwater.

- Cement/concrete batching is to be located in an area of low environmental sensitivity away from the river channel and pre-approved by the ECO. No batching activities shall occur on unprotected ground. Adequate surface protection will be required. Concrete batching should be restricted to a level and bunded/sealed surface above the riverbanks.
- Contaminated water containing fuel, oil or other hazardous substances must never be released into the environment. It must be disposed of at a registered hazardous landfill site.
- In the operational phase, no wastewater must be allowed to enter the surrounding environment. The National Water Act imposes 'duty of care' on all landowners, to ensure that water resources are not polluted. The following Clause in terms of the National Water Act is applicable in this case: 19 (1) "An owner of land, a person in control of land or a person who occupies or uses the land on which (a) any activity or process is or was performed or undertaken; which causes, has caused or likely to cause pollution of a water resource, must take all reasonable measures to prevent any such pollution from occurring, continuing or recurring".
- Pumps, pipelines and other equipment should be regularly inspected and maintained.
- The Department of Water regional office should be notified, as soon as possible, of any significant chemical spill or leakage to the environment where there is the potential to contaminate surface water or groundwater.

The **No-Go Alternative** will not impact the river directly, but failure of the sewer network due to lack of maintenance or capacity could have a negative indirect impact upon the river, should there be sewage leakages or overflows in future. Therefore, the No-Go Alternative would have a local but long-term negative impact, of moderate magnitude, upon aquatic biodiversity. This is an unfavourable alternative as adequate sewerage infrastructure, and the maintenance thereof, is essential to society. With the application of mitigation, and the prevention of aquatic habitat loss or degradation, the project will indirectly assist in the protection of water resources from pollution.

## Operational Phase Impacts

Alternative:	Alternatives A, B and C	No-Go Alternative
<b>OPERATIONAL PHASE</b>		
<b>Potential impact and risk:</b>	<b>Impact on terrestrial biodiversity (vegetation)</b>	
Nature of impact:	Increased alien infestation.	No Impact
Extent and duration of impact:	<ul style="list-style-type: none"> <li>• Construction footprint and immediate surroundings</li> <li>• medium term</li> </ul>	
Consequence of impact or risk:	Decrease in biodiversity	
Probability of occurrence:	High	
Degree to which the impact may cause irreplaceable loss of resources:	Medium-Low	
Degree to which the impact can be reversed:	High	
Indirect impacts:	Decrease in biodiversity, Increased alien infestation.	
Cumulative impact prior to mitigation:	The continued erosion of Garden Route Granite Fynbos and the biodiversity network as a result of construction activities. In this instance, the loss of biodiversity and resultant cumulative impact is considered small (acceptable) due to the already degraded state of the site, the linear nature of the project and the potential for rehabilitation. There should be no cumulative impact if rehabilitation is successful.	
Significance rating of impact prior to mitigation	<b>Medium-low (-)</b>	<b>No Impact</b>

(e.g. Low, Medium, Medium-High, High, or Very-High)		
Degree to which the impact can be avoided:	Low	
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	High	
Proposed mitigation:	<ul style="list-style-type: none"> <li>Rehabilitate/revegetate all the disturbed surfaces. Erosion prevention measures may be needed on the steep slopes, such as silt fences, logs, netting or berms, to slow down runoff and potential erosion. Mulching and seeding with indigenous grass seed may also be needed. However, due to the linear nature of the project, it is expected that the disturbed areas will recover relatively quickly without the need for much intervention.</li> <li>Engage in alien clearing, focussing on invasive species such as black wattle and bugweed. These species are category 2 and 1b invaders that require compulsory control as part of an invasive species control programme. Their control will become a medium-term maintenance requirement.</li> <li>Allow at least 24 months for the monitoring of rehabilitation success and alien infestation post construction.</li> </ul>	
Residual impacts:	The residual impact will therefore be minimal.	
Cumulative impact post mitigation:	The continued erosion of Garden Route Granite Fynbos and the biodiversity network as a result of construction activities. In this instance, the loss of biodiversity and resultant cumulative impact is considered small (acceptable) due to the already degraded state of the site, the linear nature of the project and the potential for rehabilitation. There should be no cumulative impact if rehabilitation is successful.	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low (-)	No Impact

Alternative:	Alternative A, B and C	No-Go Alternative
<b>OPERATIONAL PHASE</b>		
<b>Potential impact and risk:</b>	<b>Impact on flora and SCC.</b>	
Nature of impact:	Alien infestation and resulting displacement of indigenous flora	No Impact
Extent and duration of impact:	<ul style="list-style-type: none"> <li>Development footprint and immediate surroundings</li> <li>Medium term</li> </ul>	
Consequence of impact or risk:	Displacement of indigenous flora	
Probability of occurrence:	High	
Degree to which the impact may cause irreplaceable loss of resources:	Medium	
Degree to which the impact can be reversed:	high	

Indirect impacts:	Alien vegetation establishment in disturbed/recovering areas	
Cumulative impact prior to mitigation:	the continued erosion of Garden Route Granite Fynbos and the biodiversity network as a result of construction activities. In this instance, the loss of biodiversity and resultant cumulative impact is considered small (acceptable) due to the already degraded state of the site, the linear nature of the project and the potential for rehabilitation. There should be no cumulative impact if rehabilitation is successful.	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Medium-low (-)</b>	<b>No Impact</b>
Degree to which the impact can be avoided:	Low	
Degree to which the impact can be managed:	High	
Degree to which the impact can be mitigated:	High	
Proposed mitigation:	See below	
Residual impacts:	Alien vegetation establishment in disturbed areas	
Cumulative impact post mitigation:	There should be no cumulative impact if rehabilitation is successful.	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Low (-)</b>	<b>No Impact</b>

