



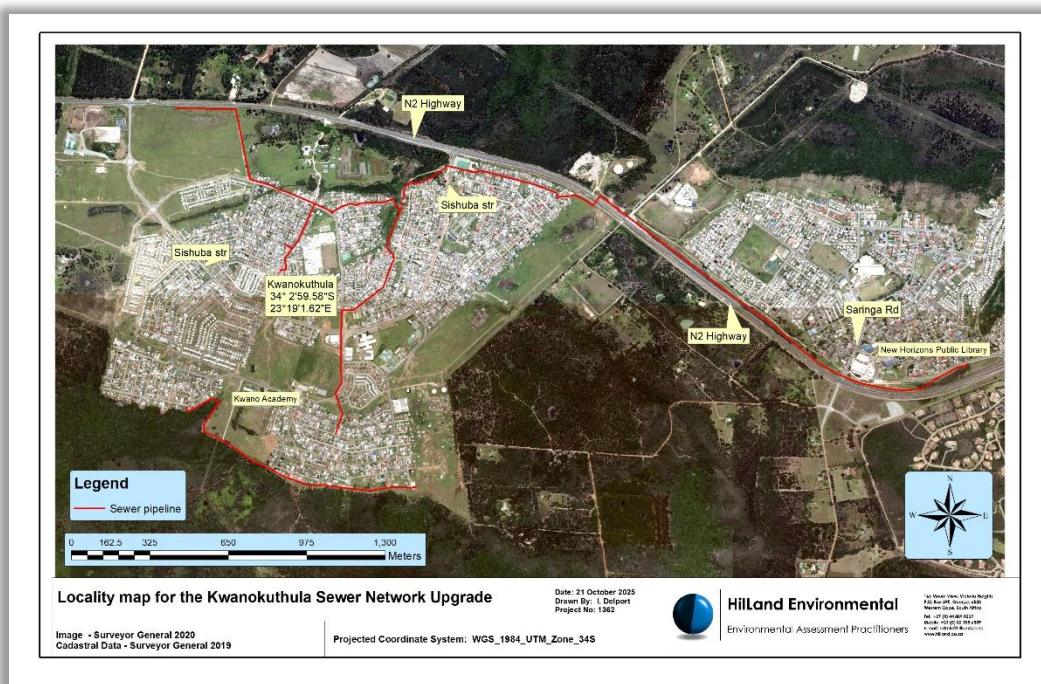
HillLand Environmental

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www.hilland.co.za

DRAFT BASIC ASSESSMENT REPORT (BAR) FOR THE PROPOSED UPGRADE OF THE KWANOKUTHULA SEWER INFRASTRUCTURE, PLETTENBERG BAY



Compiled by	HillLand Environmental
HillLand reference	PLE26/1362/08
Date	7 April 2026
DEADP application reference	To be issued
DEADP NOI reference	16/3/3/6/7/1/D1/10/0401/25

ISSUED BY:

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Submitted for:

Public review and comment

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TEAM:

Client:



EAP:



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BioCensus (Pty) Ltd

Agriculture specialist

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Materials Testing Laboratory

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**Western Cape
Government**

Department of Environmental Affairs and
Development Planning

BASIC ASSESSMENT REPORT

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

APRIL 2024



BASIC ASSESSMENT REPORT

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

APRIL 2024

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

GENERAL PROJECT DESCRIPTION

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

The existing sewer infrastructure is aged and undersized for the current demand and need. This has resulted in frequent blockages, pipe failures and sewage overflows within the residential, open space areas and eventually to the Roodefontein Dam which is one of Plettenberg Bay's clean water sources. In addition, the proposed upgrades will allow for linking services for various expansion areas in Kwanokuthula (housing, education and commercial facilities).

The proposal entails the upgrading of the Kwanokuthula sewer infrastructure in Plettenberg Bay (PHASE 1 and 2). The proposal includes:

- upgrade of existing pipes and associated infrastructure (e.g. pipelines and manholes)
- installation of new connections to future development areas
- realignment of the network where it is in a midblock
- upgrades and expansion of the pump stations (pump station (PS) 1 and 3) to be able to accommodate the network upgrades and associated capacity increases
- implementation of gabion riparian stabilisation at pump station 1 to protect pump station 1's infrastructure

The maximum diameter pipes to be installed up to 355mm, with the capacity to reach a maximum flow rate of 300 l/s.

All work will be undertaken in accordance with the engineering method statement and MMP/EMPr that incorporates mitigation measures recommended by various specialists that formed part of the assessment. In accordance with the MMP/EMPr a working area of up to 6m for pipe installations will be required. Where existing structures or the bordering forest areas limit working area, the working area will be reduced to stay within the existing servitude.

The above requirements were highlighted in the Sewer Master Plan for Bitou Municipality (June 2020) prepared by GLS and the Municipality is budgeting to complete sections of the proposed upgrades in 2028.

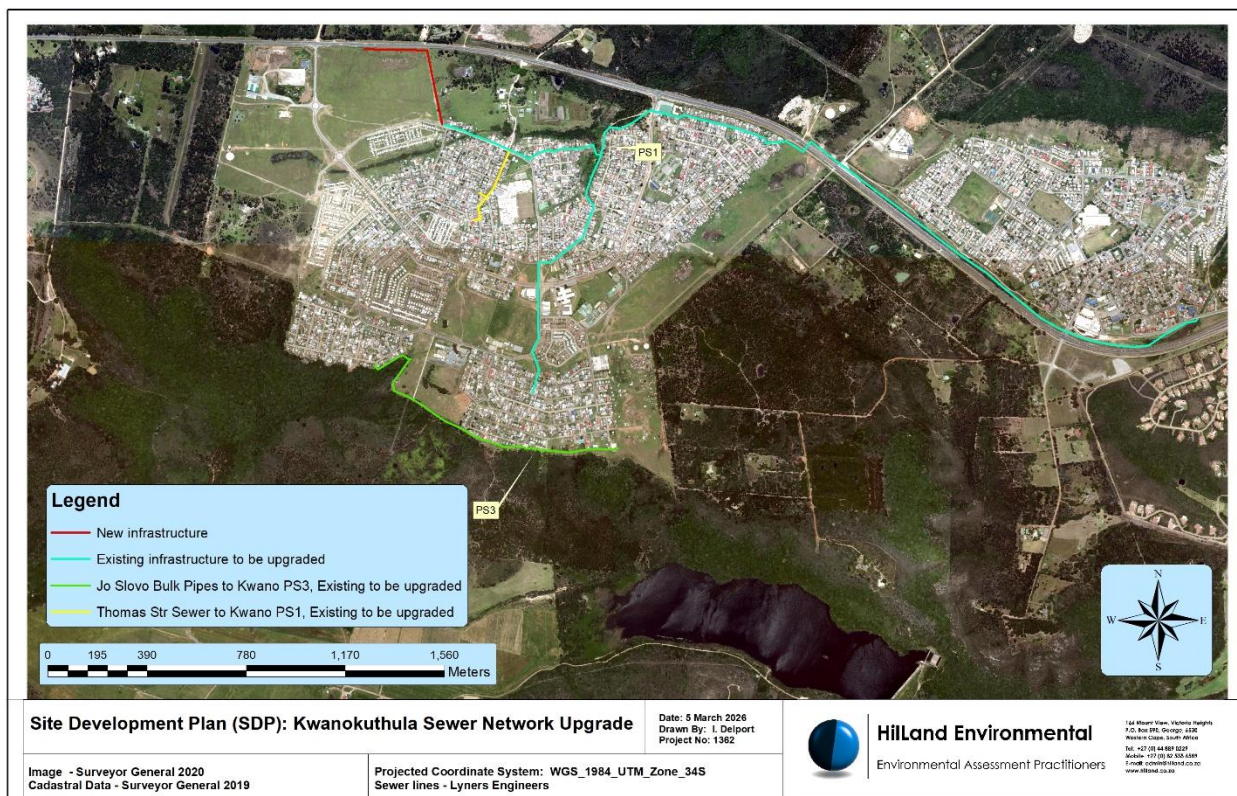


Figure 1: Plan showing all pipelines and pump stations (1 and 3) that will be upgraded. Note this map also shows the pipelines in the urban area which do not require NEMA authorisation but which form part of the overall upgrade required.

A separate WUL application is being undertaken by Upstream Consulting in order to ensure that the required infrastructure has the necessary Water Use Licences (see appendix N). In terms of NEMLAA, synchronisation of the authorisation processes for the NEMA EIA listed activities and the WUL is being ensured.

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

1. **The purpose** of this template is to provide a format for the Basic Assessment report as set out in Appendix 1 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), Environmental Impact Assessment ("EIA") Regulations, 2014 (as amended) in order to ultimately obtain Environmental Authorisation.
2. The Environmental Impact Assessment ("EIA") Regulations is defined in terms of Chapter 5 of the National Environmental Management Act, 19998 (Act No. 107 of 1998) ("NEMA") hereinafter referred to as the "NEMA EIA Regulations".
3. *Submission of documentation, reports and other correspondence:*

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

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

DEADPEIAAdmin@westerncape.gov.za

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

DEADPEIAAdmin.George@westerncape.gov.za

Directorate: Development Management (Region 3):
Garden Route District Municipal area and Central Karoo District Municipal area

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

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

4. The required information must be typed within the spaces provided in this Basic Assessment Report ("BAR"). The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided.
5. All applicable sections of this BAR must be completed.
6. Unless protected by law, all information contained in, and attached to this BAR, will become public information on receipt by the Competent Authority. If information is not submitted with this BAR due to such information being protected by law, the applicant and/or Environmental Assessment Practitioner ("EAP") must declare such non-disclosure and provide the reasons for believing that the information is protected.
7. This BAR is current as of **April 2024**. It is the responsibility of the Applicant/ EAP to ascertain whether subsequent versions of the BAR have been released by the Department. Visit this Department's website at <http://www.westerncape.gov.za> to check for the latest version of this BAR.
8. This BAR is the standard format, which must be used in all instances when preparing a BAR for Basic Assessment applications for an environmental authorisation in terms of the NEMA EIA Regulations when the Western Cape Government Department of Environmental Affairs and Development Planning ("DEA&DP") is the Competent Authority.
9. Unless otherwise indicated by the Department, one hard copy and one electronic copy of this BAR must be submitted to the Department at the postal address given below or by delivery thereof to the Registry Office of the Department. Reasonable access to copies of this Report must be provided to the relevant Organs of State for consultation purposes, which may, if so indicated by the Department, include providing a printed copy to a specific Organ of State.
10. This BAR must be duly dated and originally signed by the Applicant, EAP (if applicable) and Specialist(s) and must be submitted to the Department at the details provided below.
11. The Department's latest Circulars pertaining to the "One Environmental Management System" and the EIA Regulations, any subsequent Circulars, and guidelines must be taken into account when completing this BAR.

12. Should a water use licence application be required in terms of the National Water Act, 1998 (Act No. 36 of 1998) ("NWA"), the "One Environmental System" is applicable, specifically in terms of the synchronisation of the consideration of the application in terms of the NEMA and the NWA. Refer to this Department's Circular EADP 0028/2014: One Environmental Management System.
13. Where Section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) ("NHRA") is triggered, a copy of Heritage Western Cape's final comment must be attached to the BAR.
14. The Screening Tool developed by the National Department of Environmental Affairs must be used to generate a screening report. Please use the Screening Tool link <https://screening.environment.gov.za/screeningtool> to generate the Screening Tool Report. The screening tool report must be attached to this BAR.
15. Where this Department is also identified as the Licencing Authority to decide on applications under the National Environmental Management: Air Quality Act (Act No. 29 of 2004) ('NEM:AQA'), the submission of the Report must also be made as follows, for-

Waste Management Licence Applications, this report must also (i.e., another hard copy and electronic copy) be submitted for the attention of the Department's Waste Management Directorate (Tel: 021-483-2728/2705 and Fax: 021-483-4425) at the same postal address as the Cape Town Office.

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

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

MAPS

Provide a location map (see below) as Appendix A1 to this BAR that shows the location of the proposed development and associated structures and infrastructure on the property.	
Locality Map:	The scale of the locality map must be at least 1:50 000. For linear activities or development proposals of more than 25 kilometres, a smaller scale e.g., 1:250 000 can be used. The scale must be indicated on the map. The map must indicate the following: • an accurate indication of the project site position as well as the positions of the alternative sites, if any; • road names or numbers of all the major roads as well as the roads that provide access to the site(s) • a north arrow; • a legend; and • a linear scale.

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

ACRONYMS

DFFE:	Department of Forestry, Fisheries and Environment
DEA& DP:	Department of Environmental Affairs and Development Planning
DHS:	Department of Human Settlement
DoA:	Department of Agriculture
DoH:	Department of Health
DWS:	Department of Water and Sanitation

EMPr:	Environmental Management Programme
HWC:	Heritage Western Cape
NFEPA:	National Freshwater Ecosystem Protection Assessment
NSBA:	National Spatial Biodiversity Assessment
TOR:	Terms of Reference
WCBSP:	Western Cape Biodiversity Spatial Plan
WCG:	Western Cape Government

ATTACHMENTS

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

The following checklist of attachments must be completed.

APPENDIX			✓ (Tick) or x (cross)
Appendix A:	Maps		
	Appendix A1:	Locality Map	✓
	Appendix A2:	Coastal Risk Zones as delineated in terms of ICMA for the Western Cape by the Department of Environmental Affairs and Development Planning	N/A not located within any
	Appendix A3:	Map with the GPS co-ordinates for linear activities	✓
Appendix B:	Appendix B1:	Site development plan(s) - Preferred SDP - Engineering plans & KML - Typical watercourse crossing detail - Riverbank stabilisation	✓
	Appendix B2	A map of appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffer areas;	✓
Appendix C:	Photographs		✓
Appendix D:	Biodiversity overlay map		✓
Appendix E:	Permit(s) / license(s) / exemption notice, agreements, comments from State Department/Organs of state and service letters from the municipality.		
	Appendix E1:	Final comment/ROD from HWC	✓
	Appendix E2:	Copy of comment from Cape Nature	✓ NOI/WULA Pending DBAR
	Appendix E3:	Final Comment from the DWS	Pending, WULA in process
	Appendix E4:	Comment from the DEA: Oceans and Coast	N/A
	Appendix E5:	Comment from the DAFF	Pending

	Appendix E6:	Comment from WCG: Transport and Public Works	✓ NOI/WULA Pending DBAR
	Appendix E7:	Comment from WCG: DoA	Pending
	Appendix E8:	Comment from WCG: DHS	N/A
	Appendix E9:	Comment from WCG: DoH	Pending
	Appendix E10:	Comment from DEA&DP: Pollution Management	Pending
	Appendix E11:	Comment from DEA&DP: Waste Management	N/A
	Appendix E12:	Comment from DEA&DP: Biodiversity	N/A
	Appendix E13:	Comment from DEA&DP: Air Quality	N/A
	Appendix E14:	Comment from DEA&DP: Coastal Management	N/A
	Appendix E15:	Comment from the local authority	N/A – local authority is the applicant
	Appendix E16:	Confirmation of all services (water, electricity, sewage, solid waste management)	N/A to the proposal
	Appendix E17:	Comment from the District Municipality	Pending
	Appendix E18:	Copy of an exemption notice	N/A
	Appendix E19	Pre-approval for the reclamation of land	N/A
	Appendix E20:	Proof of agreement/TOR of the specialist studies conducted.	Refer to reports attached to Appendix G Terrestrial specialist – Page 9 Aquatic specialist – Page 17
	Appendix E21:	Proof of land use rights	N/A
	Appendix E22:	Proof of public participation agreement for linear activities	Application acknowledgement
Appendix F:	Public participation information: including a copy of the register of I&APs, the comments and responses Report, proof of notices, advertisements and any other public participation information as is required. PPP Report		✓

	Annexures: <table><tr><td>Annexure A</td><td>NOI & WULA: proof of notifications Draft BAR: proof of notifications</td></tr><tr><td>Annexure B</td><td>Legal adverts</td></tr><tr><td>Annexure C</td><td>Site notices</td></tr><tr><td>Annexure D</td><td>List of registered I&APs</td></tr><tr><td>Annexure E</td><td>NOI & WULA: comments received HWC confirmation</td></tr></table>	Annexure A	NOI & WULA: proof of notifications Draft BAR: proof of notifications	Annexure B	Legal adverts	Annexure C	Site notices	Annexure D	List of registered I&APs	Annexure E	NOI & WULA: comments received HWC confirmation									
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Annexure C	Site notices																			
Annexure D	List of registered I&APs																			
Annexure E	NOI & WULA: comments received HWC confirmation																			
Appendix G:	Specialist Report(s) - Agriculture compliance statement - Terrestrial biodiversity, plant and animal species assessment - Aquatic biodiversity assessment and full WULA application	✓																		
Appendix H:	EMPr Annexures: <table><tr><td>Annexure A</td><td>Locality Map</td></tr><tr><td>Annexure B</td><td>Preferred SDPs</td></tr><tr><td>Annexure C</td><td>Environmental Induction Sheet and Register</td></tr><tr><td>Annexure D</td><td>Method Statement Form</td></tr><tr><td>Annexure E</td><td>Register of Rescued Indigenous Vegetation</td></tr><tr><td>Annexure F</td><td>Protected Plant Species Lists</td></tr><tr><td>Annexure G</td><td>CV of EAPs</td></tr><tr><td>Annexure H</td><td>Engineering Method Statement</td></tr><tr><td>Annexure I</td><td>Heritage Chance find procedures</td></tr></table>	Annexure A	Locality Map	Annexure B	Preferred SDPs	Annexure C	Environmental Induction Sheet and Register	Annexure D	Method Statement Form	Annexure E	Register of Rescued Indigenous Vegetation	Annexure F	Protected Plant Species Lists	Annexure G	CV of EAPs	Annexure H	Engineering Method Statement	Annexure I	Heritage Chance find procedures	✓
Annexure A	Locality Map																			
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Annexure H	Engineering Method Statement																			
Annexure I	Heritage Chance find procedures																			
Appendix I:	Screening tool report and site sensitivity verification report (SSVR)	✓																		
Appendix J:	The impact and risk assessment for each alternative	Included in the BAR																		
Appendix K:	Need and desirability for the proposed activity or development in terms of this Department's guideline on Need and Desirability (March 2013)/DEA Integrated Environmental Management Guideline	Included in the BAR																		
Appendix L:	Engineering report and appendices	✓																		
Appendix M:	Geotechnical input	✓																		
Appendix N:	CV of EAPs	✓																		

SECTION A: ADMINISTRATIVE DETAILS

Highlight the Departmental Region in which the intended application will fall	CAPE TOWN OFFICE: REGION 1		GEORGE OFFICE: REGION 3
	(City of Cape Town, West Coast District)	(Cape Winelands District & Overberg District)	(Central Karoo District & Garden Route District)
Duplicate this section where there is more than one Proponent Name of Applicant/Proponent: 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:	Bitou Municipality Signatory: Mr Christopher Mapeyi (acting MM) Represented by: Victor Felton / Marinus Meiring Bitou Municipality N/A Private Bag x1002 Plettenberg Bay Postal code: 6600 +27(0) 044 501 3264 Cell: +27(0) 82 898 3935 mmeiring@plett.gov.za / Eddie Fax: N/A Oosthuizen eoosthuizen@plett.gov.za		
Company of EAP: EAP name: Postal address: Telephone: E-mail: Qualifications: EAP registration no:	HillLand Environmental Cathy Avierinos/ PO Box 590 George Postal code: 6530 044 889 0229 Cell: 082 558 6589 cathy@hilland.co.za Fax: () BSc Hons 2019/1053		
Duplicate this section where there is more than one landowner Name of landowner: Name of contact person for landowner (if other): Postal address: Telephone: E-mail:	Bitou Municipality , same details as proponent Postal code: () Cell: Fax: ()		
Name of Person in control of the land: Name of contact person for person in control of the land: Postal address: Telephone: E-mail:	Bitou Municipality , same details as proponent Postal code: () Cell: Fax: ()		
Duplicate this section where there is more than one Municipal Jurisdiction Municipality in whose area of jurisdiction the proposed activity will fall: Contact person: Postal address: Telephone E-mail:	Bitou Municipality , same details as proponent Postal code: () Cell: Fax: ()		

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

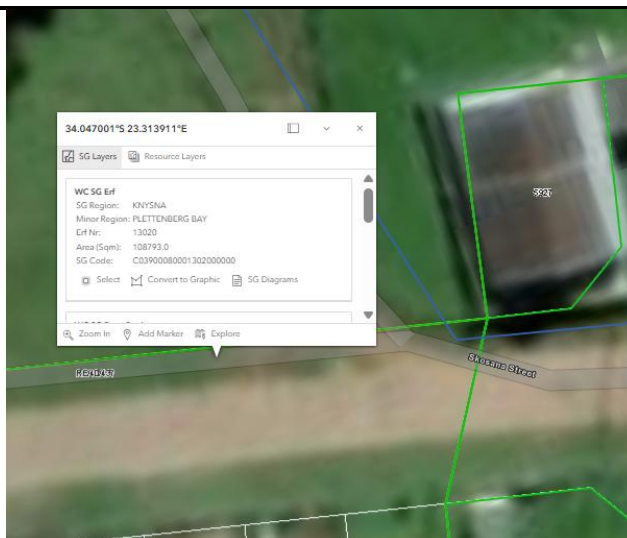
1.	Is the proposed development (please tick):	New	Expansion	✓
2.	Is the proposed site(s) a brownfield of greenfield site? Please explain.			
Brownfield				
Existing sewer lines are leaking and needing replacing, repair, maintenance or upgrading to prevent environmental contamination from leaking sewage systems. Pump stations that will be upgraded (potentially expanded) are existing and the upgrade is required to accommodate the sewer network upgrades in accordance with the Municipal Services requirements for the Kwanokuthula area. The proposed riverbank stabilisation at pump station 1 is within the urban area and essential for infrastructure protection.				
3.	For Linear activities or developments			
3.1.	Provide the Farm(s)/Farm Portion(s)/Erf number(s) for all routes:			

See table below.