Alternative:	Alternative A and B	Alternative C	No-Go Alternative
<b>OPERATIONAL PHASE</b> *Please refer to the aquatic assessment report, page 31 of Appendix G2.			
<b>Potential impact and risk:</b>	<b>Cumulative impacts on the aquatic resources of the area</b>		
Nature of impact:	Positive after mitigation		Negative
Extent and duration of impact:	Local and Long term		
Consequence of impact or risk:	Increased aquatic ecosystem integrity		Decreased aquatic ecosystem integrity
Probability of occurrence:	Probable		
Degree to which the impact can be reversed:	Reversible		
Indirect impacts:	Increased aquatic ecosystem integrity		Decreased aquatic ecosystem integrity
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Very Low (-)</b>	<b>Low (-)</b>	<b>Low (-)</b>
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Low (+)</b>	<b>Low (+)</b>	<b>Low (-)</b>

The **No-Go Alternative** will not impact the river directly, but failure of the sewer network due to lack of maintenance or capacity could have a negative indirect impact upon the river, should there be sewage leakages or overflows in future. Therefore, the No-Go Alternative would have a local but long-term negative impact, of moderate magnitude, upon aquatic biodiversity. This is an unfavourable

alternative as adequate sewerage infrastructure, and the maintenance thereof, is essential to society. With the application of mitigation, and the prevention of aquatic habitat loss or degradation, the project will indirectly assist in the protection of water resources from pollution.

## 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 3 below summarises the potential Impacts associated with the proposal. Please refer to the Section I (2) for the proposed mitigation measures to ensure the corresponding rating post mitigation. The findings of the Specialists have been taken into consideration in this BAR and the impact management measures identified by all the Specialists have been incorporated into the EMPr and will thus ensure that, through the implementation of the EMPr that the potential impacts are mitigated to the significance ratings as shown in Table 3 and that impacts to the environment for the proposal are minimised and that the proposal is undertaken in a sustainable manner.

**Table 3: Summary of the Impacts Post Mitigation**

Impact	Alternative A (Preferred Alternative)	Alternative B	Alternative C	No-Go Alternative
<b>Construction Phase</b>				
Terrestrial biodiversity	Low (-)	Low (-)	Low (-)	No Impact
Flora and SCC	Low (-)	Low (-)	Low (-)	No Impact
Aquatic habitat and biota	Low (-)	Low (-)	Low (-)	No Impact
Capital expenditure	Medium (+)	Medium (+)	Medium (+)	No Impact
Noise	Low (-)	Low (-)	Low (-)	No Impact
Temporary Job creation	Medium (+)	Medium (+)	Medium (+)	No Impact
<b>Construction and Operational Phase</b>				
Sedimentation and erosion	Low (-)	Low (-)	Low (-)	No Impact
Water quality	Very Low (-)	Very Low (-)	Low (-)	Medium (-)
<b>Operational Phase</b>				
Terrestrial biodiversity	Low (-)	Low (-)	Low (-)	No Impact
Flora and SCC	Low (-)	Low (-)	Low (-)	No Impact
Cumulative impacts on the aquatic resources	Low (+)	Low (+)	Low (+)	Low (-)

### **Specialists Reports Conclusions:**

#### **Botanical Assessment, Appendix G1:**

The affected vegetation type, albeit highly degraded, has been identified as Garden Route Granite Fynbos, which is currently listed as Critically Endangered. Given the linear nature of the project and the degraded state of the site, the impact on terrestrial biodiversity is of medium-low concern, prior to mitigation. The proposed pipeline also passes through an aquatic CBA and a CBA2, which form part of a minor biodiversity corridor that extends along the Skaapkop River into the George industrial area. One can expect a temporary impact on the functionality of the biodiversity network. Areas disturbed during the construction phase can be rehabilitated and should recover fully. Nearly all the recorded plant species are common and widespread in the region, with no SCC or protected tree species recorded.

It is therefore recommended that the project (as currently presented) be approved, but subject to the recommended mitigation measures.

## **Aquatic Assessment, Appendix G2:**

The aquatic habitats within a 500 metre radius of the proposed pipeline upgrades were identified and mapped on a desktop level utilising available data. Following the desktop findings, the infield site assessment confirmed the location and extent of these systems. Subsequent screening provided an indication of which of these systems may potentially be impacted upon by the project. It was determined that the Skaapkop River will be directly impacted by the proposed pipeline upgrades, and that the tributary stream may be indirectly disturbed by earthworks upslope during construction.

The Skaapkop River is a perennial upper foothills system within the South Eastern Coastal Belt. It has a relatively small catchment, originating on the coastal plateau, and flowing a short distance before entering the Indian Ocean. Development in the catchment and along the banks has significantly modified the river regime. The system has been subjected to riparian habitat loss and disturbance due to urban encroachment, erosion and sedimentation from catchment land surface changes, water pollution and channel straightening. Sewage overflows from the pump station, as well as a stormwater pipeline outlet, have caused significant water pollution. There is an existing pipeline crossing the river from the Schaapkop pump station and the upgrades will follow the same route. The impacts associated with the project will be very similar to those which occurred during the construction of the existing infrastructure and are unlikely to cause any further deterioration of ecological condition.