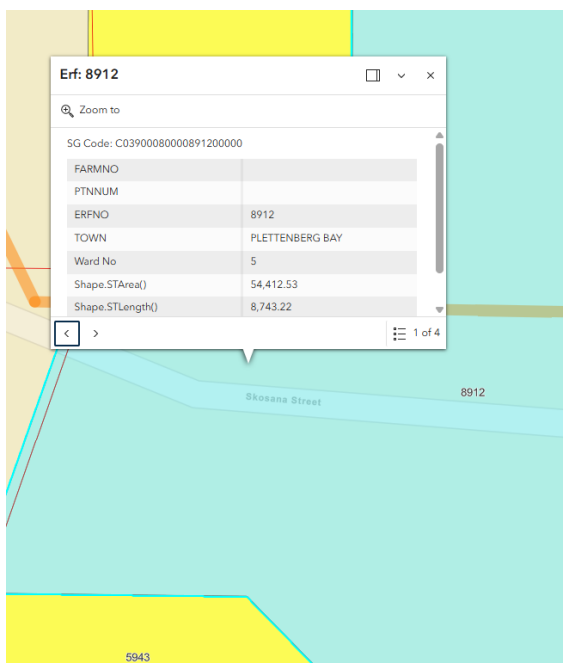
Two sources have been used to identify the property numbers. Cape Farm Mapper and Bitou Municipality public viewer. The erf or farm numbers listed is based on the Municipality's Valuation Roll.

Erf or farm nr	Screenshots
Remainder of Portion 40 of Farm 437 New and existing PS1 PS3	 The screenshots show two different locations in a rural area. The top screenshot shows a road and a field with a coordinate overlay of 34.045834°S 23.313710°E. The bottom screenshot shows a residential area with a coordinate overlay of 34.058731°S 23.317953°E. Both screenshots include a pop-up window with details for 'WC SG Farm Portion'.

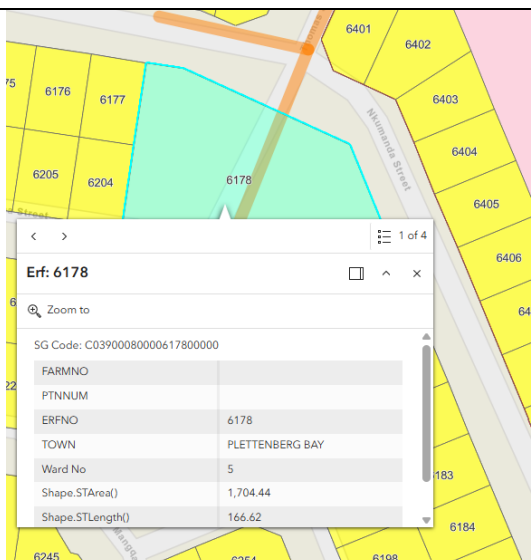
Erf 13020
Skosana Str



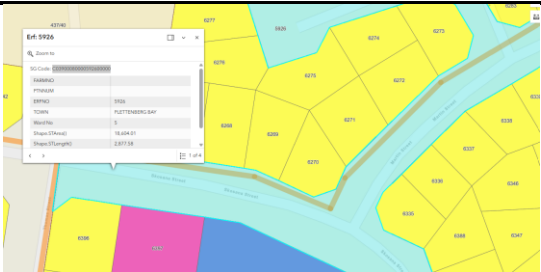
Erf 8912
Skosana Str, Thomas Street
Tyharatyha street



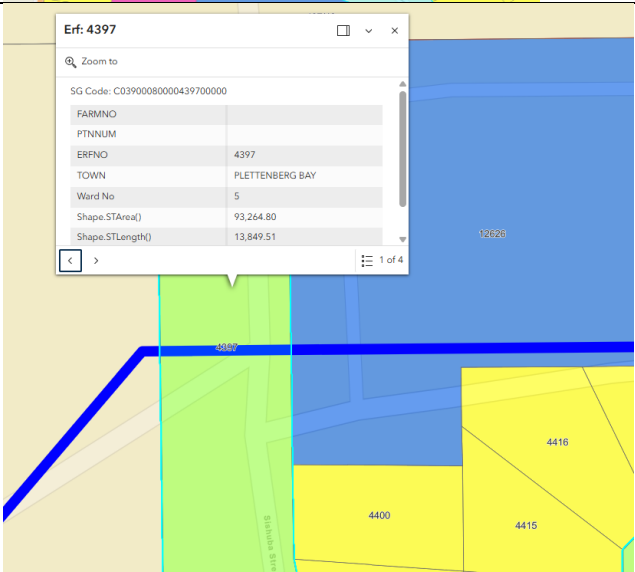
Erf 6178,



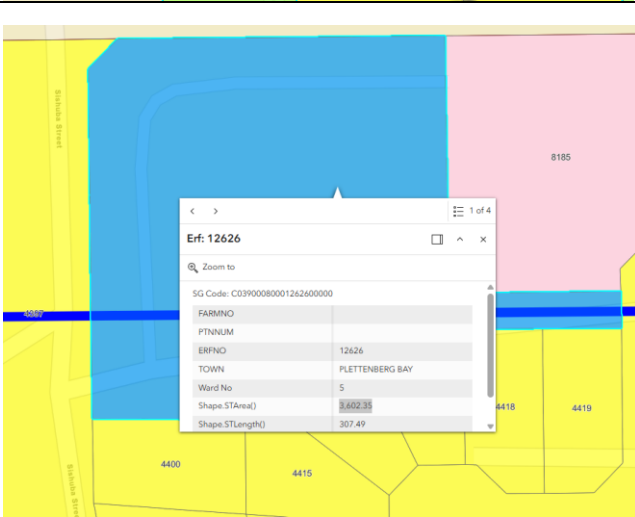
Erf 5926
Skosana Street
Martin Str
Jonga Street



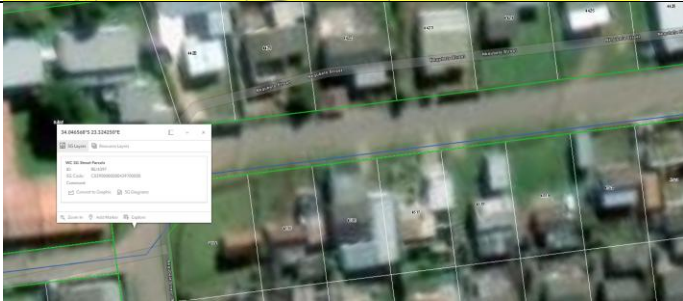
Erf 4397
Sishuba Street

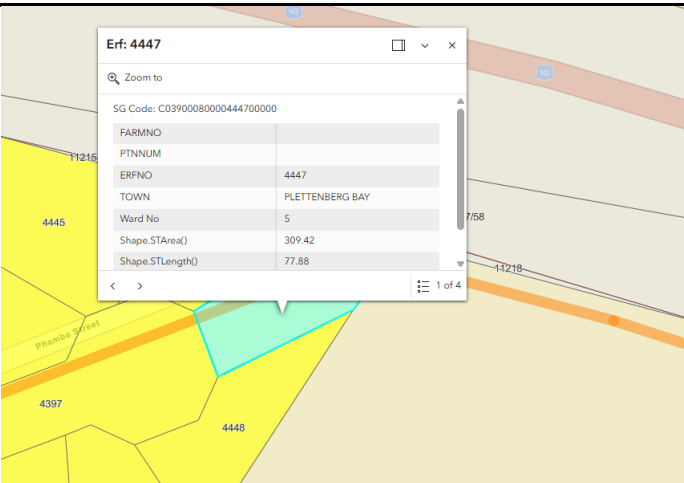
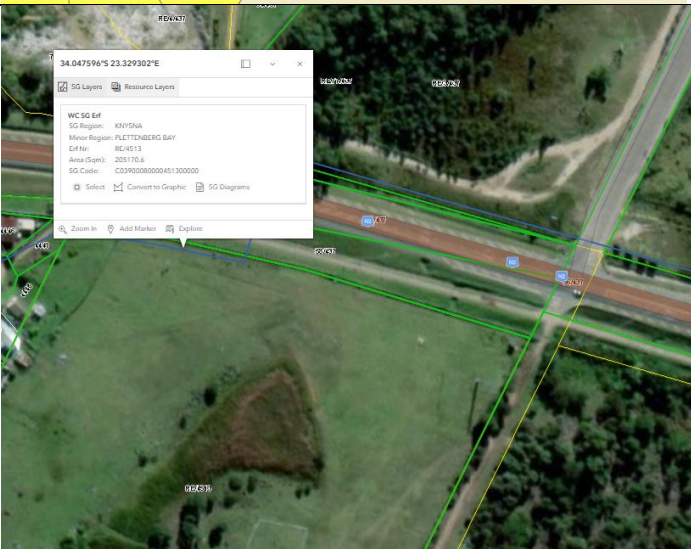
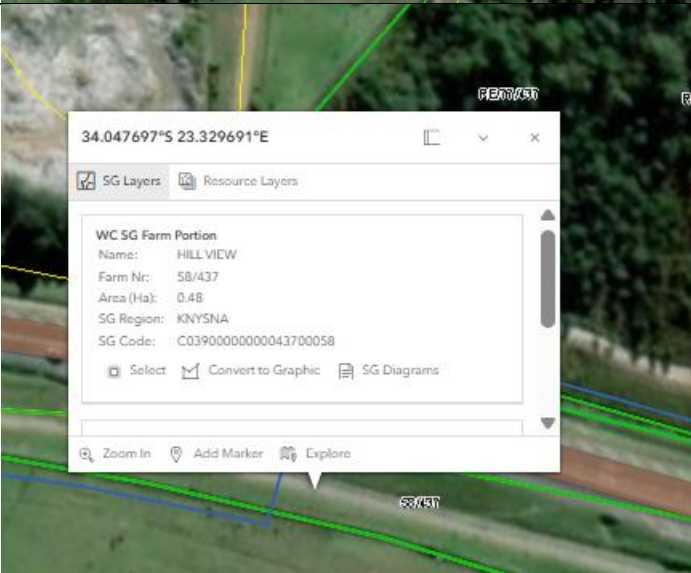


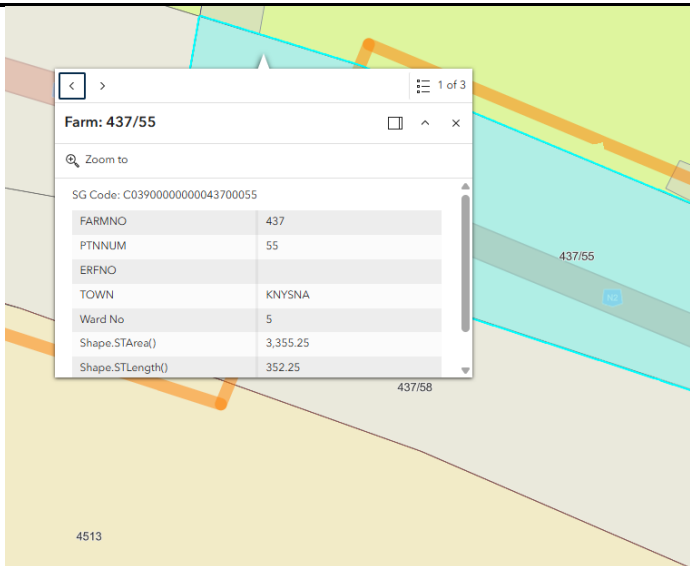
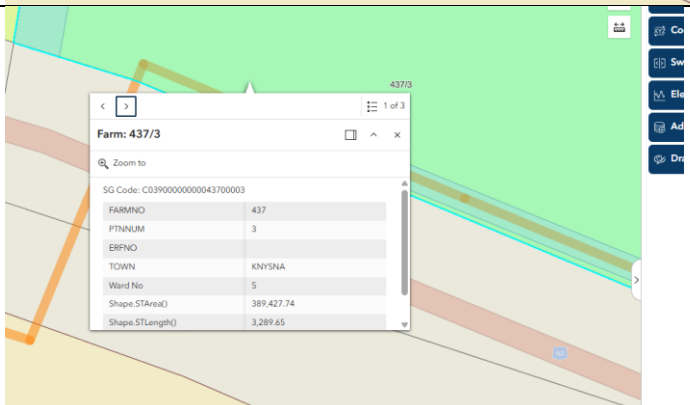
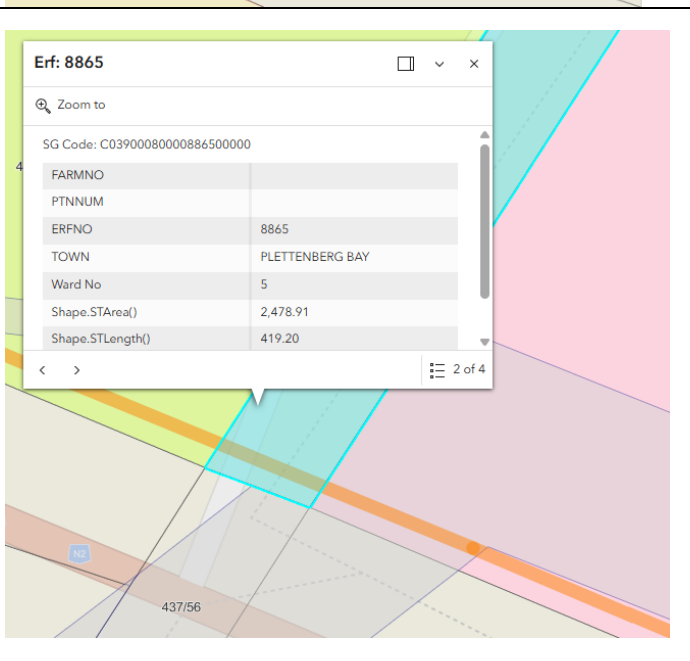
Erf 12626



Erf 4397
Nkqubela Street and
Phamba Street

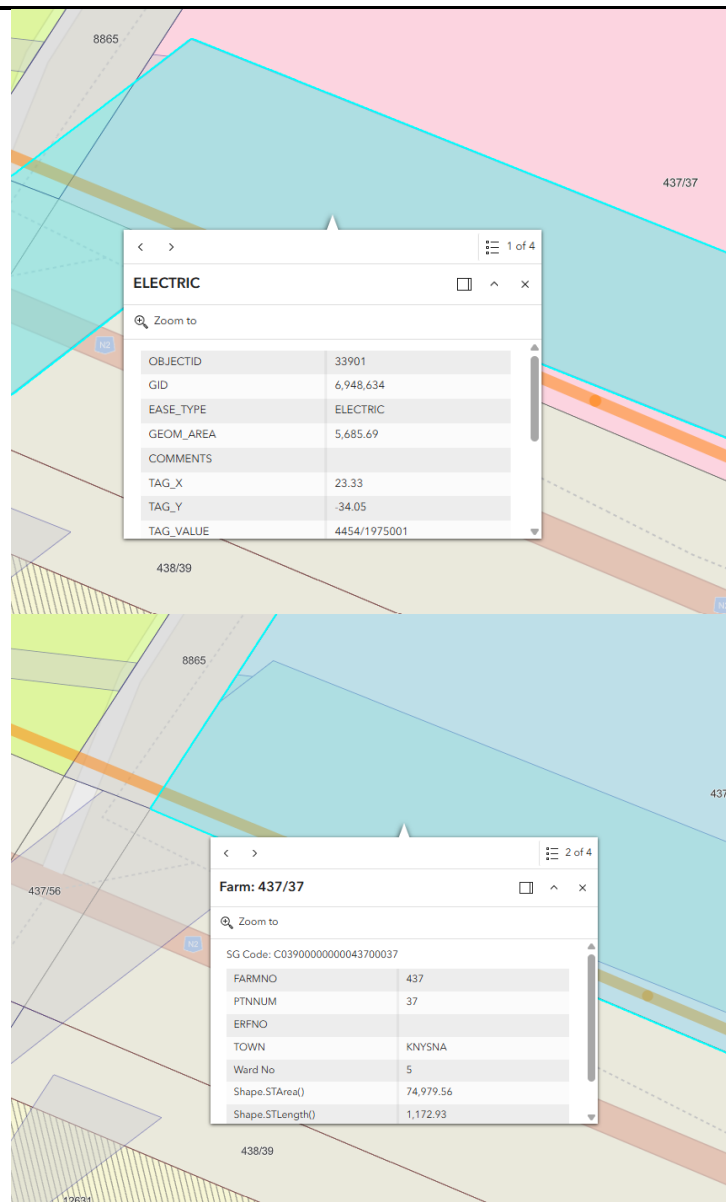


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34.047596°S 23.329302°E																						
WC SG Erf																						
SG Region:	KNYSNA																					
Minor Region:	PLETTENBERG BAY																					
Erf Nr:	RE:4513																					
Area (Sqm):	205170.6																					
SG Code:	C03900080000451300000																					
Portion 58 of Farm 437 N2 road reserve	 The popup window for Portion 58 of Farm 437 displays the following information: <table><tr><th colspan="2">34.047697°S 23.329691°E</th></tr><tr><td colspan="2">WC SG Farm Portion</td></tr><tr><td>Name:</td><td>HILL VIEW</td></tr><tr><td>Farm Nr:</td><td>58/437</td></tr><tr><td>Area (Ha):</td><td>0.48</td></tr><tr><td>SG Region:</td><td>KNYSNA</td></tr><tr><td>SG Code:</td><td>C0390008000043700058</td></tr></table>	34.047697°S 23.329691°E		WC SG Farm Portion		Name:	HILL VIEW	Farm Nr:	58/437	Area (Ha):	0.48	SG Region:	KNYSNA	SG Code:	C0390008000043700058							
34.047697°S 23.329691°E																						
WC SG Farm Portion																						
Name:	HILL VIEW																					
Farm Nr:	58/437																					
Area (Ha):	0.48																					
SG Region:	KNYSNA																					
SG Code:	C0390008000043700058																					
Portion 55 of Farm 437 N2 crossing																						

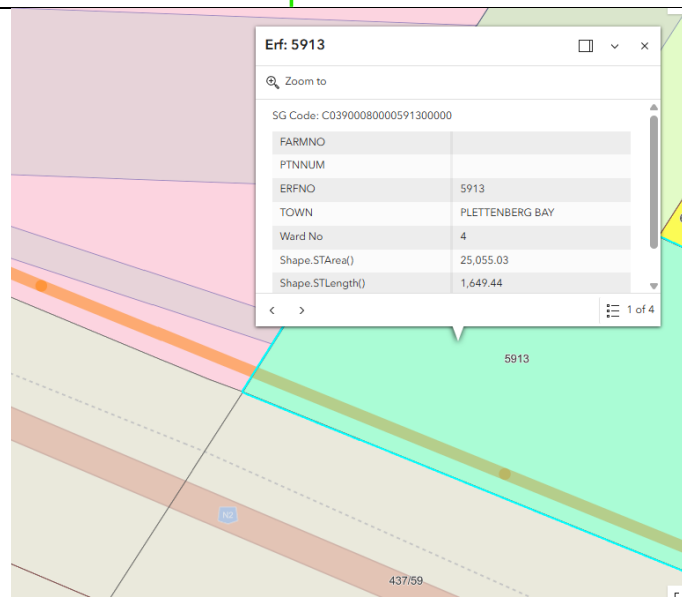
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ERFNO																
TOWN	KNYSNA															
Ward No	5															
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Ward No	5															
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Shape.STLength()	419.20															

Portion 37 of Farm 437

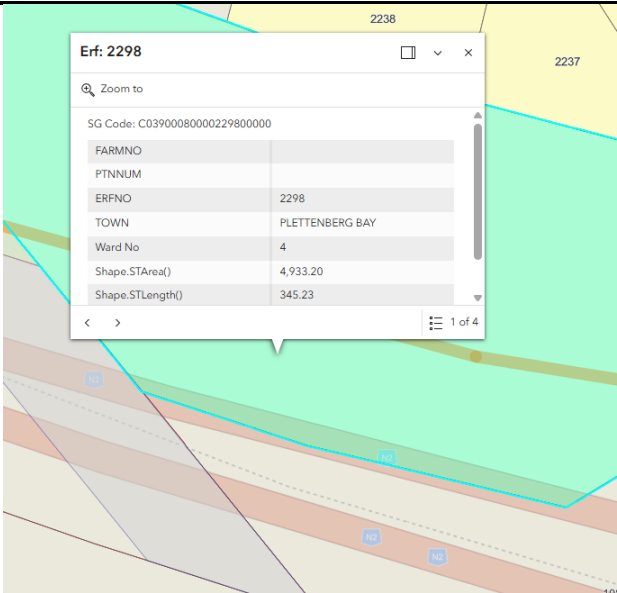
Electric servitude Erf 33901



Erf 5913

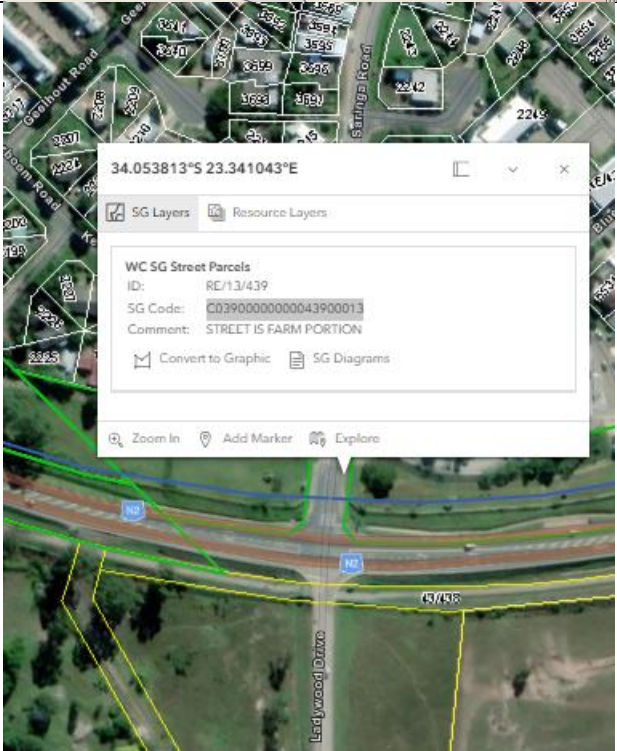


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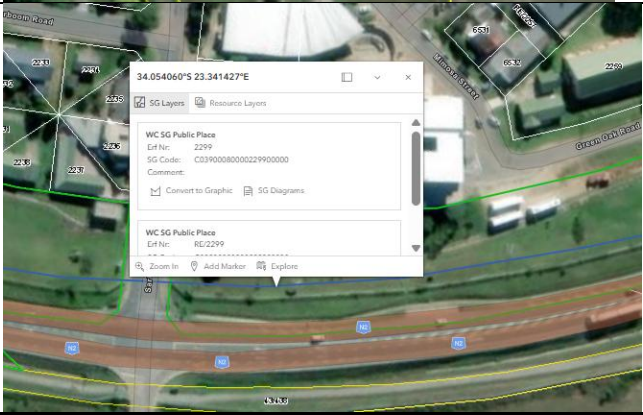


Remainder of Portion 13 of Farm 439

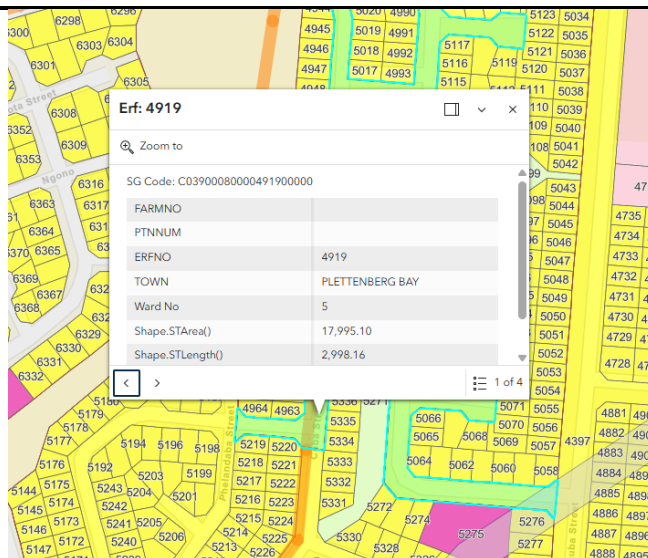
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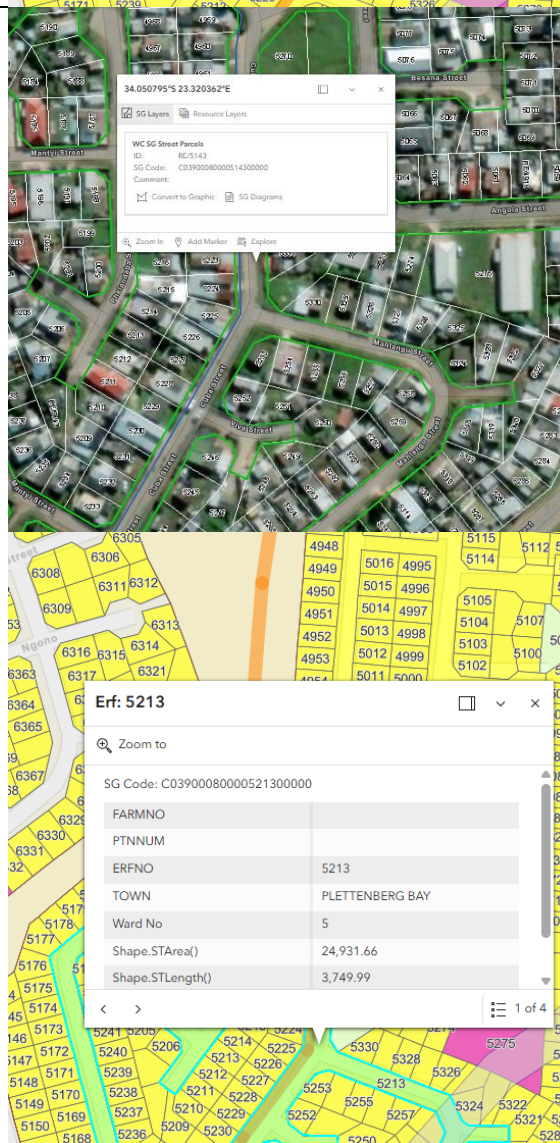
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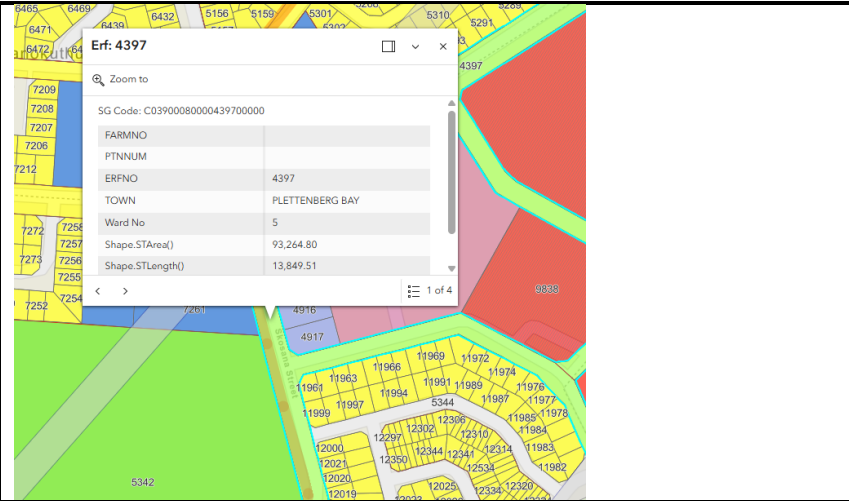
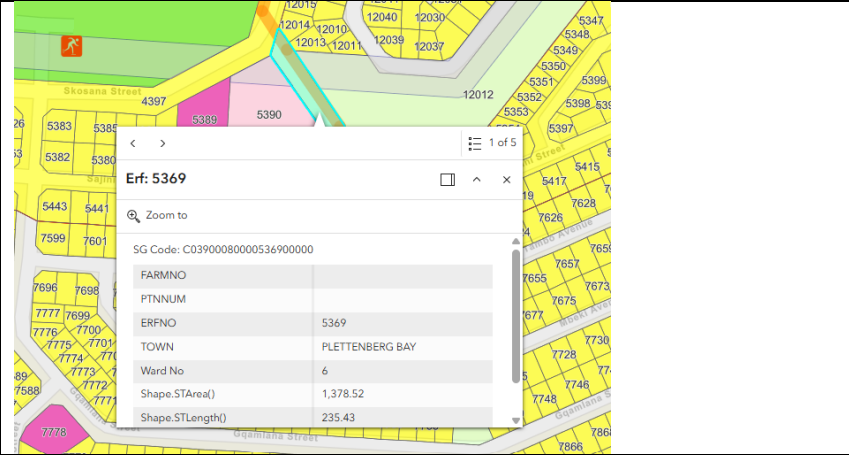
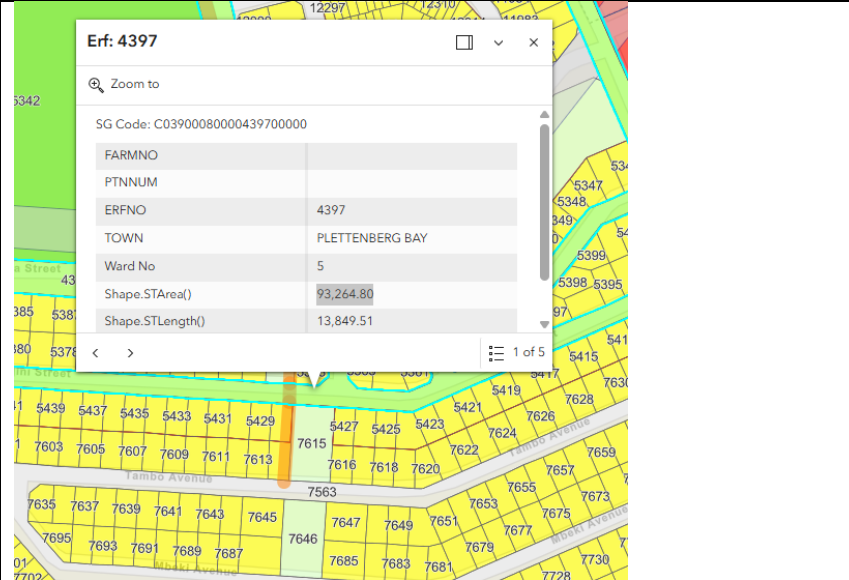
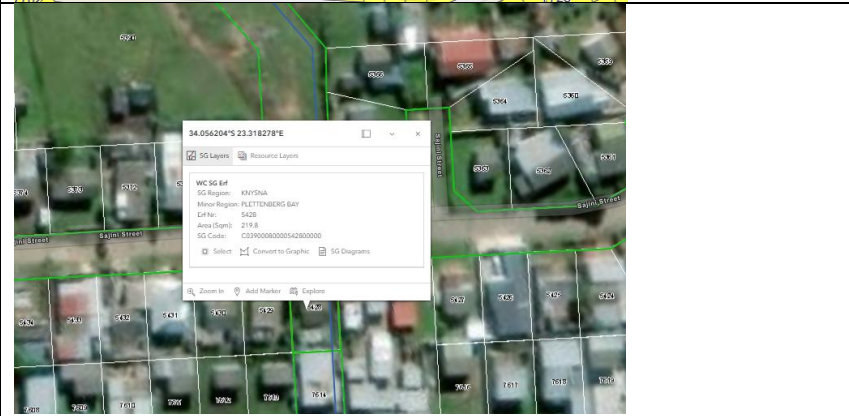


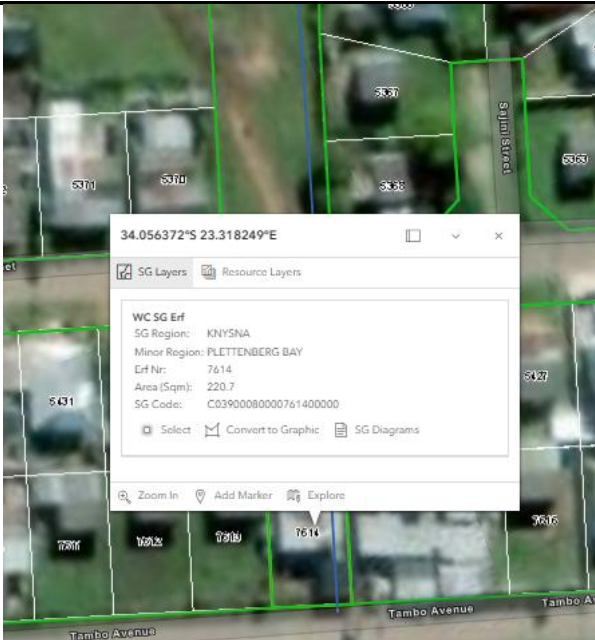
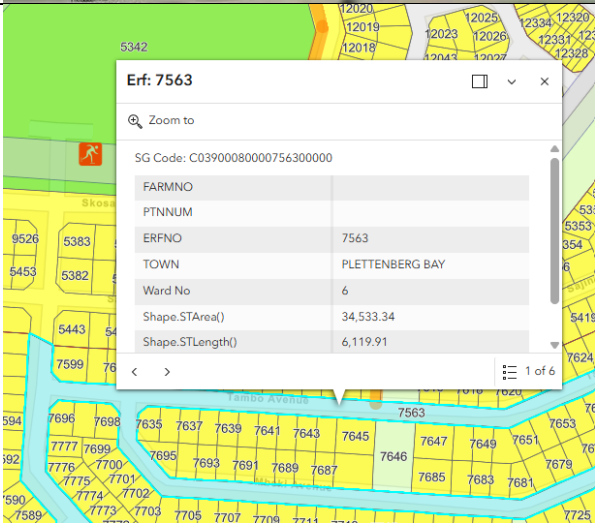
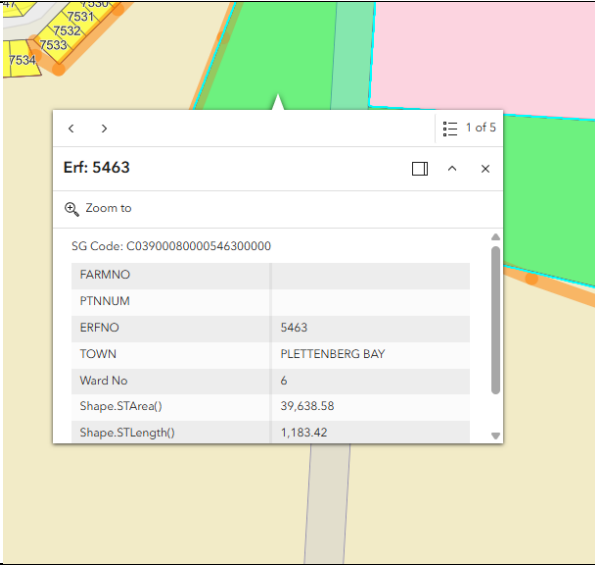
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Cuba Street



Erf 5143
Cuba Street

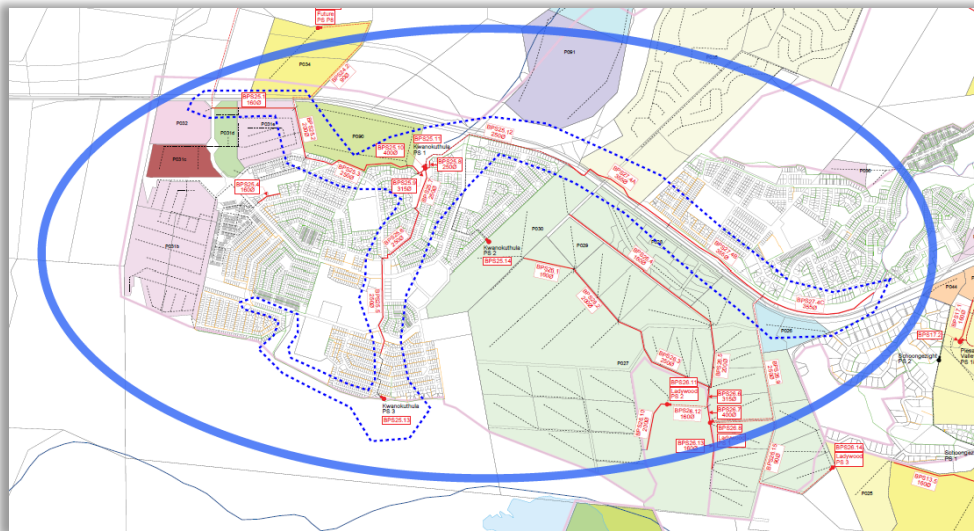


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PTNNUM															
ERFNO	4397														
TOWN	PLETTENBERG BAY														
Ward No	5														
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Bitou:: Erf 53963 CFM maps it as still forming part of erf 5143	 Erf: 5369 Zoom to SG Code: C03900080000536900000 <table border="1"> <tr><td>FARMNO</td><td></td></tr> <tr><td>PTNNUM</td><td></td></tr> <tr><td>ERFNO</td><td>5369</td></tr> <tr><td>TOWN</td><td>PLETTENBERG BAY</td></tr> <tr><td>Ward No</td><td>6</td></tr> <tr><td>Shape.STArea()</td><td>1,378.52</td></tr> <tr><td>Shape.STLength()</td><td>235.43</td></tr> </table> 1 of 5	FARMNO		PTNNUM		ERFNO	5369	TOWN	PLETTENBERG BAY	Ward No	6	Shape.STArea()	1,378.52	Shape.STLength()	235.43
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ERFNO	5369														
TOWN	PLETTENBERG BAY														
Ward No	6														
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PTNNUM															
ERFNO	4397														
TOWN	PLETTENBERG BAY														
Ward No	5														
Shape.STArea()	93,264.80														
Shape.STLength()	13,849.51														
Erf 5428	 34.054204°S 23.318278°E SG Layers Resource Layers WC SG Erf SG Region: KNYSNA Minor Region: PLETTENBERG BAY Erf No: 5428 Area (Sqm): 219.8 SG Code: C03900080000542800000 Select Convert to Graphic SG Diagrams Zoom to Add Marker Explore														

Erf 7614		
Erf 7563 Tambo avenue		
Erf 5463		

3.2.	Development footprint of the proposed development for all alternatives.	Considering ALL pipelines (including where there is no vegetation): 6 695m length by max of 6m working area = 40 170m² This area is not the extent of ‘clearance of vegetation’ required. Clearing areas are indicated in the listed activity tables.
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.	

Only one alternative proposed as this is for existing infrastructure maintenance and upgrade.