The impact significance upon aquatic biodiversity for the project was determined as Low after mitigation. The river is in a severely modified condition and the project activities, after mitigation, will not cause further deterioration of any water resources. The impacts can be decreased to acceptable levels provided that mitigation measures are implemented. Of the three design alternatives assessed, Option 3 (pipeline along riverbed) is the least preferred design/construction method from an aquatic biodiversity perspective, as it will cause the most disturbance to the river. Design Options 1 and 2 (bridge crossings) will have very low impact significance after mitigation, and either of these are preferred for the maintenance of aquatic biodiversity.

The proposed project requires a Water Use License (WUL) in terms of Chapter 4 and Section 21 of the National Water Act No. 36 of 1998, prior to the commencement of activities.

## **Terrestrial Biodiversity and Animal Species Compliance Statement, Appendix G3:**

The results of the report indicate the following:

- Faunal habitats on the site exist in a highly degraded state.
- The study area landscape supports a relatively impaired terrestrial faunal and avifaunal diversity with only relatively common species of "Least Concern" (IUCN, 2021) being present.
- Although the site supports some intact predator-prey dynamics, it harbours altered ecosystem dynamics.
- The site does not contain any subpopulations of, or suitable habitat for any of the mammal or avifaunal SCC considered.
- All habitats within and adjacent to the project footprint are retrieved as "Very low" SEI.
- A significant number of negative ecological impacts (illegal grazing through subsistence farming, significant human foot traffic, significant signs of pollution, a high incidence of alien and invasive vegetation, evidence of feral dog activity, poor water quality, and noise and vibration) emanate from the adjacent Lawaakamp suburb and will continue to degrade the on-site habitats in the near future.
- The project footprint is of a limited spatial extent (only 0.2 hectares) and will include an already degraded area which has been previously rehabilitated after laying of the initial 500mm rising main.
- Among the alternative stream crossings, Options 1 and 2 both entail that the new rising main will be similarly placed above this stream, thereby avoiding disturbance of this stream channel. To this end, either Options 1 and 2 are preferable from an ecological perspective.
- The project activities will be of a short term (less than a year).

- The site will likely be rehabilitated before the onset of the operational phase.

Taken together therefore, the site is of a lower sensitivity from a faunal biodiversity perspective and project activities will not have any further significant direct impacts on terrestrial biodiversity features in the study area landscape. The current development layout and associated activities are therefore supported from a faunal biodiversity perspective.

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

All impact management measures that were identified by all the Specialists have been included in the EMPr. Please refer to Tables 4 to 8 for the Specialists Impact Management Measures.

**AQUATIC BIODIVERSITY IMPACT ASSESSMENT**

**Table 4: Construction Phase Mitigation**

Impact to mitigate	Mitigation
Disturbance of aquatic habitat and biota - Clearance of vegetation, earthworks on the riverbanks, and further invasive alien plant infestation.	<ul style="list-style-type: none"> <li>• A construction method statement must be compiled and available on site. It must consider the buffer zone and include methods to avoid unnecessary disturbance and prevent material being washed downslope into the river.</li> <li>• The edges of the construction servitude relative to the aquatic habitat must be clearly staked-out and demarcated prior to construction commencing.</li> <li>• Removal of vegetation must only be when essential for the continuation of the project. Do not allow any disturbance to the adjoining natural vegetation cover or soils.</li> <li>• Access to and from the development area should be either via existing roads or within the construction servitude. Any contractor found working within No-Go areas must be fined as per fining schedule/system setup for the project.</li> <li>• Following construction, it is important to stabilise any steep, bare areas on the slope and river banks via geotextiles and/or revegetation.</li> <li>• It is the contractor's responsibility to continuously monitor the area for newly established alien species during the contract and establishment period, which if present must be removed. Removal of these species shall be undertaken in a way which prevents any damage to the remaining indigenous species and inhibits the re-infestation of the cleaned areas. Any use of herbicides in removing alien plant species is required to be investigated by the ECO before use.</li> <li>• It is recommended that a rehabilitation plan be compiled to return the disturbed areas (such as the turning area) which are within the riparian area, to the pre-construction state.</li> <li>• Monitoring of the project activities is essential to ensure the mitigation measures are implemented. Compliance with the mitigation recommendations must be audited by a suitably qualified independent Environmental Control Officer with an appropriately timed audit report, especially during work in the riparian zone.</li> </ul>

**Table 5: Construction and Operational Phase mitigation**

Impact to mitigate	Mitigation
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<p>Sedimentation and erosion - Vegetation clearing, earthworks, and exposure of bare soils within and upslope of the aquatic habitat.</p>	<ul style="list-style-type: none"> <li>• A construction method statement must be compiled and available on site. It must consider the buffer zone and include methods to avoid unnecessary disturbance and prevent material being washed downslope into the river.</li> <li>• Sedimentation must be minimised with appropriate measures. Any construction causing bare slopes and surfaces to be exposed to the elements must include measures to protect against erosion using covers, silt fences, sandbags, earthen berms etc. Effective stormwater management must include effective stabilisation of exposed soil.</li> <li>• All stockpiles must be protected and located in flat areas where run-off will be minimised and sediment recoverable.</li> <li>• Construction must have contingency plans for high rainfall events during construction. Even in the operational phase, measures to contain impacts caused during high rainfall events must be planned for and available for use.</li> <li>• The area must be maintained through alien invasive plant species removal (which is the landowner's responsibility regardless of mitigation associated with this project) and the establishment of indigenous vegetation cover to filter run-off before it enters the aquatic habitat.</li> <li>• The disturbed areas within the riparian areas must be rehabilitated to pre-construction state and vegetated with indigenous plants suited to the wetness regime of the location (obtain botanical input).</li> <li>• Following construction, it is important to stabilise any steep, bare areas on the transformed slope via geotextiles and/or revegetation. Erosion features that have developed due to construction are required to be stabilised. This may also include the need to deactivate any erosion headcuts/rills/gullies that may have developed.</li> </ul>
<p>Changes to surface water quality - During construction there are a number of potential pollution inputs into the aquatic systems (such as hydrocarbons and raw cement). During the operational phase, the sewage infrastructure poses a threat to the water quality.</p>	<ul style="list-style-type: none"> <li>• Mixing and/or decanting of all chemicals and hazardous substances must take place on a tray, shutter boards or on an impermeable surface and must be protected from stormwater.</li> <li>• Cement/concrete batching is to be located in an area of low environmental sensitivity away from the river channel and pre-approved by the ECO. No batching activities shall occur on unprotected ground. Adequate surface protection will be required. Concrete batching should be restricted to a level and bunded/sealed surface above the riverbanks.</li> <li>• Contaminated water containing fuel, oil or other hazardous substances must never be released into the environment. It must be disposed of at a registered hazardous landfill site.</li> <li>• In the operational phase, no wastewater must be allowed to enter the surrounding environment. The National Water Act imposes 'duty of care' on all landowners, to ensure that water resources are not polluted. The following Clause in terms of the National Water Act is applicable in this case: 19 (1) "An owner of land, a person in control of land or a person who occupies or uses the land on which (a) any activity or process is or was performed or undertaken; which causes, has caused or likely to cause pollution of a water resource, must take all reasonable measures to prevent any such pollution from occurring, continuing or</li> </ul>

	<p>recurring". In the context of Eskom loadshedding, and relatively frequent outages in South Africa, it is important that pump stations are well managed and have the appropriate components and back-ups for all scenarios.</p> <ul style="list-style-type: none"> <li>• Pumps, pipelines and other equipment should be regularly inspected and maintained.</li> <li>• The Department of Water regional office should be notified, as soon as possible, of any significant chemical spill or leakage to the environment where there is the potential to contaminate surface water or groundwater.</li> </ul>
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**Botanical Assessment**

**Table 6: Construction Phase Mitigation**

<b>Impact to mitigate</b>	<b>Mitigation</b>
Impact on terrestrial biodiversity	<ul style="list-style-type: none"> <li>• During the construction phase, demarcate/fence off the construction footprint. Restrict all construction activities, such as stockpiling, parking and cement mixing, to already disturbed areas away from natural vegetation. The contractor(s) must be made aware of the sensitive surroundings. The fynbos outside the footprint must be declared a 'no-go' area and not be disturbed in any way.</li> <li>• Pollutant substances brought onto site must be properly contained. Cement/concrete mixing must be contained on impervious and bunded surfaces. No cement mixing is allowed inside vegetated areas. Cement water is highly alkaline and considered toxic.</li> <li>• Remove topsoil and/or seedbearing indigenous plant material from the vegetated areas to be disturbed for use in the rehabilitation of disturbed areas after construction. Avoid using seed-bearing alien plant material for rehabilitation purposes.</li> <li>• Rehabilitate/revegetate all the disturbed surfaces. Erosion prevention measures may be needed on the steep slopes, such as silt fences, logs or netting, to slow down runoff and potential erosion. Mulching and seeding with indigenous grass seed may also be needed. However, due to the linear nature of the project, it is expected that the disturbed areas will recover relatively quickly without the need for much intervention.</li> <li>• Engage in alien clearing, focussing on invasive species such as black wattle and bugweed. These species are category 2 and 1b invaders that require compulsory control as part of an invasive species control programme. Their control will become a medium-term maintenance requirement.</li> <li>• Allow at least 24 months for the monitoring of rehabilitation success and alien infestation post construction.</li> </ul>
Impact on flora and SCC	<ul style="list-style-type: none"> <li>• Search and rescue succulents and bulbs from the construction footprint for replanting in the disturbed areas after construction. Topsoil, cuttings and seedbearing plant material can also be salvaged for this purpose, especially cuttings from <i>Carpobrotus edulis</i>. Geophytes should be removed along with some soil, placed in gel, bagged and then taken to a nursery for temporary storage or transplanted directly in the receiving area. Ideally, bulbs</li> </ul>

should be salvaged during leaf fall, but before or after flowering.