Outline of the sewer network to be installed (connection to future development areas) and existing to be upgraded

The following existing sewer pipelines will be upgraded:

- BPS 25.12 (Rising main following Kwanokuthula PS1) – Existing to be upgraded



Figure 7: LOCATION OF BPS 25.12

Location of this pipeline

- BPS 27.4A (Gravity main following Kwanokuthula PS1) – Existing to be upgraded
- BPS 27.4B (Gravity main following Kwanokuthula PS1) – Existing to be upgraded
- BPS 27.4C (Gravity main following Kwanokuthula PS1) – Existing to be upgraded

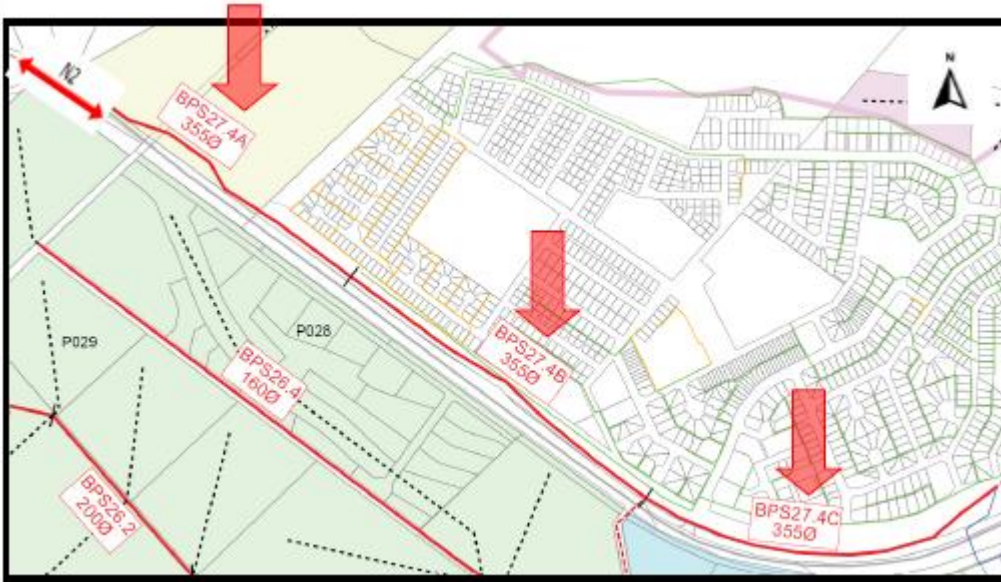


Figure 6: LOCATION OF BPS 27.4A, BPS 27.4B & BPS 27.4C

Locations of these pipelines

- BPS 25.5 (Gravity main following Kwanokuthula PS3) – Existing to be upgraded
- BPS 25.6 (Gravity main following Kwanokuthula PS3) – Existing to be upgraded
- BPS 25.7 (Gravity main following Kwanokuthula PS3) – Existing to be upgraded

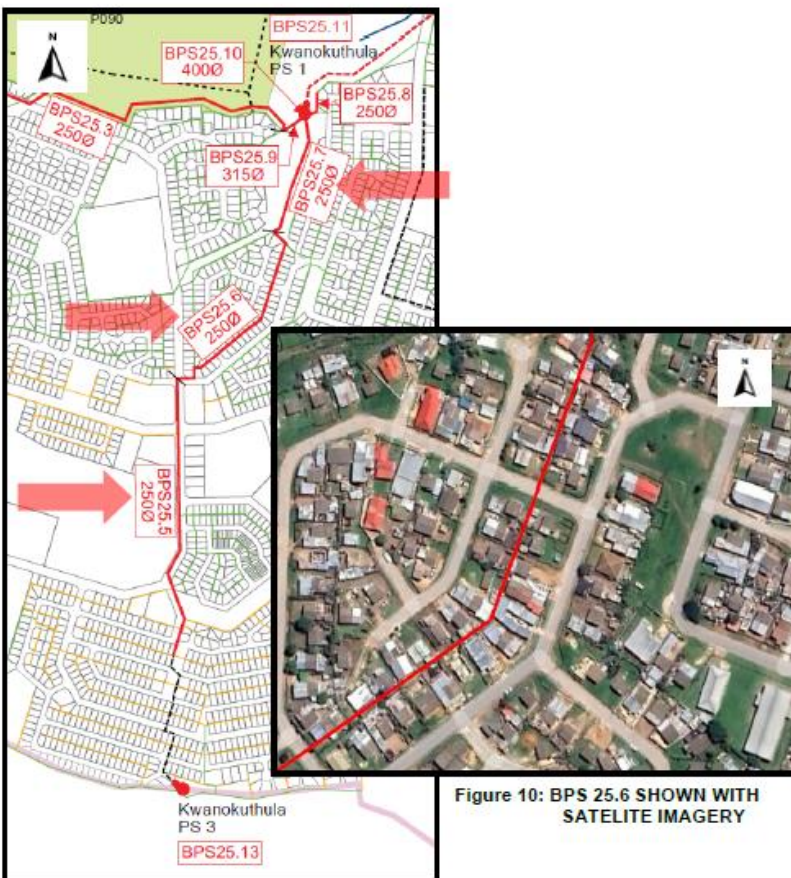


Figure 9: LOCATION OF BPS 25.5, BPS 25.6 & BPS 25.7

Figure 10: BPS 25.6 SHOWN WITH SATELITE IMAGERY

Location of the pipes. New pipe installed along the street, existing midblock pipe will remain active in order to serve even already connected



-

Page 26 of 97

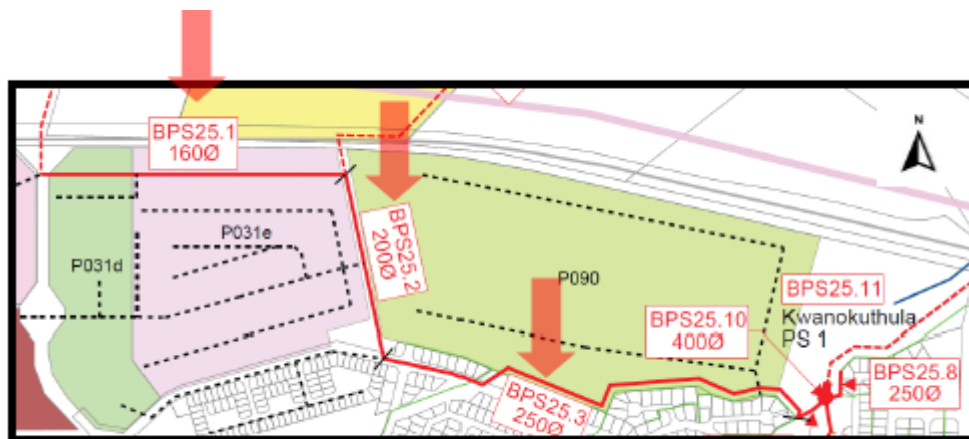


Figure 8: LOCATION OF BPS 25.1, BPS 25.2 & BPS 25.3

Locations of these pipelines

FUTURE DEVELOPMENT	ANTICIPATED LANDUSE
P031d	School
P031e	Affordable Housing
P032	Other
P033	Single residential 1000
P034	Single Residential > 1500

Future developments that it will accommodate

Details of pipes to be installed:

- Up to a maximum diameter of 355mm
- Up to a maximum flow rate of 300 l/s

All manholes will be upgraded or fixed where applicable or new ones will be installed.

A maximum 6m working area will be allowed during the construction phase.

Engineering plans are attached as Appendix B1 which contain the high resolution graphics for all routes.

There will be watercourse crossings required, as assessed by the aquatic specialist.

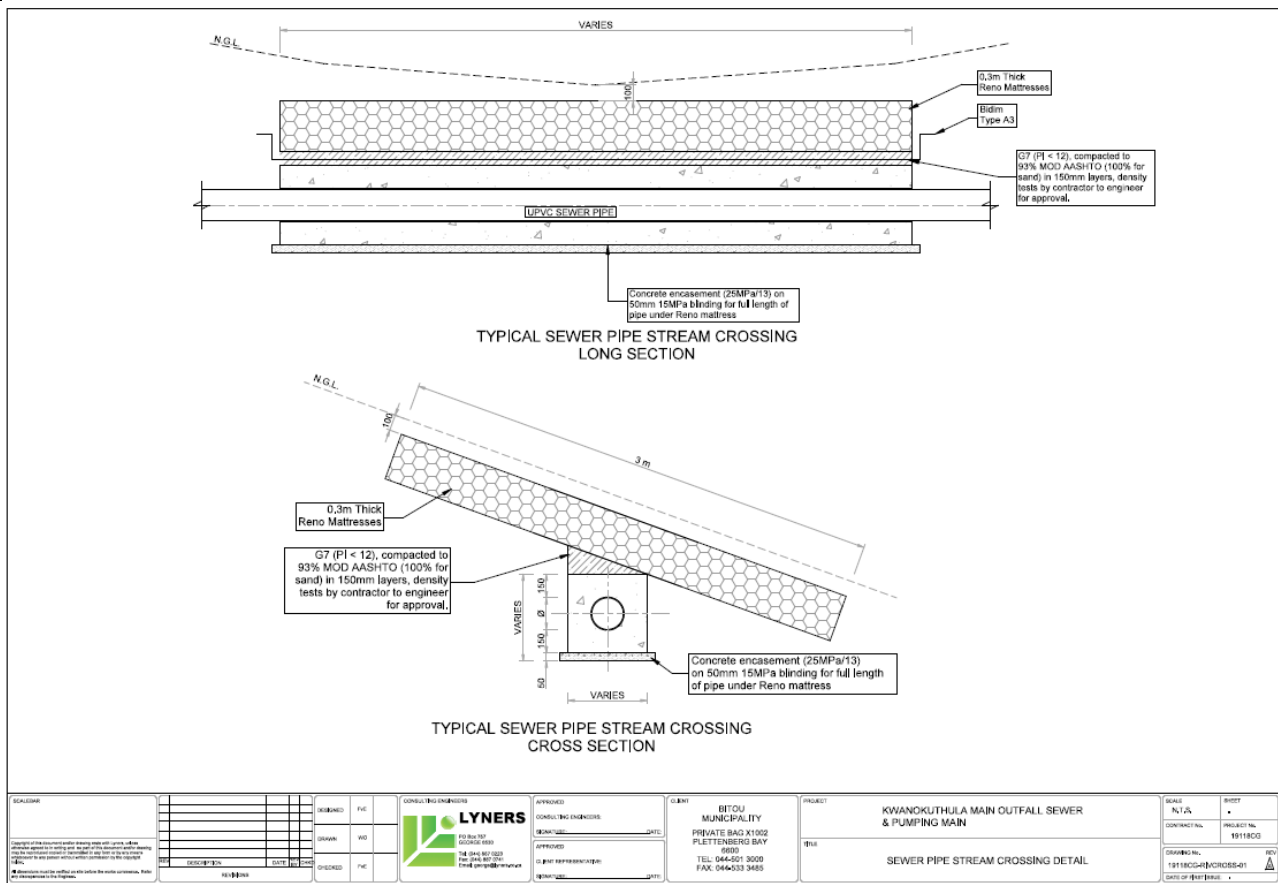


Figure 2: Typical stream crossing detail proposed with a reno mattress over the pipeline in order to protect the pipeline and reduce the potential for damage to the line and future leaks.

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

Access to all working areas will be gained from existing streets, roads and services servitude areas.

SG Digit codes of the Farms/Farm Portions/Erf numbers for all alternatives

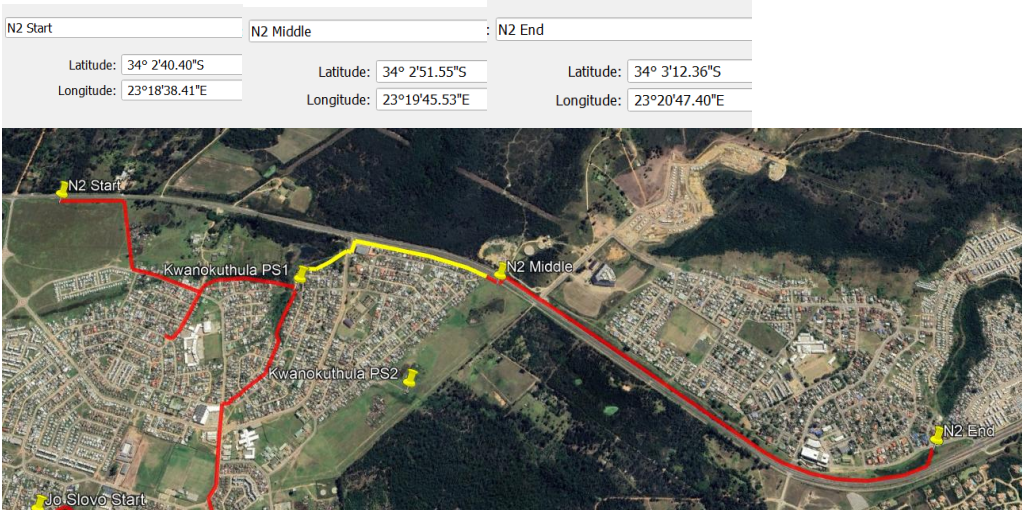
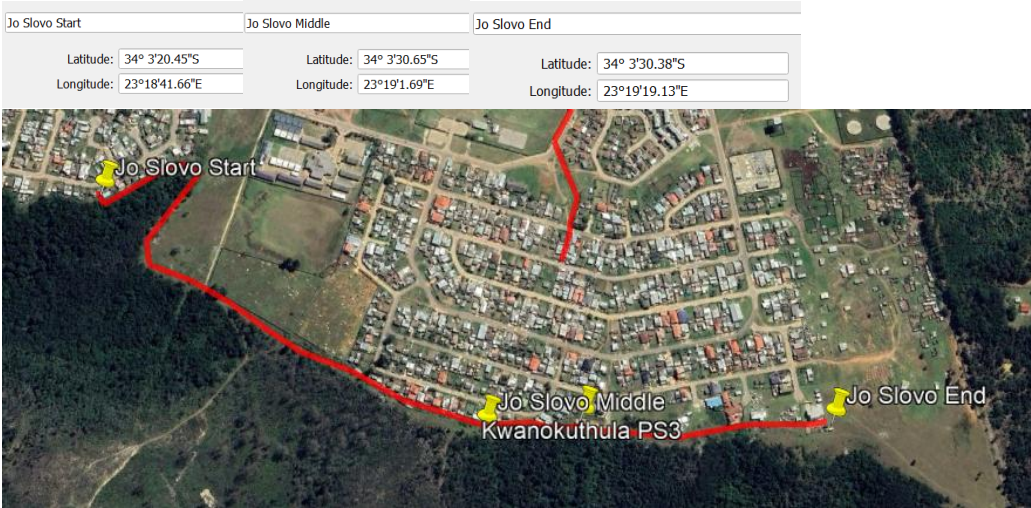
3.5.

Erf or farm nr	SG Code
Remainder of Portion 40 of Farm 437 New and existing PS 1 PS3	C03900000000043700040
Erf 13020 Skosana Str	C03900080001302000000
Erf 8912 Skosana Str, Thomas Street Tyharatyha street	C03900080000891200000
Erf 6178,	C03900080000617800000
Erf 5926 Skosana Street Martin Str Jonga Street	C03900080000592600000
Erf 4397 Sishuba Street	C03900080000439700000
Remainder of Erf 4398	C03900080000439800000
Erf 4397 Nkqubela Street and Phamba Street	C03900080000439700000
Erf 4447	C03900080000444700000
Erf 4513	C03900080000451300000
Portion 58 of Farm 437 N2 road reserve	C03900000000043700058
Portion 76 of Farm 437 N2 cross	C03900000000043700076
Portion 3 of Farm 437	C03900000000043700003
Erf 8865	C03900080000886500000
Portion 37 of Farm 437 Electric servitude Erf 33901	C03900000000043700037
Erf 5913	C03900080000591300000
Erf 2298	C03900080000229800000
Remainder of Portion 13 of Farm 439 Saringa Road	C03900000000043900013
Erf 2299	C03900080000229900000
Erf 4919	C03900080000491900000

Cuba Street	
Erf 5143	C03900080000514300000
Cuba Street	
Bitou: Erf 4397	C03900080000439700000
Bitou:: Erf 53963	C03900080000536900000
Erf 4397 Sajini street	C03900080000439700000
Erf 5428	C03900080000542800000
House on erf	
Erf 7614	C03900080000761400000
House on erf	
Erf 7563	C03900080000756300000
Tambo avenue	
Erf 5463	C03900080000546300000

Starting point co-ordinates for all alternatives

See Appendix A3 for the linear coordinate map KML.



3.6.

Latitude (S)	°	'	''
Longitude E	°	'	''
Middle point co-ordinates for all alternatives			
Latitude (S)	°	'	''
Longitude E	°	'	''
End point co-ordinates for all alternatives			
Latitude (S)	°	'	''
Longitude E	°	'	''

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

4.	Other developments Upgrade of the pump stations
----	--

4.1.	Property size(s) of all proposed site(s): PS1: Remainder of Portion 40 of Farm 437, northern portion PS3: Remainder of Portion 40 of Farm 437, southern portion	751900m² north 112.6800m² south
4.2.	Developed footprint of the existing facility and associated infrastructure (if applicable):	Based on Google Earth measurements PS1:  1260m² PS3:  525m²
4.3.	Development footprint of the proposed development and associated infrastructure size(s) for all alternatives:	PS 3 will be upgraded, but no expansion beyond the current demarcated area. Works will therefore remain within the existing disturbance area. The preferred alternative is to expand PS1 to accommodate the upgrades. It will be expanded by approximately 300m² The riverbank will be stabilised using gabions and reno mattress. The footprint area and working area calculates to approximately 1 034m²
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).	
Pump station 1 and 3 forming part of the sewer network and forms part of the upgrades associated with Phase 1 and 2. Existing infrastructure is as follow (Lyners Consulting Engineers, 2026): <i>Existing Pump Station Infrastructure PUMP STATION 1:</i> <i>The pump station site consists of an inlet channel structure receiving sewage from the sewer network, followed by a sump from which the drywell pumping equipment draws sewage and pumps into the existing rising main (as discussed elsewhere in the report). The pump station building, positioned adjacent to the sump, houses the mechanical and electrical equipment in separate rooms as follows:</i> • Screening equipment • Pumping equipment • Motor Control Centre (MCC) and emergency back-up generator • Lime dosing (not in use anymore).		



Figure 14 : Overview of Pump Station Site

The eastern bank of the river is eroding and there are no stabilisation measures in place to ensure that the erosion does not undermine the pump station 1 infrastructure.

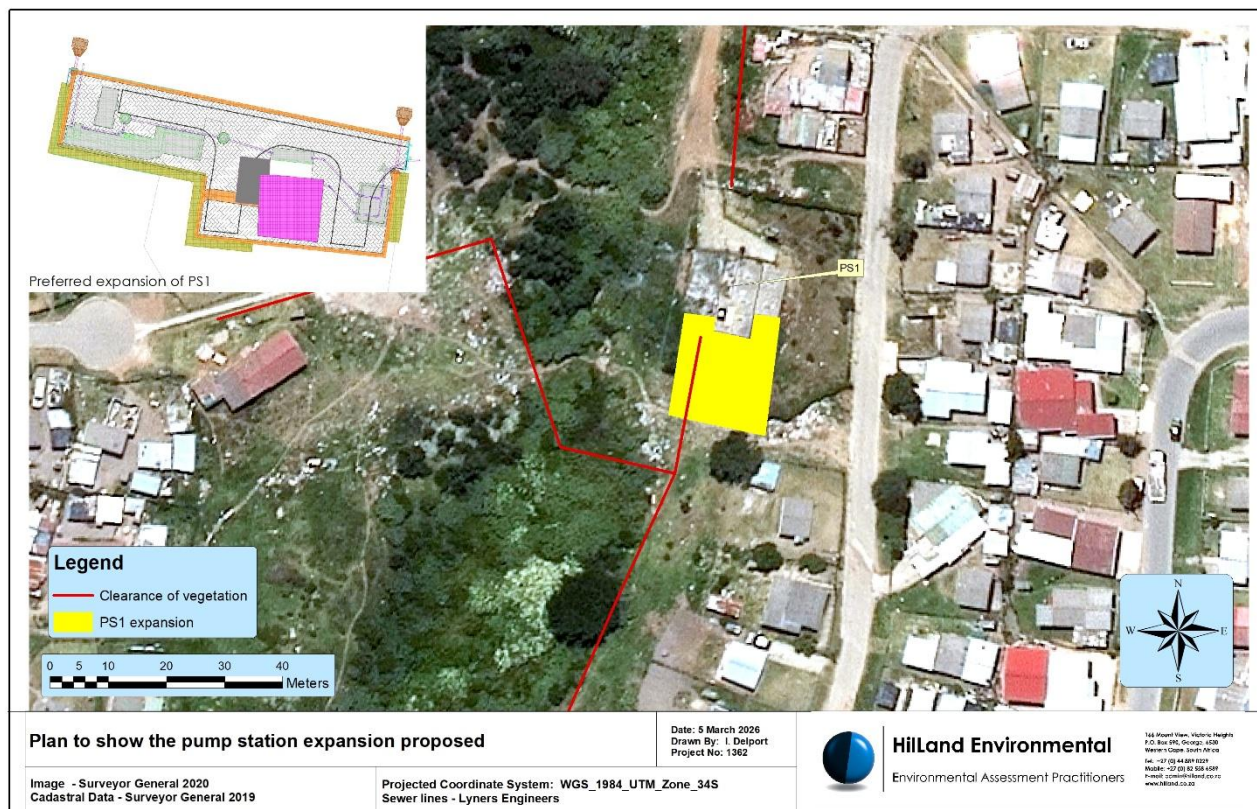
- **PUMP STATION EXPANSION (PS1):**

The preferred alternative is to upgrade the pump station which entails expanding the existing area. This will allow upgrade all associated infrastructure so that it can accommodate the sewer network upgrade. The expansion has been considered as option 2 in the engineering report and entails upgrade of all infrastructure.