**Table 7: Operational Phase Mitigation**

Impact to mitigate	Mitigation
Impact on terrestrial biodiversity	<ul style="list-style-type: none"> <li>• Remove topsoil and/or seedbearing indigenous plant material from the vegetated areas to be disturbed for use in the rehabilitation of disturbed areas after construction. Avoid using seed-bearing alien plant material for rehabilitation purposes.</li> <li>• Rehabilitate/revegetate all the disturbed surfaces. Erosion prevention measures may be needed on the steep slopes, such as silt fences, logs or netting, to slow down runoff and potential erosion. Mulching and seeding with indigenous grass seed may also be needed. However, due to the linear nature of the project, it is expected that the disturbed areas will recover relatively quickly without the need for much intervention.</li> <li>• Engage in alien clearing, focussing on invasive species such as black wattle and bugweed. These species are category 2 and 1b invaders that require compulsory control as part of an invasive species control programme. Their control will become a medium-term maintenance requirement.</li> <li>• It is recommended that a strip of at least 10 m wide on both sides of the pipeline be monitored for aliens during the maintenance period. The aliens also add to the fuel load and increase the risk of wildfires in the long term.</li> <li>• Allow at least 24 months for the monitoring of rehabilitation success and alien infestation post construction.</li> </ul>
Impact on flora and SCC	<ul style="list-style-type: none"> <li>• Search and rescue succulents and bulbs from the construction footprint for replanting in the disturbed areas after construction. Topsoil, cuttings and seedbearing plant material can also be salvaged for this purpose, especially cuttings from <i>Carpobrotus edulis</i>. Geophytes should be removed along with some soil, placed in gel, bagged and then taken to a nursery for temporary storage or transplanted directly in the receiving area. Ideally, bulbs should be salvaged during leaf fall, but before or after flowering.</li> </ul>

**TERRESTRIAL BIODIVERSITY AND ANIMAL SPECIES COMPLIANCE STATEMENT**

**Table 8: Mitigation**

Impact to mitigate	Mitigation
Direct impacts on the resident fauna	<ul style="list-style-type: none"> <li>• The development footprint should be kept at the provided minimum to minimise disturbance of surrounding natural habitats on the site.</li> <li>• Every effort should be made to save and relocate any mammal, reptile, amphibian, bird, or invertebrate that cannot flee of its own accord, encountered during site preparation (i.e., to avoid and minimise the direct mortality of faunal species). These animals</li> </ul>

	<p>should be relocated to a suitable habitat area immediately outside the project footprint, but under no circumstance to an area further away.</p> <ul style="list-style-type: none"> <li>• The new rising main should follow the existing raised position above the non-perennial stream in the eastern section of the project footprint to avoid disturbance of the stream channel (as is the case listed under Options 1 and 2 planned for this stream crossing).</li> <li>• The rising main route should be back-filled (although this will likely be the case) in order to rehabilitate this footprint and not cause a physical movement barrier to fauna in the study area landscape.</li> </ul>
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3. List the specialist investigations and the impact management measures that will **not** be implemented and provide an explanation as to why these measures will not be implemented.

All impact management measures that were identified by all the Specialists have been included in the EMPr. Please refer to Tables 4 to 8 for the Specialists Impact Management Measures.

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

During the construction phase the surrounding community will be temporarily inconvenienced by the construction noise impacts however this impact is temporary in nature. Labourers from the communities will be used as labourer 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.

According to the Aquatic Assessment Report, the project will not reduce the ecological resilience of the river to future climate changes.

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

No conflicting recommendations

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

All impact management measures that were identified by all the Specialists have been included in the EMPr. Please refer to Tables 4 to 8 for the Specialists Impact Management Measures.

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

**Table 9: Mitigation hierarchy**

MITIGATION HIERARCHY		
1	AVOID IMPACTS	As the proposal is to upgrade an existing pipeline the impacts cannot be avoided at this location.
2	MINIMISE IMPACTS	Alternatives were explored to find the option with the least impact on the environment, this resulted in the preferred alternative to minimize the impact of the proposal.
3	RECTIFY	The disturbances created by the construction phase will be rehabilitated in accordance with the EMPr.
4	OFFSET	Not necessary as no residual impacts not addressed by the previous steps of the mitigation hierarchy