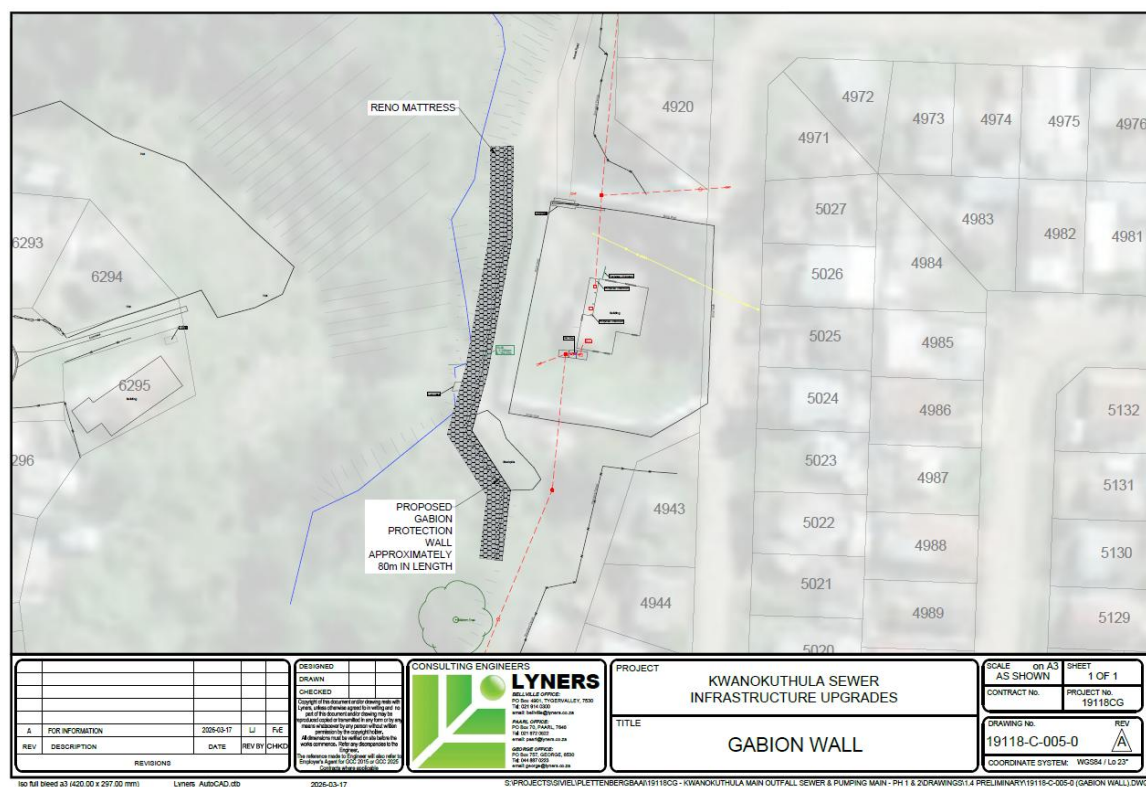
Figure 24 : Option 2 – Proposed upgrade layout extending to the south of the existing Pumpstation yard

Figure 3: Engineering plan for PS1 expansion (preferred option) (Lyners Consulting Engineers 2026)



- **EASTERN RIVERBANK STABILISATION AT PS1:**

The preferred alternative is to stabilise the eroding eastern riverbank with gabions (700m in length) and reno mattress as per the engineering design:



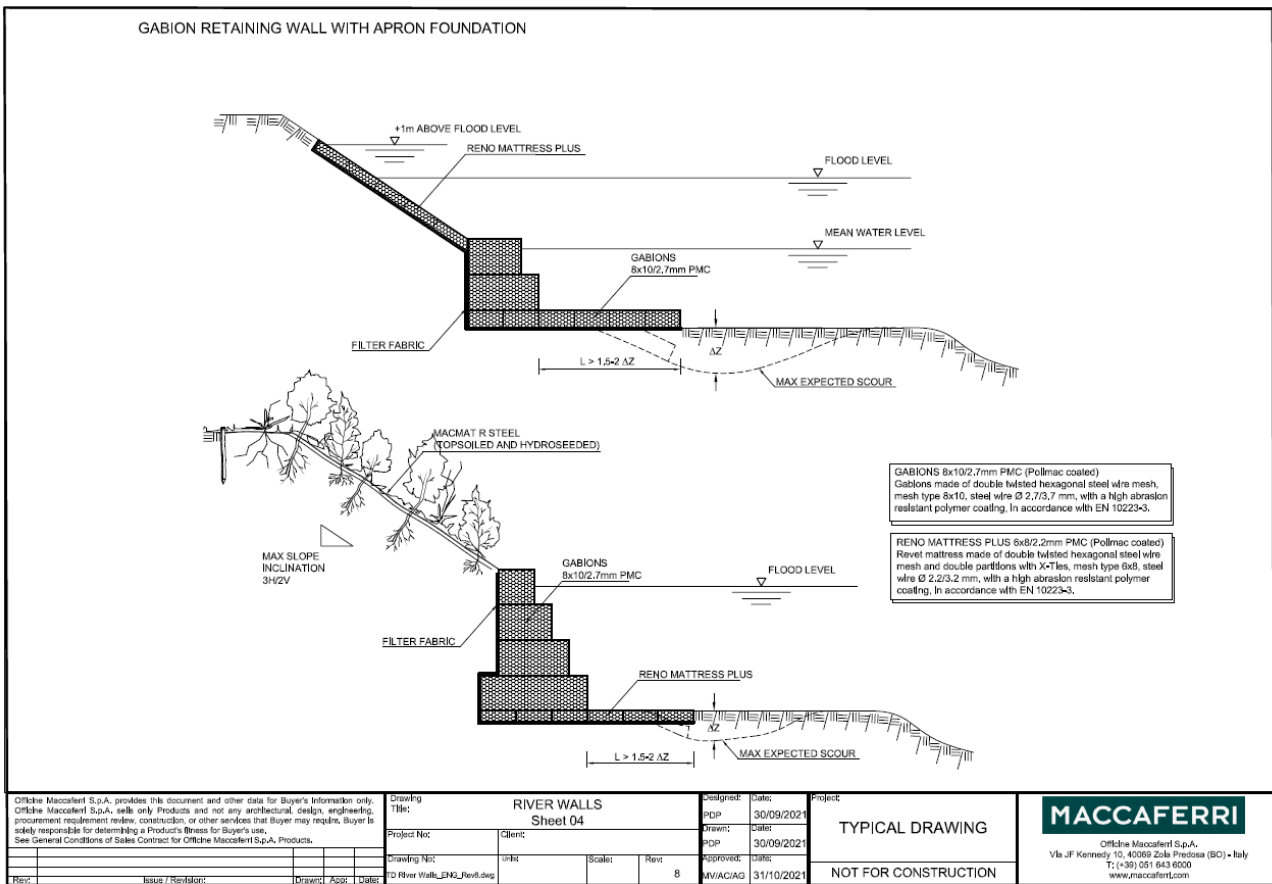


Figure 6: Typical design (Lyders Consulting Engineers, 2026)

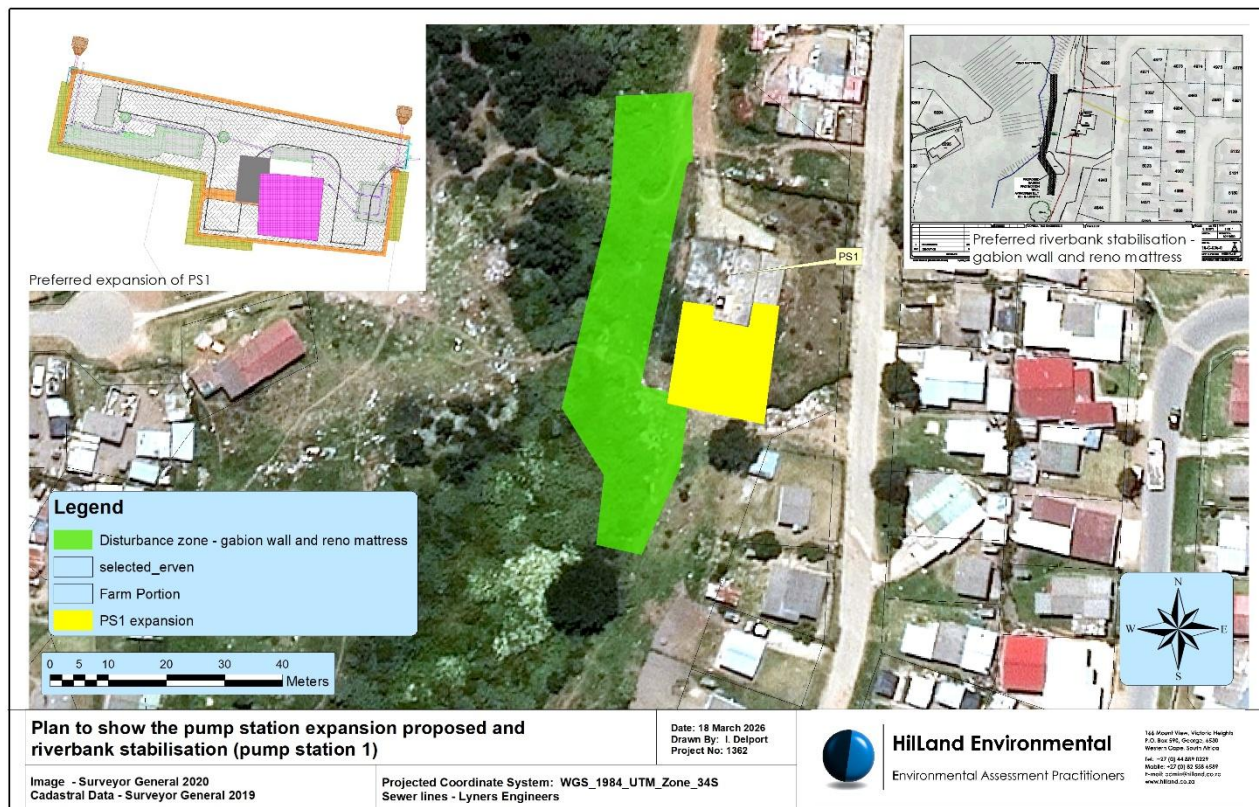


Figure 7: Construction plan showing the disturbance zones associated with the pump station expansion and the riverbank stabilisation as proposed

4.5. Indicate how access to the proposed site(s) will be obtained for all alternatives.

Access will be gained from existing streets: PS1: Cuba Street PS3: Hani Avenue				
Access to the riverbank will be gained from PS 1 footprint area.				
4.6.	SG Digit code(s) of the proposed site(s) for all alternatives: PS1 and PS3	C03900000000043700040		
4.7.	Coordinates of the proposed site(s) for all alternatives:			
	Latitude (S) PS1	34°	2'	51.99"
	Longitude (E) PS1	23°	19'	15.76"
	Latitude (S) PS3	34°	3'	30.27"
	Longitude (E) PS3	23°	19'	6.57"

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. HWC confirmed that no submission of an NID or additional studies will be required for the proposed project (11 April 2025).	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. WULA application - Ref. No: WU44244 in process.	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.
No other legislation applicable.

4. Policies

Explain which policies were considered and how the proposed activity or development complies and responds to these policies.
Western Cape Spatial Biodiversity Plan (CapeNature, 2023) - the proposal is within the scope of the WCSBP Bitou Spatial Development Framework (SDF) - the proposal is consistent with the Bitou SDF Bitou Municipality Integrated Development Plan (IDP) - the proposal is consistent with the Bitou IDP Western Cape Provincial SDF (2014) - the proposal is consistent with the Provincial SDF

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.

The following guidelines have been considered relevant to the proposal:

Guideline	How the proposed development complies with and responds
Circular EADP 0028/2014: One Environmental Management System	In terms of the "One Environmental System" fixed timeframes for the consideration and issuing of decisions in terms of the respective legislation was agreed to and the processes to be followed in terms of the respective legislation have been synchronised and integrated. This circular was applied in the WULA and BAR processes.
DEA&DP (2013) Guideline on Public Participation (EIA Guideline and Information Document Series): Western Cape DEA&DP, March 2013	The public participation process for the project will follow the requirements of the guideline and the guideline was used to compile the Public Participation Report (Appendix F).
DEA&DP (2013) Guideline on Alternatives (EIA Guideline and Information Document Series): Western Cape DEA&DP, March 2013	This guideline was used to assess and determine alternatives for the project. Due to specialist input, historic approval and need and desirability, no alternatives have been proposed other than the Preferred and No-Go Alternative. The alternatives assessed in this report fall within the requirements of the guidelines.
DEA&DP (2013) Guideline on Need and Desirability (EIA Guideline and Information Document Series): Western Cape DEA&DP, March 2013	This guideline was considered when considering the need and desirability of the proposed project. The guideline was used to complete the section on need and desirability and the need and desirability assessed within this report fall within the requirements of the guideline.
DEA&DP (2005) Guideline on Environmental Management Plans	This guideline was considered for the compilation of the EMPr (Appendix H to form part of the draft BAR) and the EMPr fall within the requirements of the guideline.
Guideline for determining the scope of specialist involvement in EIA processes, guideline for the review of specialist input in the EIA process and guideline for involving biodiversity specialist in the EIA process (June, 2005)	The report falls within the requirements of these guidelines and was used to determine the need for specialist involvement and within the review process of the subsequent reports and inputs. Specialist assessments/verifications applicable: - Terrestrial biodiversity (plants and animals) - Aquatic assessment - Visual impact assessment - Socio-Economic assessment
Guideline for review of specialist input in the EIA process (June 2005)	This guideline was used for the review of specialist input and the verification of sensitivities.
Integrated Environmental Management Information Series 5: Impact Significance (2002)	The impact significant used within this report fall within the requirements of the guideline and the guideline was used to identify and evaluate the potential impact associated with the proposed development.
Integrated Environmental Management Information Series 7: Cumulative Effects (2004)	The cumulative effect assessed within this report fall within the requirements of the guideline and the guideline was used to assess the cumulative effects of the identified impacts.
Department of Environmental Affairs Screening Tool and protocols	The screening tool was used to inform the need for specialist studies. Please refer to the screening tool report and applicability considerations.
National Environmental Management Act, 1998 (Act No 107 of 1998): Procedures to be followed for the assessment and minimum criteria for reporting of identified environmental themes in terms of Section 24(5)(a) and (h) of the National Environmental Management Act, 1998, when applying for environmental authorisation.	The procedures were followed to determine the need for specialist studies based on the outcome of the screening tool report and site sensitivity verification.
Guideline on generic terms of Reference for EAPs and Project Schedules (March 2013)	The generic terms of reference and schedules outlined in this guideline was applied during the BA process.
Western Cape Land Use Planning Guideline: Rural Areas (2019)	The objectives of the guideline were assessed to determine if the proposal is in line with the guideline.

6. Protocols

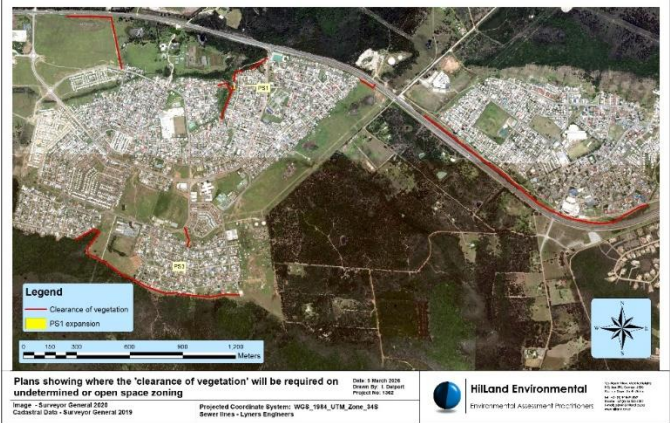
Explain how the proposed activity or development complies with the requirements of the protocols referred to in the NOI and/or application form		
Protocol triggered in terms of screening tool report and sensitivity rating	Specialist appointed or not	Specialist confirmation of sensitivity and report compiled
General protocol for: - landscape/visual impact assessment -archaeological and cultural heritage and palaeontology impact assessment – very high and high sensitivities -socio-economic impact assessment	- landscape/visual impact assessment – no, the proposal is for the upgrading of the existing sewer network and new connections are also underground. There will be no impact -archaeological and cultural heritage and palaeontology impact assessment – HWC confirmed that no NID or assessments required -socio-economic impact assessment – the need and desirability and socio-economic impact is considered by the Municipal infrastructure planning, hence the need for the project. No additional specialist study required.	- landscape/visual impact assessment – disputed by EAP, no specialist appointed -archaeological and cultural heritage and palaeontology impact assessment – HWC confirmed no studies necessary -socio-economic impact assessment – Municipal essential service infrastructure project no report required
Terrestrial biodiversity protocol – very high sensitivity	Yes, Dr D Hoare	Sensitivity disputed by specialist: Terrestrial biodiversity LOW Plant species LOW Animal species MEDIUM
Plant species protocol, medium sensitivity	Yes, Dr D Hoare	
Animal species protocol, high sensitivity	Yes, Dr D Hoare	
Aquatic biodiversity protocol, very high sensitivity	Yes, Upstream Consulting	An impact assessment done and WULA
General protocol - Agriculture theme, high sensitivity	Yes, Gert Malan	Sensitivity disputed by specialist and it was confirmed to be low to no impact. Therefore, a compliance statement was done
Civil aviation theme – high sensitivity	The project is upgrading of existing and laying of new pipes underground – there will be no impact on any civil aviation areas No specialist assessment	No assessment required
Defence theme – low sensitivity	Low sensitivity confirmed and based on no impact, there is no need for a specialist assessment	No assessment required

SECTION D: APPLICABLE LISTED ACTIVITIES

List the applicable activities in terms of the NEMA EIA Regulations

Activity No(s):	Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 1	Describe the portion of the proposed development to which the applicable listed activity relates.
10	The development and related operation of infrastructure exceeding 1 000 metres in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes – (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where— (a) such infrastructure is for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area.	In the urban areas, the exclusion will apply and this activity does not require environmental authorisation. Outside the urban areas this needs to be authorised. The authorisation of this listed activity will be required for areas outside the urban area where the pipeline exceeds 1000m in length, the maximum pipe diameter is 0,35m, therefore (i) will not be applicable, but all pipelines will have the capacity to have a peak throughput of 120 l/s or more which will require authorisation. Authorisation required LN1, Act 10(ii) for where the pipes are not located in NEMA defined urban areas.

12	The development of— (i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or (ii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs— (a) within a watercourse; (b) in front of a development setback; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; — excluding— (aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour; (bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; (cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies; (dd) where such development occurs within an urban area; (ee) where such development occurs within existing roads, road reserves or railway line reserves; (ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of the development and where indigenous vegetation will not be cleared.	The proposal will require the development of infrastructure or structures 100m² or more (cumulatively) crossing or close to identified and delineated watercourses. The exclusion for urban areas and road reserves apply. Certain of these areas fall within the urban edge, however, DEADP are likely to deem the areas to be “outside the urban area” as they fall on the edges of the developed area, in these areas the exclusion will not be applicable and this listed activity requires authorisation.
19	The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse; but excluding where such infilling, depositing, dredging, excavation, removal or moving— (a) will occur behind a development setback; (b) is for maintenance purposes undertaken in accordance with a maintenance management plan; applicable only for future maintenance. (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies; (d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or (e) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.	There is likely to be movement of more than 10m³ of material within a watercourse and as such this activity will require authorisation. Future maintenance on these pipelines and infrastructure will be done in accordance with an approved MMP where the exclusion will be applicable.
46	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— (i) has an internal diameter of 0,36 metres or more; or (ii) has a peak throughput of 120 litres per second or more; and (a) where the facility or infrastructure is expanded by more than 1 000 metres in length; or (b) where the throughput capacity of the facility or infrastructure will be increased by 10% or more; excluding where such expansion— (aa) relates to the bulk transportation of sewage, effluent, process water, waste water, return	Expansion of infrastructure for bulk transportation of sewage is excluded in road reserves and urban areas. Expansion outside the urban area where peak throughput is 120litres per second or more and the capacity will increase by 10% or more will require a NEMA EA.



Plan showing the sewer line upgrades and expansion of PS1 that will require clearance of vegetation on land zoned undetermined or open space zoning

This calculates to approximately 23 924m² (allowing for a 6m working area)

The development of—

- (i) dams or weirs, where the dam or weir, including infrastructure and water surface area exceeds 10 square metres; or
- (ii) **infrastructure or structures with a physical footprint of 10 square metres or more;**

where such development occurs—

- (a) **within a watercourse;**
- (b) **in front of a development setback;** or
- (c) **if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;**

excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour

i. Western Cape

i. Outside urban areas:

- (aa) A protected area identified in terms of NEMPAA, excluding conservancies;
- (bb) National Protected Area Expansion Strategy Focus areas;
- (cc) World Heritage Sites;
- (dd) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;
- (ee) Sites or areas listed in terms of an international convention;
- (ff) **Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;**
- (gg) Core areas in biosphere reserves; or
- (hh) Areas on the estuary side of the development setback line or in an estuarine functional zone where no such setback line has been determined.



Infrastructure outside the urban area, within 32m of a watercourse exceeding 10m² and within a CBA or ESA will require NEMA Environmental Authorisation.

The expansion of—

- (i) dams or weirs where the dam or weir is expanded by 10 square metres or more; or
- (ii) **infrastructure or structures where the physical footprint is expanded by 10 square metres or more;**

where such expansion occurs—

- (a) **within a watercourse;**

Expansion of infrastructure outside the urban area, within 32m of a watercourse exceeding 10m² and within a CBA or ESA will require NEMA Environmental Authorisation

	(b) in front of a development setback adopted in the prescribed manner; or (c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse; excluding the expansion of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour. i. Western Cape i. Outside urban areas: (aa) A protected area identified in terms of NEMPAA, excluding conservancies; (bb) National Protected Area Expansion Strategy Focus areas; (cc) World Heritage Sites; (dd) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; (ee) Sites or areas listed in terms of an international convention; (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (gg) Core areas in biosphere reserves; or (hh) Areas on the estuary side of the development setback line or in an estuarine functional zone where no such setback line has been determined	
Note: - The listed activities specified above must reconcile with activities applied for in the application form. The onus is on the Applicant to ensure that all applicable listed activities are included in the application. If a specific listed activity is not included in an Environmental Authorisation, a new application for Environmental Authorisation will have to be submitted. - Where additional listed activities have been identified, that have not been included in the application form, and amended application form must be submitted to the competent authority.		

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

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

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

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

SECTION E: PLANNING CONTEXT AND NEED AND DESIRABILITY

1.	Provide a description of the preferred alternative.
The preferred alternative is to upgrade the old existing sewer network and additional new connection to future development areas. Both PS 1 and 3 will be upgraded to accommodate the upgrades. PS 1 preferred alternative upgrade is to expand beyond the current demarcated area. The river located west of PS 1, eastern bank, is eroding and in order to prevent the erosion affecting PS 1 infrastructure, stabilisation of the riverbank is required.	

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.
Existing sewer network (including two pump stations, PS 1 and PS 3) that requires urgent maintenance and upgrade New connection is in line with future development areas that will require sewage connection The proposal is essential to provide services to the township	
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.
The proposal will not conflict with any existing approvals. The new extension of the network is in line with the future development areas that will require sewage connection.	
4.	Explain how the proposed development will be in line with the following?
4.1	The Provincial Spatial Development Framework.
The proposal is in line with the Western Cape Spatial Development Framework (2014); Policy R1 - protect biodiversity and ecosystem services The proposal has been assessed and supported by various specialists. The upgrade is essential to protect public health and biodiversity features. Policy E3 – revitalise and strengthen urban space-economies as the engine of growth The proposed activity strengthens the municipality's ability to provide services to its residents and businesses as part of its service delivery mandate.	
4.2	The Integrated Development Plan of the local municipality.
The upgrade has been indicated as required in terms of the municipal planning and service delivery, therefore, it is in line with the IDP	
4.3.	The Spatial Development Framework of the local municipality.
The upgrade has been indicated as required in terms of the municipal planning and service delivery, therefore, it is in line with the SDF	
4.4.	The Environmental Management Framework applicable to the area.
There is no municipal EMF for the area, however, the proposal will be in line with the Garden Route EMF. It will be done in accordance with a MMP / EMPr. All potential impacts associated with the proposal have been assessed and will be mitigated.	
5.	Explain how comments from the relevant authorities and/or specialist(s) with respect to biodiversity have influenced the proposed development.
Specialists: - Specialists confirmed that the constant failure of the sewage infrastructure is causing degradation of habitat - terrestrial specialist confirmed that two areas have forest in the vicinity to the pipeline route which are sensitive and require long term protection. The proposal was influence by highlighting the need for the proposed upgrade works to remain within the existing disturbed servitude areas – therefore a narrow working area has been allowed for in the assessment and EMPr/MMP. Specialists emphasized rehabilitation and alien control – which was incorporated into the EMPr/MMP. Authorities – this report is subject to public participation; therefore, additional comments will be addressed in the final report.	
6.	Explain how the Western Cape Biodiversity Spatial Plan (including the guidelines in the handbook) has influenced the proposed development.
In accordance with the Western Cape Biodiversity Spatial Plan (2023), the infrastructure is located in small areas that are mapped within Critical Biodiversity Areas (CBA 1 and 2) and Ecological Support Areas (ESA 1 and 2), however most work and existing services are located within urban areas and on the side of existing roads, or is in secondary or disturbed vegetation in the existing pipeline servitude corridor, or on roadside margins (as confirmed by the specialist). In accordance with the WCBSP, these areas have the management and specific objectives: As extracted from the 2023 WCBSP: Based on the proposal the WCBSP allows for restricted activities within these areas: “Based on the Land-uses that may compromise the biodiversity objective and are only permissible under certain conditions” These restricted activities are as follow for the proposal category:	

7. Infrastructure Installations

This category includes transport and service infrastructure servicing both urban and rural areas.

7.a) Linear infrastructure

Includes: Roads, railways, pipelines, canals, bulk water transfer schemes.

7.b) Other utilities

Includes: Wastewater treatment works, water purification plants, reservoirs, dams, communication base stations, power stations, renewable energy facilities.

Assumes the following conditions for both categories:

- Installations to be located on modified, disturbed or low-value agricultural land, where possible.
- Infrastructure installations requiring a location outside the urban edge is restricted to extensive agricultural areas peripheral to settlements in close proximity to regional routes to facilitate access and restrict fragmentation of the agricultural landscape and natural areas.
- Avoidance of sensitive areas such as flood lines, river and wetland buffers and special habitats.
- All water abstraction and transfer developments should be subject to the Ecological Reserve in terms of the National Water Act (Act 36 of 1998).

The proposal is in line with the above:

- It has been assessed by the specialist, Dr D Hoare, confirming CBAs of very high sensitivity are mapped as patches across the study area, but the footprint of the proposed pipeline only crosses areas that are secondary (previously transformed). These are legally defined as being in a natural state, but they do not have the characteristics of the original terrestrial vegetation that would have occurred there. Rehabilitation of construction impacts will restore these to their current state. No intact areas of CBAs or ESAs will therefore be affected.
- Sensitive areas were avoided and any aquatic habitats have been assessed by the aquatic specialist and a WULA is in process

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

N/A – not located within coastal management lines or high-water mark of the ocean

8. Explain whether the screening report has changed from the one submitted together with the application form. The screening report must be attached as Appendix I.

No change to the screening tool report

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

The proposal does not relate to the development of vacant land. It entails the upgrade and extension of the urban sewage network supplying the existing residential areas of Kwanokuthula.

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

The proposal will upgrade and maintain existing Municipal infrastructure that is old, broken and in dire need of an upgrade. The new extension will connect to approved future development areas which will connect to the existing infrastructure. All of this is in line with the Municipal sewage Master Plan.

Existing infrastructure is mapped as follows (Lyners Consulting Engineers):

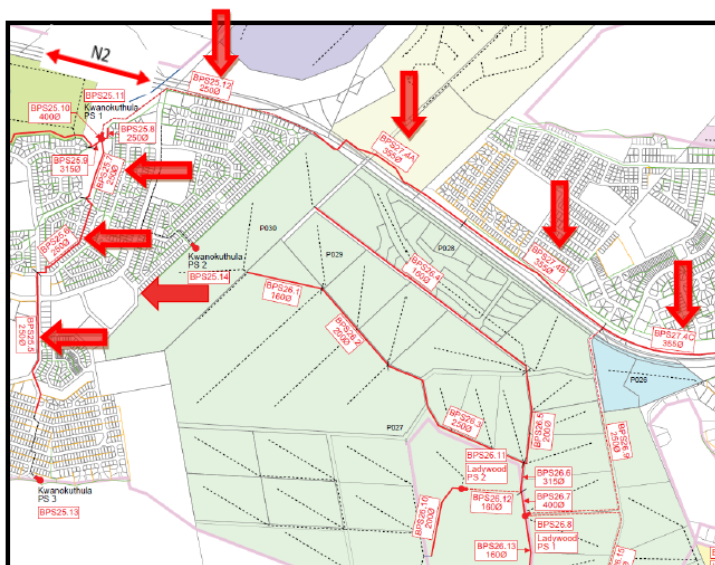


Figure 1: Extract from GLS June 2020 Sewer Masterplan

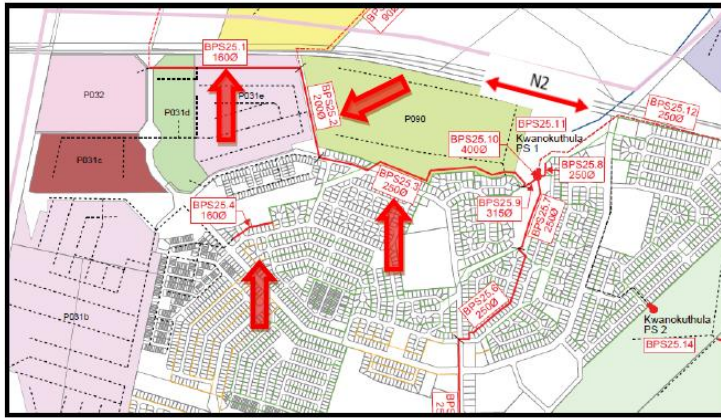


Figure 2: Extract from GLS June 2020 Sewer Masterplan

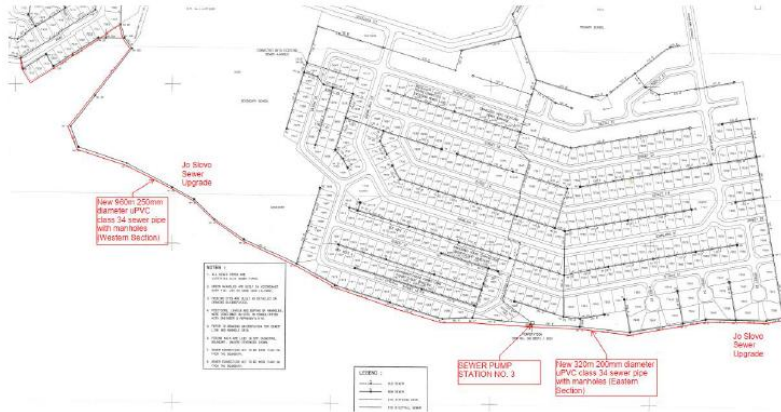


Figure 3: Extract from Existing Bitou Municipal Plans – Joe Slovo Sewer



Figure 4: Extract from Existing Bitou Municipal Plans – Thomas Street Sewer



Figure 14 : Overview of Pump Station Site

<i>PS1 to be expanded</i>	
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).
The proposal is the Municipal sewage service that will be upgraded – no confirmation of services required.	
12.	In addition to the above, explain the need and desirability of the proposed activity or development in terms of this Department's guideline on Need and Desirability (March 2013) or the DEA's Integrated Environmental Management Guideline on Need and Desirability. This may be attached to this BAR as Appendix K.
Need: - There is an environmental risk associated with the current infrastructure – the existing infrastructure is old and is leaking and overflowing, discharging raw sewage into wetlands, riparian systems and ultimately into the Roodefontein dam, a potable water resource for Plettenberg Bay. This has already resulted in ecological degradation, pollution and erosion and is therefore an urgent upgrade it required. - Current pipelines are undersized, deteriorated and prone to blockages, resulting in frequent overflows into residential areas. Certain pipelines are located midblock which is a nuisance to the community (extending under houses and through gardens). The upgrades are essential to ensure a reliable sanitation service for existing and future households and developments within the town. - The future needed developments (affordable housing, schools and commercial facilities) require the expanded sewer capacity, without it, these developments cannot proceed leading to a huge socio-economic loss in the town. - The project requires authorisation under section 21(c) and (i) of the NWA must meet NEMA requirements for sustainable infrastructure development. Desirability: - The aquatic assessment confirmed that wetlands and riparian systems are already degraded but retain ecological function. Upgrading the sewer system will halt ongoing pollution and allow rehabilitation through erosion control, stormwater management, and alien invasive plant removal. - The terrestrial biodiversity assessment found that most of the pipeline footprint is within transformed urban areas, with no intact natural habitats affected. Sensitive indigenous forest patches occur nearby, but construction will remain within existing servitudes, avoiding impacts on species of conservation concern. - The proposed upgrades will improve the sanitation infrastructure within the town – which will reduce health risks and support the Municipal growth objectives (new development areas) which in turn has a positive socio-economic impact on the community. The need and desirability for this project have also been highlighted within the Bitou Municipality Sewer Master Plan done by GLS (2020) and the proposal is in response to this study. In conclusion – in accordance with the Departments Guidelines on Need and Desirability, the proposal is both needed (urgent environmental and service delivery risks) and desired (balancing infrastructure development with biodiversity protection and socio-economic upliftment).	

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.

The PPP plan has been accepted by DEADP – dates changed in the plan to accommodate the DEADP response date.

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

Undertaken to date:

- **Submission of NOI (serving as a background information document) and WULA for public participation – 23 October 2025**
 - o **NEMA - NOI PPP Period- 23 October – 24 November 2025**
 - o **WULA PPP Period – 23 October 2025 – 12 January 2026**
- **A legal advert for advertising the NOI, future NEMA documents and WULA was placed in the Knysna Plett Herald – 23 October 2025**
- **Site notices for advertising the NOI, future NEMA documents and WULA were placed at a public place – 31 October 2025**

Currently being undertaken:

- **Legal advert in terms of NEMA appeared in the Knysna Plett Herald – 26 March 2026**
- **Site notice placed up at a public place – 31 March 2026**
- **The draft BAR and MMP are available for a 30-day commenting period (7 April – 11 May 2026)**

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

- DEADP - DEADPEIAAdmin.George@westerncape.gov.za - Department of Health Nathan.Jacobs@westerncape.gov.za - Department of Agriculture - CorvdW@elsenburg.com - SANRAL - AbrahamsN@nra.co.za - Department of Transport and Public Works - Vanessa.Stoffels@westerncape.gov.za - Cape Nature msimons@capenature.co.za - BOCMA - asam@bocma.co.za - Department of Forestry- imapokgole@dffe.gov.za - HWC- HWC.HWC@westerncape.gov.za - Bitou Municipality Environmental - Anjé Minne aminne@plett.gov.za - Bitou Municipality Engineering – Eddie Oosthuizen eoosthuizen@plett.gov.za - Garden Route District municipality Nina@gardenroute.gov.za - Department of Pollution Management and Chemicals - Catherine Bill (021- 483 2760); catherine.bill@westerncape.gov.za; Anthony van Wyk (021- 483 2980) anthony.vanwyk@westerncape.gov.za
Ward 6 – Ward councillor – Ms Nokuthula Seti, 083 926 6709 nseti@plett.gov.za (Kwanokuthula Phase 3, Phase 4, Phase 5)
Ward 5 – Ward councillor – Mr Samkele Mangxaba, 0605604412 smangxaba@plett.gov.za (Kwanokuthula Phase 1, Phase 2)
Ward 4 – Ward councillor – Mr Claude Terblanche, 0783405812, 044 501 3065, cterblanche@plett.gov.za (New Horizon, Ebenezer)

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

All of the above are being consulted

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

This document is subject to PPP – no responses to date

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.

This document is subject to PPP - no issues raised to date

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.		
N/A as it does not relate to groundwater			
1.3.	Indicate above which aquifer your proposed development will be located and explain how this has influenced your proposed development.		
N/A			
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.		
N/A			

2. Surface water

2.1.	Was a specialist study conducted?	YES	NO
2.2.	Provide the name and/or company who conducted the specialist study.		
Colin Fordham – Upstream Consulting			
2.3.	Explain how the presence of watercourse(s) and/or wetlands on the property(ies) has influenced your proposed development.		

The proposal entails the upgrade of the sewer networks, where the current lines are leaking profusely and do not have the relevant approvals in terms of the Water act, with certain sections crossing drainage lines. The specialist confirmed that the situation is dire and given the extent of the sewer lines the overflow of raw sewage threatens water resources such as the Roodefontein Dam.



Figure 8: Overflowing manhole (JoSlovo line) – full photographic records attached to Appendix C



Figure 9: Leak at western gravity line to PS1

Therefore, although there are various aquatic features (as identified by the specialist – described below), the proposed works are essential in order to legalise the network in terms of the Water Act and protect and rehabilitate the aquatic features and habitats. The presence of the aquatic habitats therefore strengthens the need for the proposal.

A WULA is in process with BOCMA.

As per the specialist assessment, Upstream Consulting, 2026 (Appendix G):

- **Historic context and future threats:**

Through reviewing historical aerial imagery, the site has been **significantly disturbed** since prior to 2004 (Figure 8). The extent of agricultural activities in the area changed drainage patterns and then the development of the town in as far back as the 1980s. Over time, the urban expansion activities have resulted in the loss of additional riparian habitat and transformed surface runoff patterns. In short, the past catchment land use practices and associated infrastructure have impacted several watercourses in the immediate and surrounding environment. However, this study is only reporting on any potential impacts from the upgrading, repair and maintenance of the existing sewer lines, not all the past impacts. It is however important to understand the broader historic context of the study area for this assessment. **Therefore, it is noted that the watercourses under assessment were already in a modified ecological state.**

Future threats to the watercourses of the study area include additional urban expansion and climate change. The expansion of the urban activities and infrastructure in the form of additional development has the potential to result in a further decrease water availability, and quality to the freshwater systems, while climate change is expected to alter the hydrological and geomorphological characteristics. The changes in rainfall patterns and flood intensity, interspersed with prolonged droughts, are expected to impact both surface and groundwater systems in the region. Engineering designs for the sewer lines specifically need to be designed to account for increase in intense flooding events which may initiate erosion and loss of infrastructure.



Figure 8: Aerial imagery taken of the area in 2004, showing how much of Kwanokuthula was present relative to sewer lines.

- **Identified aquatic features:**

The study area lies within the Southern Coastal Belt DWA Level 1 Ecoregion and the Gouritz Water Management Area (quaternary catchment K80F and K60G), with several unnamed non-perennial drainage lines traversing the study area, and one singular depression wetland within the study area. The southern-most portion of the study area drains toward the Roodefontein Dam.

Field verification confirmed the presence of several sensitive seasonal riparian systems and permanent wetlands within the study area. The drainage lines generally support thicket and forest vegetation communities typical of the fynbos biome of the area. While no rare or endangered species were observed during field surveys, these systems serve as important refugia for a variety of generalist amphibians, reptiles, and birds. The area's fractured and weathered hard rock aquifer system results in strong surface-groundwater linkages, and the local soils exhibit moderate to high erodibility. The assessment noted moderate ecological degradation, invasion by alien vegetation, and pollution from urban runoff, but confirmed that the systems still retain ecological function and habitat value.

Three wetlands and two riparian systems would be directly impacted by the proposed scope of works. Unchannelled Valley Bottom (UCVB) 1 and UCVB 2 are two wetlands located centrally in the Kwanokuthula township. Both systems are heavily impacted by sewage leaks and are in a poor Present Ecological State (PES) of Largely Modified (D). They still provide a level of ecosystem services and have an Ecological Importance and Sensitivity rating of a Low. The third wetland is a Hillslope Seep wetland (Seep 2). Seep 2 is located on the far eastern corner of the site and is in a slightly better PES condition of Moderately Modified (C). As the system passes into the urban neighbourhood it degrades quickly and this, as well as its location at the top of its catchment, limits the ability of the system to provide significant ecosystem services. Seep 2 therefore has a very low EIS score.

The two riparian systems that would be impacted by the proposed scope of works are labelled Rip 1 and Rip 2. Rip 2 merges into Rip 1 as the systems flow southwards. Both of these systems are in similar condition given their proximity to each other and the town of Kwanokuthula. The PES assessment determined that each unit is largely modified PES (D) with a 'C' EIS.

Aquatic features that have been mapped in the area:



Figure 5: Map of the site in relation to SWSAs and quaternary catchments



Figure 6: The site in relation to the national wetland and river desktop data inventories

Specialist delineated aquatic habitats:

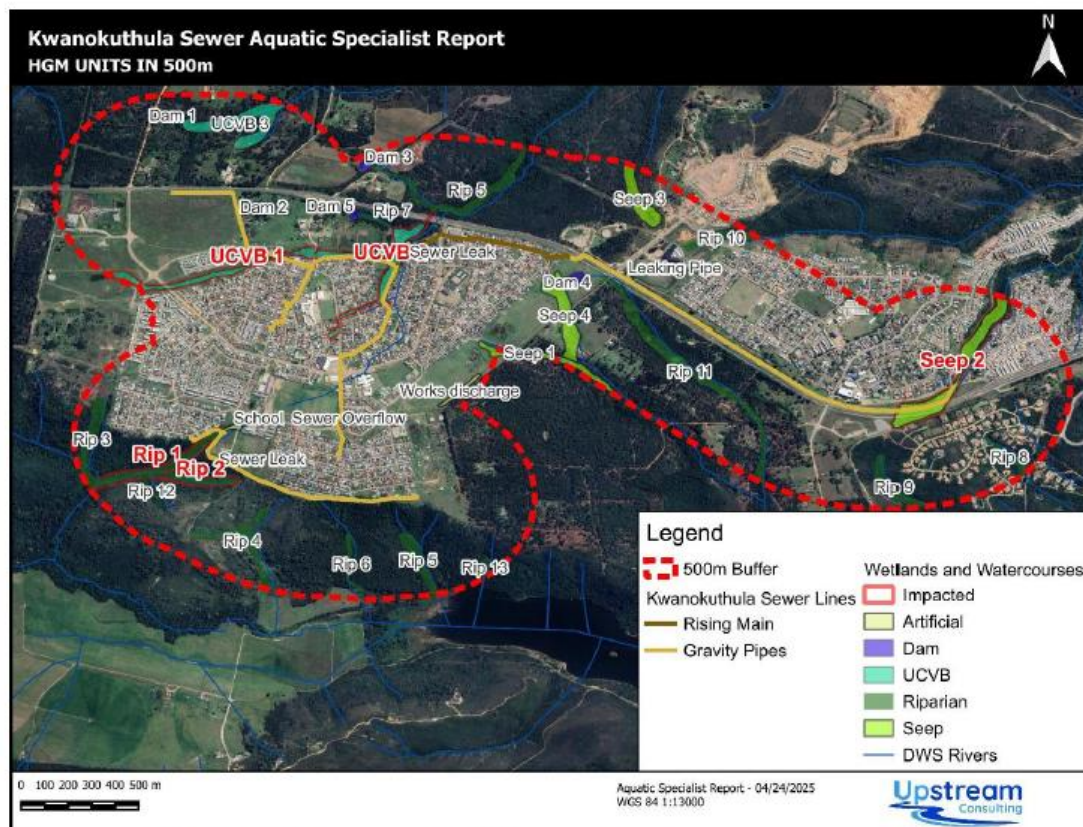


Figure 9: Map of the delineated aquatic habitat within the study area following site verification.