## SECTION J: GENERAL

### 1. Environmental Impact Statement

1.1.	Provide a summary of the key findings of the EIA.			
<p>Table 10 below summarises the potential Impacts associated with the proposal. Please refer to the Section I (2) for the proposed mitigation measures to ensure the corresponding rating post mitigation. The findings of the Specialists have been taken into consideration in this BAR and the impact management measures identified by all the Specialists have been incorporated into the EMPr and will thus ensure that, through the implementation of the EMPr that the potential impacts are mitigated to the significance ratings as shown in Table 10 and that impacts to the environment for the proposal are minimised and that the proposal is undertaken in a sustainable manner.</p>				
<b>Table 10: Summary of the Impacts Post Mitigation</b>				
Impact	Alternative A (Preferred Alternative)	Alternative B	Alternative C	No-Go Alternative
<b>Construction Phase</b>				
Terrestrial biodiversity	Low (-)	Low (-)	Low (-)	No Impact
Flora and SCC	Low (-)	Low (-)	Low (-)	No Impact
Aquatic habitat and biota	Low (-)	Low (-)	Low (-)	No Impact
Capital expenditure	Medium (+)	Medium (+)	Medium (+)	No Impact
Noise	Low (-)	Low (-)	Low (-)	No Impact
Temporary Job creation	Medium (+)	Medium (+)	Medium (+)	No Impact
<b>Construction and Operational Phase</b>				
Sedimentation and erosion	Low (-)	Low (-)	Low (-)	No Impact
Water quality	Very Low (-)	Very Low (-)	Low (-)	Medium (-)
<b>Operational Phase</b>				
Terrestrial biodiversity	Low (-)	Low (-)	Low (-)	No Impact
Flora and SCC	Low (-)	Low (-)	Low (-)	No Impact
Cumulative impacts on the aquatic resources	Low (+)	Low (+)	Low (+)	Low (-)
<b><u>Specialists Reports Conclusions:</u></b>				
<b>Botanical Assessment, Appendix G1:</b>				
<p>The affected vegetation type, albeit highly degraded, has been identified as Garden Route Granite Fynbos, which is currently listed as Critically Endangered. Given the linear nature of the project and the degraded state of the site, the impact on terrestrial biodiversity is of medium-low concern, prior to mitigation. The proposed pipeline also passes through an aquatic CBA and a CBA2, which form part of a minor biodiversity corridor that extends along the Skaapkop River into the George industrial area. One can expect a temporary impact on the functionality of the biodiversity network. Areas disturbed during the construction phase can be rehabilitated and should recover fully. Nearly all the recorded plant species are common and widespread in the region, with no SCC or protected tree species recorded.</p>				

It is therefore recommended that the project (as currently presented) be approved, but subject to the recommended mitigation measures.

### **Aquatic Assessment, Appendix G2:**

The aquatic habitats within a 500 metre radius of the proposed pipeline upgrades were identified and mapped on a desktop level utilising available data. Following the desktop findings, the infield site assessment confirmed the location and extent of these systems. Subsequent screening provided an indication of which of these systems may potentially be impacted upon by the project. It was determined that the Skaapkop River will be directly impacted by the proposed pipeline upgrades, and that the tributary stream may be indirectly disturbed by earthworks upslope during construction.

The Skaapkop River is a perennial upper foothills system within the South Eastern Coastal Belt. It has a relatively small catchment, originating on the coastal plateau, and flowing a short distance before entering the Indian Ocean. Development in the catchment and along the banks has significantly modified the river regime. The system has been subjected to riparian habitat loss and disturbance due to urban encroachment, erosion and sedimentation from catchment land surface changes, water pollution and channel straightening. Sewage overflows from the pump station, as well as a stormwater pipeline outlet, have caused significant water pollution. There is an existing pipeline crossing the river from the Schaapkop pump station and the upgrades will follow the same route. The impacts associated with the project will be very similar to those which occurred during the construction of the existing infrastructure and are unlikely to cause any further deterioration of ecological condition.

The impact significance upon aquatic biodiversity for the project was determined as Low after mitigation. The river is in a severely modified condition and the project activities, after mitigation, will not cause further deterioration of any water resources. The impacts can be decreased to acceptable levels provided that mitigation measures are implemented. Of the three design alternatives assessed, Option 3 (pipeline along riverbed) is the least preferred design/construction method from an aquatic biodiversity perspective, as it will cause the most disturbance to the river. Design Options 1 and 2 (bridge crossings) will have very low impact significance after mitigation, and either of these are preferred for the maintenance of aquatic biodiversity.

The proposed project requires a Water Use License (WUL) in terms of Chapter 4 and Section 21 of the National Water Act No. 36 of 1998, prior to the commencement of activities.

### **Terrestrial Biodiversity and Animal Species Compliance Statement, Appendix G3:**

The results of the report indicate the following:

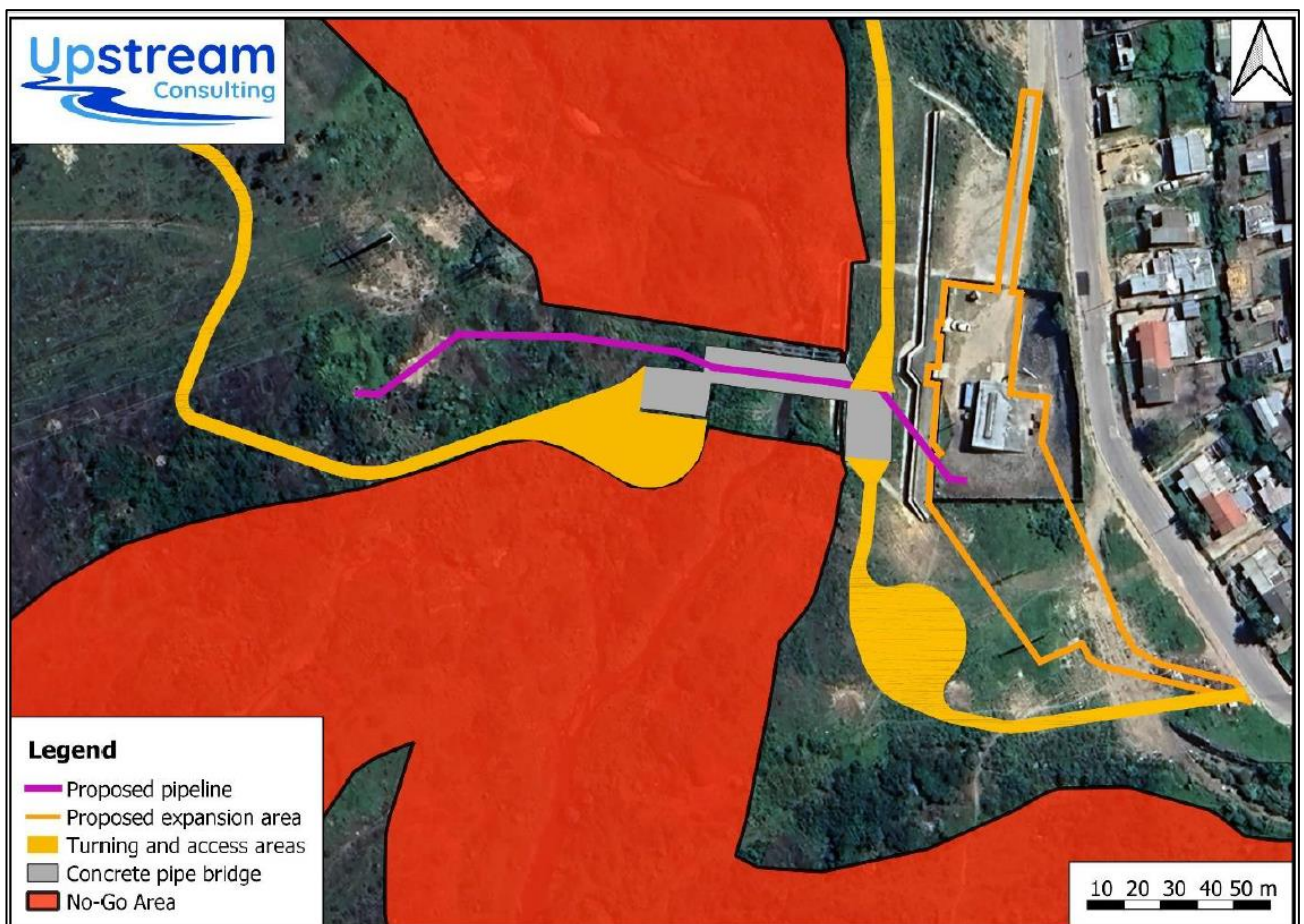
- Faunal habitats on the site exist in a highly degraded state.
- The study area landscape supports a relatively impaired terrestrial faunal and avifaunal diversity with only relatively common species of "Least Concern" (IUCN, 2021) being present.
- Although the site supports some intact predator-prey dynamics, it harbours altered ecosystem dynamics.
- The site does not contain any subpopulations of, or suitable habitat for any of the mammal or avifaunal SCC considered.
- All habitats within and adjacent to the project footprint are retrieved as "Very low" SEI.
- A significant number of negative ecological impacts (illegal grazing through subsistence farming, significant human foot traffic, significant signs of pollution, a high incidence of alien and invasive vegetation, evidence of feral dog activity, poor water quality, and noise and vibration) emanate from the adjacent Lawaikamp suburb and will continue to degrade the on-site habitats in the near future.
- The project footprint is of a limited spatial extent (only 0.2 hectares) and will include an already degraded area which has been previously rehabilitated after laying of the initial 500mm rising main.

- Among the alternative stream crossings, Options 1 and 2 both entail that the new rising main will be similarly placed above this stream, thereby avoiding disturbance of this stream channel. To this end, either Options 1 and 2 are preferable from an ecological perspective.
- The project activities will be of a short term (less than a year).
- The site will likely be rehabilitated before the onset of the operational phase.

Taken together therefore, the site is of a lower sensitivity from a faunal biodiversity perspective and project activities will not have any further significant direct impacts on terrestrial biodiversity features in the study area landscape. The current development layout and associated activities are therefore supported from a faunal biodiversity perspective.

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)

As seen from Figure 25, the sensitive area of the proposed site is the river and its riparian vegetation. As activities have to be undertaken within the river this area cannot be avoided. The activities within the river must however be strictly limited to the smallest possible working area to reduce the disturbances and impact to the river.



**Figure 25: Aquatic buffer map**

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**

- Temporary job opportunities during the construction phase
- Increased pumping capacity for the sewerage network
- Reduced chance of spillages due to pumpstation being overloaded
- Positive cumulative impacts to the river system
- Delivery of safe, secure wastewater system for citizens
- Capital expenditure in George

**Negatives**

- Temporary noise and construction related inconveniences.
- Temporary disturbance and impacts to the natural environment

**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

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

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

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

Impact management objectives and impact management outcomes included in the EMPr

<b>PRE-CONSTRUCTION PHASE</b>	
<b>IMPACT MANAGEMENT OBJECTIVES</b>	<b>IMPACT MANAGEMENT OUTCOMES</b>
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	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
<b>CONSTRUCTION PHASE</b>	
Limit the impact on terrestrial biodiversity	Terrestrial biodiversity is only temporarily impacted within the footprint and reasonable working corridor
Reduce the loss of indigenous flora and SCC	Indigenous flora and SCC are searched and rescued from the footprint and used for rehabilitation
Minimize the potential disturbance of aquatic habitat and biota	Aquatic habitat and biota are only temporarily impacted within the footprint and reasonable working corridor
To prevent/limit sedimentation and erosion	Sedimentation is limited and erosion is prevented