Identified aquatic habitat and features:

Rip 1 and 2 (unnamed non-perennial streams)
Where: Jo-Slovo pipeline

Concern: Moderate ecological importance and sensitivity category, provide refugia for generalist fauna and support indigenous fynbos and thicket/forest. Areas are SENSITIVE to water quality changes due to low dilution and urban stormwater inputs/sewage leaks: These systems have been largely impacted by poor water quality (sewer leaks), slightly modified bed, flow, and bank condition modifications. The systems are geomorphologically stable. The riparian zones have been subjected to habitat loss due to moderate level of alien plant infestation, resulting in a moderate loss of natural habitat, biota and basic ecosystem functions.

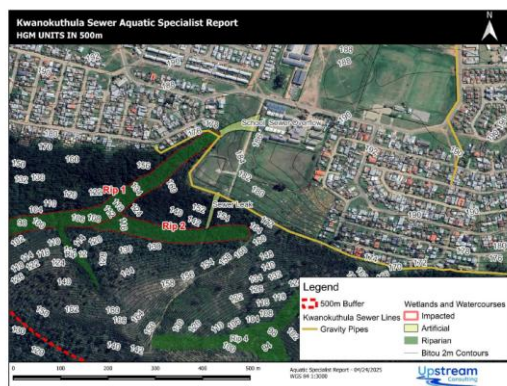


Figure 10: Map of the delineated aquatic habitat of impacted RIP 1 and RIP 2 riparian HGM units.

"The slope and original topographical setting of these HGM units are only slightly modified by the sewage spills and development of Kwanokuthula. Little modification has occurred to the topographical setting of the unit. These systems also appear to be currently geomorphologically stable with minimal serious erosion noted. The hydrological regime, however, of this system, has, however, been highly modified by the constant sewage leaks. Within the catchment (upstream), the system's habitat has been transformed, and it is moderately impacted by the development of Kwanokuthula".



Plate 1: Photograph taken of the RIP 1 system indicating level of disturbance and thicket dominated habitat.



Plate 2: A photograph taken of the leak from the school that enters Rip 1, which has leaked for so long that an artificial wetland has formed.



Figure 11: LOCATION OF JOE SLOVO BULK SEWER



Plate 3: A photograph taken of the overflowing sewer manhole which directly flows into Rip 1.



Plate 4: A photograph taken of the overflowing sewer manhole which directly flows into Rip 2.



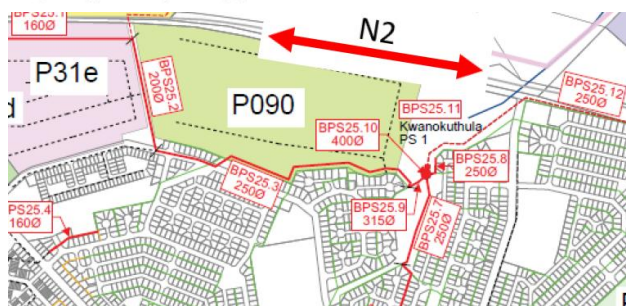
Plate 5: A photograph taken near the top of RIP 2 system, showing Roodefontein Dam.

UCVB 1 and 2 – unchanneled Valley Bottom systems Where: PS 1, BPS 25.3 25.7, 25.8, 25.9, 25.10, 25.11

Concerns: Condition is Largely Modified with a low to very low importance score – these systems still provide critical services: habitat loss and disturbance, erosion, formalisation of stormwater drainage and significant hydrological changes as well as alien infestation within these areas



Figure 11: Map of the delineated aquatic habitat of impacted UCVB 1 and UCVB 2 HGM units.



"The slope and original topographical setting of these HGM units has been significantly modified through the construction of the township of Kwanokuthula, naturally these systems would have been unchanneled valley bottom systems, but now they have distinct channels eroded in both systems. These systems are slowly eroding further threatening geomorphological health. Like Rip 1 and Rip 2 the hydrological regime of these systems, has been highly modified, by the constant sewage leaks. The urban infrastructure of both systems has also been significantly modified through the construction of Kwanokuthula, as lateral inputs have become concentrated through urban development and stormwater systems".



Plate 6: Photograph taken of the UCVB 1 system indicating level of disturbance and confined eroded channel dominated by *Typha capensis*.



Plate 7: A photograph taken of the UCVB 1 system lower down where flow is less confined before it merges with UCVB 2.



Plate 8: A photograph taken of the UCVB 2 system showing level of pollution in the system.



Plate 9: A photograph taken of the UCVB 2 system showing the eroded channel and alien vegetation.

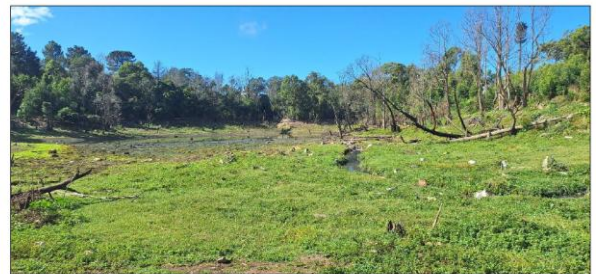


Plate 10: A photograph taken near the confluence UCVB 1 and 2 showing the old dam which has a hole in it

Seep 2

Where: BSP 27.4

Concerns: Condition is Largely Modified, only partially to be able to supply important ecosystem services due to urban pressure: habitat loss and disturbance, erosion, formalisation of stormwater drainage and significant hydrological changes as well as alien infestation within these areas



Figure 12: Map of the delineated aquatic habitat of impacted Seep 2 HGM unit.

"The slope and original topographical setting of this HGM units has been modified through the construction of the N2. The Seep 2 system is stable in terms of geomorphological health. The hydrological regime of this system has been highly modified, by the N2 and urban stormwater inputs, as lateral inputs have become concentrated through urban development and stormwater systems".

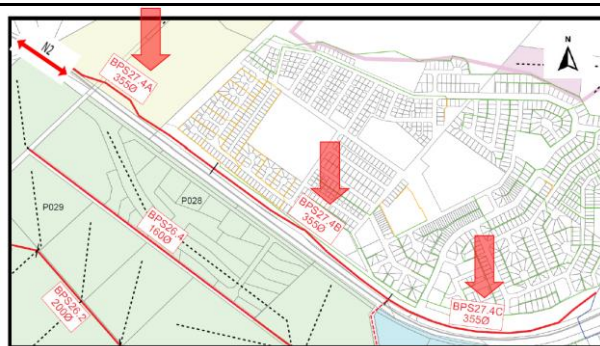


Figure 6: LOCATION OF BPS 27.4A, BPS 27.4B & BPS 27.4C



Plate 11: Photograph taken of the Seep 2 system indicating location of N2 and its dominance by *Typha capensis*.



Plate 12: Photograph taken above of the Seep 2 system indicating where it flows into the suburb and is confined.

How the above influenced the proposal:

- The proposed sewer alignments were planned to follow existing corridors and minimise new disturbance to aquatic habitats.
- The project deliberately avoids expanding into undisturbed areas, restricting works to existing servitudes and degraded footprints and where erosion is evident.
- Alternatives were considered: the "No-Go" option would perpetuate ongoing sewage pollution, while the preferred upgrade option temporarily impacts aquatic systems but ultimately reduces long-term degradation.

Mitigation measures recommended by the specialist have been incorporated into the EMP and MMP for implementation.

3. Coastal Environment

3.1.	Was a specialist study conducted?	YES	NO
3.2.	Provide the name and/or company who conducted the specialist study.		
N/A to the location and the proposal			
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.		
N/A			
3.4.	Explain how estuary management plans (if applicable) has influenced the proposed development.		
N/A			
3.5.	Explain how the modelled coastal risk zones, the coastal protection zone, littoral active zone and estuarine functional zones, have influenced the proposed development.		

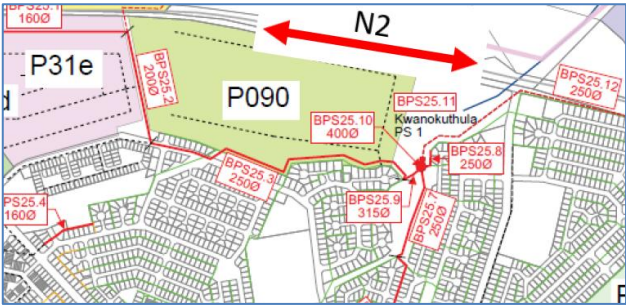
4. Biodiversity

4.1.	Were specialist studies conducted?	YES	NO
4.2.	Provide the name and/or company who conducted the specialist studies.		
Dr D Hoare from BioCensus			
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.		
In terms of the Western Cape Biodiversity Spatial Plan (WCBSP, 2023) the routes are mostly inside urban areas or next to the roads (in road reserves), where small areas are mapped as within Critical Biodiversity Areas (CBA1, natural and CBA 2, degraded) and Ecological Support Areas (ESA 1, and ESA 2, to restore).			
This influenced the development by keeping to the existing transformed servitude areas, limiting the working areas during construction, requiring rehabilitation of construction impacts (erosion control, alien invasive management) to restore the footprint to its current state.			
In terms of the National Biodiversity Areas, the entire route has been mapped as falling within Southern Outeniqua Sandstone Fynbos			

As confirmed by the specialist, Dr D Hoare: Most of the footprint of the proposed pipeline upgrade is within existing urban areas that do not affect any natural vegetation. The possible exceptions are as follows:

- Near to the entrance to Kwanokuthula the pipeline runs close to a valley system that is the upper reaches of the Diep River.

Where: PS 1, BPS 25.3 25.7, 25.8, 25.9, 25.10, 25.11 and UCVB 1 and 2 identified by aquatic specialist



- Along the southern side of Kwanokuthula the pipeline runs close to the edge of indigenous forest areas.

Where: Jo Slovo Pipeline and location of Rip 1 and 2 identified by aquatic specialist:

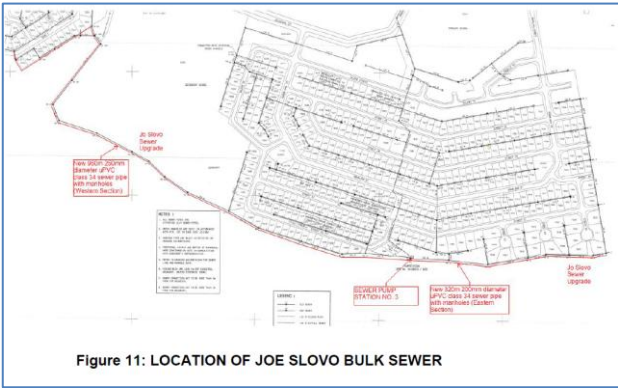


Figure 11: LOCATION OF JOE SLOVO BULK SEWER



Photo 1905

34°03'23.98"S, 23°18'47.17"E

View of the plateau edge on the southern side of Kwanokuthula at Site 5. This is on the alignment of the existing pipeline near to a small powerline that crosses the pipeline route. The vegetation is secondary grassland in the corridor, bordering on the forest edge.

This highlighted that the work needs to remain within transformed servitude areas within the above-mentioned areas and a narrow working area has been allowed for.

Based on the biodiversity informants identified by both the terrestrial and aquatic specialists, the proposal was supported as it will halt sewage pollution, improving the ecological integrity in sensitive areas or in proximity to sensitive areas.

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.

As per the WCBSP, the objectives and guidelines for both CBA 1,2 and ESA 1, 2 are as follows:

Map category	Desired management objective	General guidelines	Specific guidelines
Critical Biodiversity Area I: Terrestrial & Forest	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.	- Biodiversity loss and land-use change in verified CBAs should not be permitted. Unauthorised land-use change or degradation by neglect or ignorance must be monitored as a matter of priority. - Ideally, conservation management activities should be the primary land-use in all Biodiversity Priority Areas, or they should at least be managed in ways that have no negative impact on species, ecosystems, or ecosystem services. - Conservation efforts should focus on conserving Species of Conservation Concern and populations of keystone species and species responsible for pollination and seed dispersal.	- Ideally, developments should be avoided in these areas. If they cannot be avoided, it must be shown that the mitigation hierarchy has been applied. If the impact cannot be avoided or reduced to a residual low significance, a biodiversity offset may be considered as a last resort. - The features behind a site being identified as a CBA must be fully investigated. Some areas may appear degraded but still be important for water or ecological connectivity for example. - Relevant specialist studies must form part of a Basic Assessment or the Scoping and EIA process for all land-use applications in these areas, using the services of an experienced and locally knowledgeable biodiversity expert who is registered with the South African Council for Natural Scientific Professions (SACNASP). - Applications for land-use of any kind should be referred to the Land-use and Conservation Planning team at CapeNature for comment. - Degraded areas included in the land parcel, but not the land-use proposal, should be restored to natural ecosystem functioning where possible. - Alien clearing should be given high priority.

Critical Biodiversity Area 1: Aquatic	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.	- Freshwater CBAs should be maintained in good ecological condition, and those that are degraded should be rehabilitated to a good condition. - Land-use practices or activities that will lead to deterioration in the current condition of a freshwater CBA, or that will compromise rehabilitation, are not acceptable.	- There is no flexibility in land-use options in this category. - Any activities that may impact on CBA rivers, wetlands, or estuaries, even upstream or in sub-catchments, need to be avoided, or impacts mitigated if they cannot be avoided. - If the current ecological condition is good (either natural and unmodified, or largely natural with only small change in habitats and biota), then this condition needs to be maintained.
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TABLE 4.1: Land-use guidelines for protected areas and Critical Biodiversity Areas. Spatial layers can be viewed in CapeFarmMapper and on SANBI BGIS (continued).

Map category	Desired management objective	General guidelines	Specific guidelines
Critical Biodiversity Area 1: Aquatic (continued)		- Any proposed land-use change must be subject to an EIA as it is likely to impact on the ecological drivers of the river or wetland ecosystem and potentially alter its functioning or lead to loss of species. - The hydrological regime and water quality of a river, wetland or estuary must be adequate to maintain the ecosystem in a desired or attainable condition. - Maintain the riparian vegetation and a buffer from other land-uses along watercourses and implement rehabilitation measures where there is erosion or other degradation present.	- If the current ecological condition is fair to poor (i.e., moderately to severely degraded with significant loss of natural habitat, biota and ecosystem functions), then this needs to be improved through rehabilitation measures. Any further loss of area or ecological condition must be avoided. - Allow for future rehabilitation or restoration. - Specialist studies by a freshwater ecologist should be conducted if there is a watercourse that is likely to be affected.
Critical Biodiversity Area (Degraded)	Maintain in a functional, natural, or near-natural state, with no further loss of natural habitat. These areas should be rehabilitated.	Acceptable land-uses are those that are least harmful to biodiversity, such as conservation management, or extensive livestock or game farming. Large-scale cultivation, mining and urban or industrial development are not appropriate.	- If small-scale land-use change is unavoidable, it must be located and designed to be as low impact and biodiversity sensitive as possible. - A specialist study must be part of the scoping and EIA process for all land-use applications in these areas, using the services of an experienced and locally knowledgeable biodiversity expert registered with SACNASP. - Should be targeted as high priority areas for rehabilitation and restoration.
Map category	General guidelines	Specific Guidelines	
ESA: Water Source Protection	Maintain in a functional, near-natural state.	- Any land-use activity in Mountain Catchment Areas should allow for the continued provision and natural slow release of water flowing into river catchments. Hard surfaces should not be permitted and should be restricted to essential infrastructure to support catchment areas. - Mining places the delivery of good quality water in adequate quantities at risk, mining should not be permitted in water source areas especially Strategic Water Source Areas (SWSAs). - These areas should be targeted for rehabilitation and restoration activities that support the release of water, in particular clearing of invasive alien trees and remediation of erosion. The clearing of invasive alien plants from drainage lines and wetlands within these areas must be a provincial priority. - Substantial buffers should be established around streams and wetlands in catchments within these areas. - Cultivation should not be permitted in these areas.	
Ecological Support Area 2	Restore and/or manage to minimise impact on ecological infrastructure functioning; especially soil and water-related services.	- These are areas which may already have some form of development (cultivation, mining or even buildings and infrastructure) but which should be providing ecosystem services. Where possible the current land-uses should be withdrawn, and rehabilitation undertaken. - Best practice should apply in areas where land-uses other than conservation is present e.g., agriculture. - These areas should be targeted for habitat rehabilitation and restoration activities e.g., alien clearing.	

The objectives and guidelines were considered by the relevant specialists:

- Considering the guidelines – the work associated with the proposal remain restricted to the existing pipeline routes, servitudes or urban transformed areas. Intact areas are being avoided as confirmed by the specialists.
- The proposal, as a whole, will address the current pollution and erosion issues.
- No SCC have been identified by specialists and where they have the potential to occur in adjacent areas, work will be restricted to the existing transformed areas.
- No new development will impact these areas.
- Mitigation measures recommended by specialists – rehabilitation, restoration, alien control etc. have been included in the EMP and MMP for implementation.

It is important to look at the degraded status of the area. The proposal will allow for restoration of the current environmental damage being incurred, which should be seen as a positive impact to the current situation.

The proposal therefore fully aligns with the objectives and guidelines set out in the handbook:





Jo Slovo pipeline



PS3



Line adjacent to N2



Western line to PS1



New line to be installed to future development

The proposal will allow for balancing infrastructure development with biodiversity protection, while addressing urgent service delivery, pollution prevention and public health needs in the town.

- 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.

Site specific features identified by aquatic and terrestrial biodiversity specialists:

Aquatic:

The Aquatic Assessment confirmed the presence of two riparian systems (Rip 1 and Rip 2) and three wetlands (UCVB 1, UCVB 2, and Seep 2). These are mapped as sensitive aquatic CBAs, but site verification showed they are already degraded by sewage leaks and urban runoff, with Present Ecological State ratings of “Largely Modified (D)” or “Moderately Modified (C).”

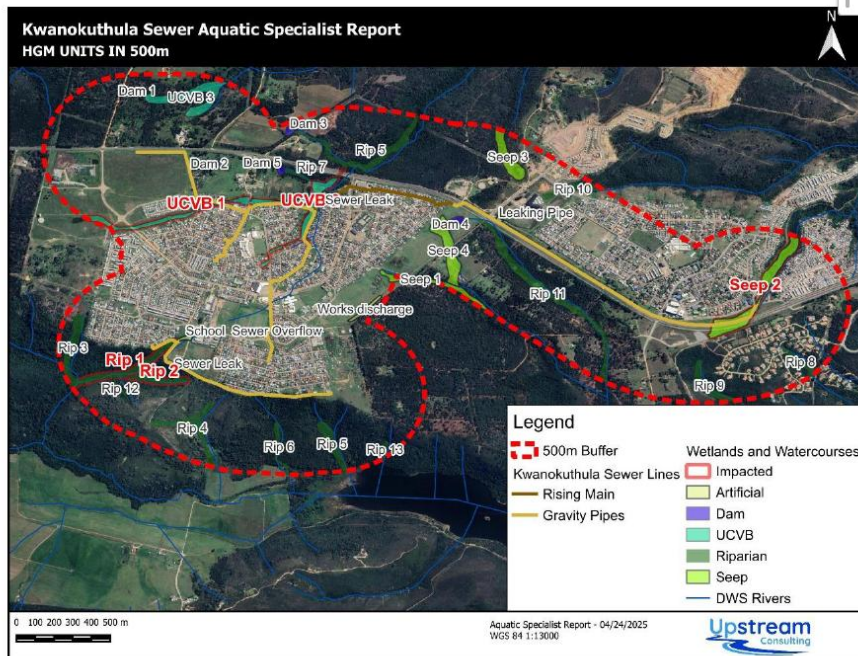


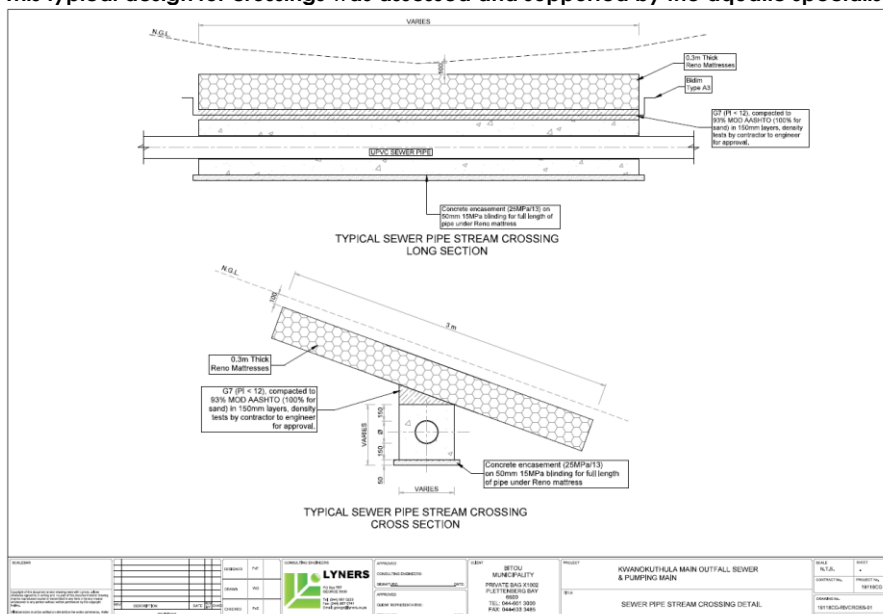
Figure 9: Map of the delineated aquatic habitat within the study area following site verification.