	Prevent pollution of surface water	No pollutants enter the river and negatively impact the water quality
	To limit noise generated by construction activities	No avoidable noise impacts emanate from the site during the construction phase
	To create employment opportunities with potential for skills transfer, for members of the local community	The local community benefits from the employment opportunities created during the construction phase.
<b>POST CONSTRUCTION REHABILITATION PHASE</b>		
	To rehabilitate all areas disturbed by construction activities in an environmentally sensitive manner	The site is neat and tidy and all exposed surfaces are suitably covered/ stabilised.  There is no construction-related waste or pollution remaining on site.
	Prevent pollution of surface water	No pollutants enter the river and negatively impact the water quality
	Prevent alien vegetation establishment on the site	Only indigenous vegetation species establish on the disturbed areas
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.	
<p>The EMPr must be implemented, this is however a standard condition of Environmental Authorisation.</p> <p>All mitigation measures from the specialists have been incorporated into the EMPr and as such are conditional to the environmental authorisation.</p>		
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.	
<p>The preferred Alternative A should be authorised.</p> <p>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 low significance. As the proposal is to upgrade a section of the existing sewerage pipeline the negative impacts associated with the proposal are far outweighed by the positive impact of maintaining and upgrading existing sewerage infrastructure.</p> <p>Proposed Conditions of Authorisation:</p> <ul style="list-style-type: none"> <li>• The EMPr must be implemented.</li> <li>• An ECO must be appointed to monitor compliance with the EMPr</li> </ul>		
2.4.	Provide a description of any assumptions, uncertainties and gaps in knowledge that relate to the assessment and mitigation measures proposed.	
<p>It is assumed that the proposed mitigation measures as listed in this report and the EMPr (Appendix H) will be implemented and adhered to as the significance of impacts ratings are conditional on implementation of the mitigation measures.</p>		
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.	
<p><b><u>Time required to undertake the activities:</u></b></p> <p>1 year for tendering purposes  2 years construction and rehabilitation phase  2 years for follow up alien clearing and rehabilitation monitoring</p> <p>Total proposed validity period of EA: 5 years</p>		

### 3. Water

<p>Since the Western Cape is a water scarce area explain what measures will be implemented to avoid the use of potable water during the development and operational phase and what measures will be implemented to reduce your water demand, save water and measures to reuse or recycle water.</p>
<p>Proposal will not use water</p>

#### 4. Waste

Explain what measures have been taken to reduce, reuse or recycle waste.
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Only packaging waste will be generated by materials brought to site. An integrated waste management system must be adopted on site in accordance with the EMPr. Unrecyclable items will be taken to the George landfill.
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#### 5. Energy Efficiency

8.1.	Explain what design measures have been taken to ensure that the development proposal will be energy efficient.
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Not applicable to the proposal	
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## SECTION K: DECLARATIONS

### DECLARATION OF THE APPLICANT

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

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

- I am fully aware of my responsibilities in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), the Environmental Impact Assessment ("EIA") Regulations, and any relevant Specific Environmental Management Act and that failure to comply with these requirements may constitute an offence in terms of relevant environmental legislation;
- I am aware of my general duty of care in terms of Section 28 of the NEMA;
- I am aware that it is an offence in terms of Section 24F of the NEMA should I commence with a listed activity prior to obtaining an Environmental Authorisation;
- I appointed the Environmental Assessment Practitioner ("EAP") (if not exempted from this requirement) which:
  - meets all the requirements in terms of Regulation 13 of the NEMA EIA Regulations; or
  - meets all the requirements other than the requirement to be independent in terms of Regulation 13 of the NEMA EIA Regulations, but a review EAP has been appointed who does meet all the requirements of Regulation 13 of the NEMA EIA Regulations;
- I will provide the EAP and any specialist, where applicable, and the Competent Authority with access to all information at my disposal that is relevant to the application;
- I will be responsible for the costs incurred in complying with the NEMA EIA Regulations and other environmental legislation including but not limited to –
  - costs incurred for the appointment of the EAP or any legitimately person contracted by the EAP;
  - costs in respect of any fee prescribed by the Minister or MEC in respect of the NEMA EIA Regulations;
  - Legitimate costs in respect of specialist(s) reviews; and
  - the provision of security to ensure compliance with applicable management and mitigation measures;
- I am responsible for complying with conditions that may be attached to any decision(s) issued by the Competent Authority, hereby indemnify, the government of the Republic, the Competent Authority and all its officers, agents and employees, from any liability arising out of the content of any report, any procedure or any action for which I or the EAP is responsible in terms of the NEMA EIA Regulations and any Specific Environmental Management Act.

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

  
Signature of the Applicant:

2024-01-22

Date:

George Municipality: Water & Sanitation: Civil Engineering Services

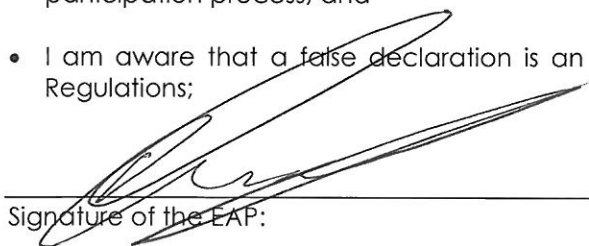
Name of company (if applicable):

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

I .....Michael Bennett ....., EAPASA Registration number .....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:

22 January 2024

Sharples Environmental Services cc

Name of company (if applicable):