Terrestrial:

The Terrestrial Biodiversity Assessment found that most of the pipeline footprint lies within transformed urban areas. While CBAs of very high sensitivity are mapped, the footprint intersects only secondary areas lacking intact natural vegetation. Indigenous forest patches (Southern Afrotemperate Forest) occur nearby certain areas (see below), but construction is confined to existing servitudes, avoiding direct impacts.

How did this influence the proposal:

This typical design for crossings was assessed and supported by the aquatic specialist:



Work will need to be undertaken in accordance with engineering method statement.

Work to remain within existing servitude areas and transformed areas.

Where work is in proximity to the sensitive areas – the working zone will be restricted.

Specialist mitigation measures have been incorporated in the EMPr/MMP which will need to be implemented and adhered to.

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

The areas where work will be undertaken are not located within protected areas

4.7.	Explain how the presence of fauna on and adjacent to the proposed development has influenced your proposed development.
As per the specialist, Dr D Hoare, 2026: No animal species of conservation concern were found on the site, but the habitat on site is potentially suitable to support two SCC flagged for the site. The site sensitivity for the Animal Species Theme is therefore MEDIUM. The Crowned Eagle (<i>Stephanoaetus coronatus</i>) has a range that includes the study area and has been recorded several times in proximity to the site. In South Africa, it occurs in both lowland and montane evergreen forest, dense woodland, and forested ravines and gorges in open savannas and thornveld. It is therefore highly likely to occur in the general area. Sensitive species 8 has a range that includes the study area and has been recorded a few times in proximity to the site. It is found in dense forest and thicket. It is therefore possible for it to occur in the area. However, illegal hunting is a factor that probably limits its occurrence in the area.	

5. Geographical Aspects

Explain whether any geographical aspects will be affected and how has this influenced the proposed activity or development.	
- Topography: The terrain is generally flat to gently sloping, with steeper slopes along the southern boundary of the settlement (Jo Slovo Line). In order to avoid disturbance / erosion of steep slopes and potential impacts to sensitive forest areas work within this area are to remain within the disturbance zone which is the existing transformed servitude area. Predominantly silty sands, ferricrete, and silt/silty clays derived from Table Mountain sandstone and Enon conglomerates. These soils are moderately to highly erodible, with perched water tables possible in ferricrete layers (Outeniqua Lab, 2025). The design of the engineers therefore took these findings into account and erosion mitigation measures have been included in the EMPr/MMP for implementation.	
- Hydrology: The study area drains southwards toward the Roodefontein Dam, a potable water source for Plettenberg Bay, with strong surface-groundwater linkages due to fractured aquifers. Overflow of raw sewage is affecting this potable water source and the upgrade is required to halt ongoing pollution.	
- Aquatic Two riparian drainage lines (Rip 1 and Rip 2) and three wetlands (UCVB 1, UCVB 2, and Seep 2) occur within the township footprint. These are mapped as sensitive aquatic CBAs but are already degraded by sewage leaks and urban runoff. The current situation is causing pollution of these systems and this in turn highlights the need for the proposed upgrades. The eastern bank of the river next to PS1 is eroding which could result in infrastructure failure and additional pollution. This will degrade the aquatic system, as mitigation measure the riverbank protection is required. This has therefore highlighted the need for the proposal as it will halt continual sewage pollution and improvement of the long-term ecological functioning of aquatic habitats. Based on the aquatic habitats identified, a WULA is in process allow for the infrastructure in terms of the NWA.	
- Terrestrial biodiversity: As confirmed by the specialist - the site lies within South Outeniqua Sandstone Fynbos, with patches of Southern Afrotemperate Forest nearby. Most of the pipeline footprint is within transformed urban areas, but the southern alignment runs adjacent to indigenous forest. Based on the location of certain working areas being in proximity to the forest – work will remain within the transformed servitude area. The proposed works will remain within the existing transformed areas or areas that no longer support intact habitats. Mitigation measures included in the EMPr/MMP includes rehabilitation of disturbed areas, alien invasive control, erosion prevention and monitoring of aquatic habitats in order to protect the biodiversity and maintain the ecological functioning.	

6. Heritage Resources

6.1.	Was a specialist study conducted?	YES	NO
6.2.	Provide the name and/or company who conducted the specialist study.		
Not undertaken, HWC confirmed on 11 April 2025 that no submission of a NID will be required and therefore no specialist assessments will be required. The General Duty of Care and chance find procedures are included in the EMPr.			

6.3.	Explain how areas that contain sensitive heritage resources have influenced the proposed development.
N/A – no sensitive heritage resources affected – existing infrastructure maintenance and upgrade.	

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.	
None present	

8. Socio/Economic Aspects

8.1.	Describe the existing social and economic characteristics of the community in the vicinity of the proposed site.
The proposal is located within the Kwanokuthula township west of Plettenberg Bay. The township consists largely of low to middle income households. Housing is dense and there are limited open space areas. The households rely on Municipal services and currently there are frequent sewer overflows and associated pollution and health risks. It further has a direct impact on the community well-being as the neighbourhood and adjacent water resources are being polluted on a regular basis – the Roodefontein Dam is being contaminated by the overflows.	
8.2.	Explain the socio-economic value/contribution of the proposed development.
The proposal will result in: - Improved sanitation which improves the overall community's health - It provides reliable infrastructure - It allows for approved future developments to continue - The construction and maintenance phases will result in short term job opportunities for the community - It will prevent the contamination of environmental areas - It will prevent the contamination of Plettenberg Bays potable water resource – the Roodefontein Dam	
8.3.	Explain what social initiatives will be implemented by applicant to address the needs of the community and to uplift the area.
- Provision of a working sewer network - No more health and safety risks associated with the current overflows and broken infrastructure - Connection provided to future development areas - The construction, operational/maintenance phase will result in various job opportunities	
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.
Noise – the construction phase will have site specific noise generation, but it will not be excessive or different to normal maintenance and construction works associated with normal upkeep of Municipal infrastructure. It will be short term and site specific. Odours – currently broken sewage infrastructure and overflow of manholes have negative odour impacts, the upgrading will result in the elimination of odours Visual – currently broken infrastructure, overflow etc results in a negative visual impact, the upgrades will improve this and improve the sense of place. Health and safety – there are major health and safety risks associated with the current conditions (e.g. water borne diseases, illnesses as a result of contact with the sewage/gases, the broken infrastructure is a structural hazard, environmental pollution further impacting animal, plant and human health, soil degradation, negative socio-economic impact within the area, illegal dumping, excessive waste and litter pollution). The upgrade of the sewer network is required to improve current health and safety risks associated with the ongoing failures of the sewage network. Failure to implement the proposed project will result in ongoing negative impacts on the community's health and well-being. Implementation of the proposed project will result in significant positive impacts on people's health and well-being.	

SECTION H: ALTERNATIVES, METHODOLOGY AND ASSESSMENT OF ALTERNATIVES

1. Details of the alternatives identified and considered

1.1.	Property and site alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.
Provide a description of the preferred property and site alternative.	
Existing infrastructure maintenance and upgrade. The preferred sites follow the servitude areas and pipeline routes associated with the existing infrastructure and connection to new areas. The erosion that may affect PS1 is property and site specific. The river bank protection is essential to prevent future erosion and sewage leaks into the system.	

Provide a description of any other property and site alternatives investigated.	
None investigated	
Provide a motivation for the preferred property and site alternative including the outcome of the site selection matrix.	
The proposal is for the upgrade of the existing sewage infrastructure; therefore, it is property and site specific. The failing pipelines are already located within established urban corridors and servitudes, and the project's scope is to repair, replace, and upgrade these lines rather than introduce new infrastructure in undisturbed areas. In the urban areas there will be deviations made from the existing line where it is a midblock sewer to replace with a sewer in the road reserve to avoid having to work between homes. The existing midblock lines will remain as connections for those homes. The new connections will pick up the future development areas. In terms of avoidance - when relocating the infrastructure it is restricted to road reserves within the urban area and restricted to the services servitude along the edges of the urban area – new disturbances areas are avoided.	
Provide a full description of the process followed to reach the preferred alternative within the site.	
The preferred alternative within the site was reached as the proposal is for upgrade and maintenance of the existing sewage infrastructure servicing Kwanokuthula The proposal has been assessed and supported by the relevant specialists	
Provide a detailed motivation if no property and site alternatives were considered.	
No alternative properties and sites were considered as the proposal is location specific and infrastructure driven- upgrading of existing infrastructure, providing bulk connection to new development areas (site specific location of these approvals) and implementing erosion mitigation measures, where required, to prevent future erosion risk and sewage infrastructure failure and pollution. The properties and sites associated with the proposal have been fully assessed and supported by the specialists.	
List the positive and negative impacts that the property and site alternatives will have on the environment.	
No property and site alternatives have been assessed. Preferred alternative positive impacts - Prevention of the current pollution of the environment through leakage and system failures. - Minimisation of environmental disturbances by selecting sites where the existing infrastructure are located. Sensitive sites are being avoided. - Improved sanitation services enhance public health and wellbeing of the local community. - Makes use of established infrastructure corridors. Preferred alternative negative impacts - Temporary construction nuisances (noise, dust, visual etc) within the affected properties/sites - Limited clearing of vegetation and work within aquatic features at certain sites for the upgrade of the sewer network and riverbank stabilisation (short term impact) - Short term disturbance to private property during construction.	
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 activity is to replace existing municipal sewage pipelines which will result in the temporary disturbance of vegetation and earthworks within the sewage servitudes and crossing watercourses where required. The preferred activity is to replace and upgrade the existing municipal infrastructure as required and detailed in the report. Erosion protection measures where required along riverbank adjacent to PS1 as detailed in the engineering report in order to prevent future undermining of the sewage infrastructure and potential sewage pollution into the aquatic system.	
Provide a description of any other activity alternatives investigated.	
No alternative activities were investigated - the existing failing infrastructure requires maintenance and upgrade to prevent the ongoing pollution occurring and to reduce the health risk associated with sewage leaks. Ongoing failures due to blockage of the system will be prevented through the proposed repair and upgrade to the system.	
Provide a motivation for the preferred activity alternative.	
• The infrastructure already exists but is in need of maintenance and upgrade. • The alignment is mostly fixed within existing municipal services servitudes. • The activity is required to avoid ongoing pollution to the environment which threatens both public health and environmental health.	
Provide a detailed motivation if no activity alternatives exist.	
See comment above – repair and maintenance and upgrade to the existing system is essential.	
List the positive and negative impacts that the activity alternatives will have on the environment.	
No property and site alternatives have been assessed. Preferred alternative positive impacts - Prevention of the current pollution of the environment through leakage and system failures. - Minimisation of environmental disturbances by selecting sites where the existing infrastructure are located. Sensitive sites are being avoided.	

- Improved sanitation services enhance public health and wellbeing of the local community.
- Makes use of established infrastructure corridors.

Preferred alternative negative impacts

- Temporary construction nuisances (noise, dust, visual etc) within the affected properties/sites
- Limited clearing of vegetation and work within aquatic features at certain sites for the upgrade of the sewer network and riverbank stabilisation (short term impact)
- Short term disturbance to private property during construction.

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.

The preferred layout is keeping upgrades to the existing network, services servitudes and to introduce minor realignment where the infrastructure is located within a midblock where it is inside private property between homes and difficult to access and maintain.

River crossings have been assessed and will be improved to reduce the current pollution threats to the system through system failure and blockages which result in raw sewage flowing into the freshwater resources.

PS 1 design/layout alternatives were to keep within the existing area or expand in order to provide infrastructure that is able to handle the upgrades associated with the proposal.

10.4.8 Preliminary Design Lay-out options for the proposed upgrade

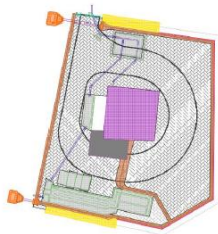


Figure 23 : Option 1 – Proposed upgrade layout within the existing Pumpstation yard



Figure 24 : Option 2 – Proposed upgrade layout extending to the south of the existing Pumpstation yard

Figure 10: Top - option 1 keeping within the existing yard. Bottom - preferred alternative, expand southwards (Lyners Consulting Engineers, 2026)

Riverbank stabilisation to be implemented where there is current erosion along the bank next to PS1 that may undermine the infrastructure and result in pollution threats in the future:

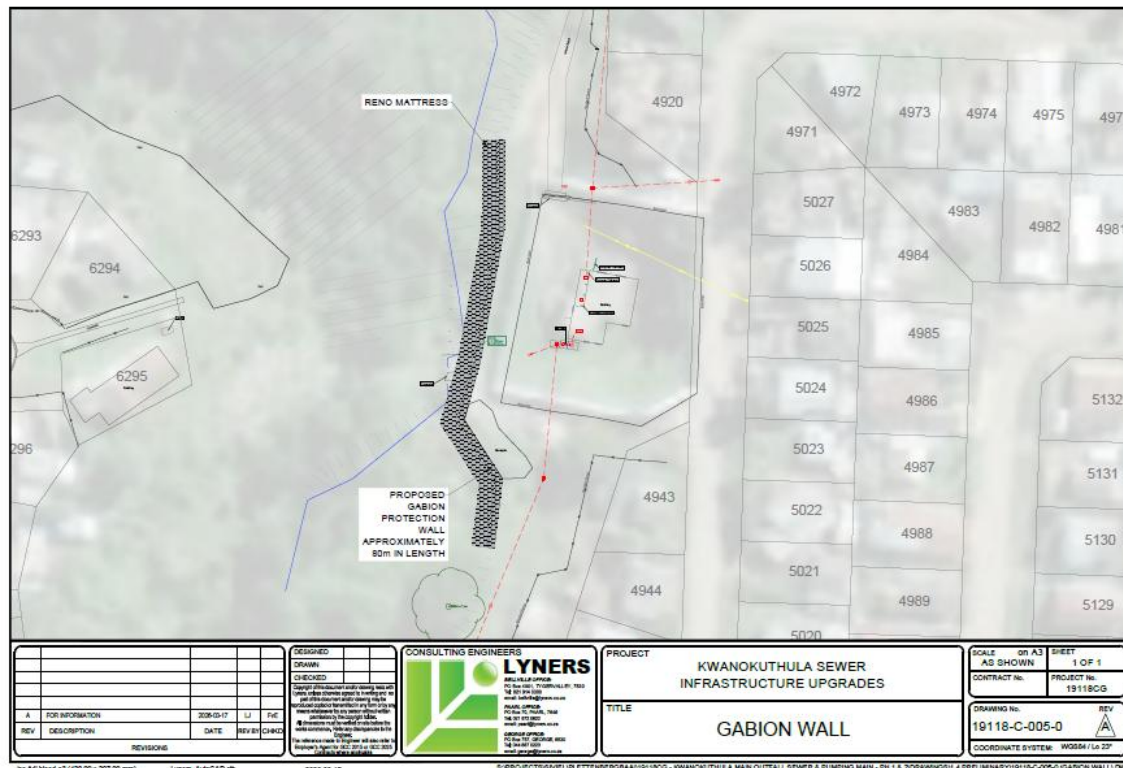


Figure 11: Riverbank stabilisation layout – no alternative investigated

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

See above

Provide a motivation for the preferred design or layout alternative.

The network is existing service infrastructure services within an existing urban area which reduces the layout change options. The system needs to continue to operate while the upgrade and maintenance is undertaken. The proposed expansion southwards of PS1 will allow for the accommodation of additional infrastructure that will be able to connect and handle the upgraded sewer network. The riverbank erosion is site specific which needs to be addressed. All work will be within the existing sewage services servitudes of the local authority and road reserves. The engineering design has taken into account the pipeline sizing to handle future flow and prevent the current blockages in the system that result in system failure and pollution to the surrounding human and natural systems.

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

Design and layout alternatives have been considered in the engineering design process.

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

Preferred alternative positive impacts

- Prevention of the current pollution of the environment through leakage and system failures.
- Minimisation of environmental disturbances by selecting sites where the existing infrastructure are located. Sensitive sites are being avoided.
- Improved sanitation services enhance public health and wellbeing of the local community.
- Makes use of established infrastructure corridors.

Preferred alternative negative impacts

- Temporary construction nuisances (noise, dust, visual etc) within the affected properties/sites
- Limited clearing of vegetation and work within aquatic features at certain sites for the upgrade of the sewer network and riverbank stabilisation (short term impact)
- Short term disturbance to private property during construction.

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

Provide a description of the preferred technology alternative:

N/A – already addressed under design – latest technology that will be able to accommodate the demand

Provide a description of any other technology alternatives investigated.

N/A

Provide a motivation for the preferred technology alternative.

N/A

Provide a detailed motivation if no alternatives exist.

N/A	
List the positive and negative impacts that the technology alternatives will have on the environment.	
N/A	
1.5.	Operational alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.
Provide a description of the preferred operational alternative.	
N/A – the operational phase will require ongoing maintenance as per the municipal service infrastructure maintenance plan and any works which have implications in terms of NEMA are covered under a MMP in relation to the ongoing required maintenance	
Provide a description of any other operational alternatives investigated.	
N/A	
Provide a motivation for the preferred operational alternative.	
N/A	
Provide a detailed motivation if no alternatives exist.	
N/A	
List the positive and negative impacts that the operational alternatives will have on the environment.	
N/A	
1.6.	The option of not implementing the activity (the 'No-Go' Option).
Provide an explanation as to why the 'No-Go' Option is not preferred.	
The no – go will be to continue to implement ad hoc repairs, which work for a short while before the system blocks and overflows of raw sewage into the surrounding environment continues. The riverbank will not be stabilised at PS1 which will result in continued erosion and eventual failure at the pumpstation resulting in raw sewage flowing in the river. The NEMA Duty of Care prohibits the continuation of the “no-go” alternative. The current situation is a serious environmental and human health risk and cannot continue. This is not preferred based on the following: - The network is experiencing overflows, leak, spillages resulting in pollution and contamination of soil, water and open spaces. Not upgrading the system will allow these impacts to persist and intensify – result in extreme habitat degradation and contamination of Plettenberg Bays potable water resource and serious health risk. - There will be no improvement to the current health risks associated with the failing infrastructure - New developmental areas will have no link to the municipal infrastructure. - Not upgrading the system now and implementing the riverbank stabilisation will lead to more severe infrastructure failure, requirement more extensive repairs in the future and potential collapse of an essential pump station which will result in a total failure in the sewer network and serious health risk.	
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.
No other alternatives exist – the application is required urgently in order to AVOID the ongoing health and environmental risks associated with the failing sewage network. The implementation of the preferred alternative maximises all positive impacts and has been assessed and supported by the specialists.	
1.8.	Provide a concluding statement indicating the preferred alternatives, including the preferred location of the activity.
The preferred alternative entails the upgrade of the Municipal sewage infrastructure servicing the Kwanokuthula residential area and restores a system that will not result in ongoing pollution to the surrounding area. Bulk connection to future development areas in Kwanokuthula will be provided that will not overload the new system. The implementation of erosion control along the riverbank adjacent to PS1 will ensure that any future erosion and pollution risk is avoided. The engineering design has taken the required pipe sizes and location into account in order to rectify the current pollution threats that are experienced. The proposal addresses the existing failures and provides long-term positive socio-economic and environmental impacts.	

2. “No-Go” areas

Explain what “no-go” area(s) have been identified during identification of the alternatives and provide the co-ordinates of the “no-go” area(s).
All areas outside of the working areas required for the installation of the services will be regarded as “no-go” areas

- Pipelines and associated infrastructure upgrade and new installations – 6m working area within the municipal services servitudes provides sufficient working space for contractors to install the pipelines, manholes and any linkages to the existing pipelines. Where additional working space is required, this will be addressed through site specific method statements in the EMPr.
- Working between and around existing dwellings (permanent and temporary structures) may require detailed planning with the occupants of the property in order to access the pipelines (in some cases structures have been constructed over the existing sewage pipelines).
- PS 1 expanding – working area in new defined yard
- Riverbank stabilisation – protection measures footprint with a 1-2m working area allowed and special focus of the protection of the riparian system will be in place (see EMPr).
- Working adjacent to the thicket and forest areas will require special consideration by the contractor to not affect the forest environment. Forest areas are regarded as No-Go areas.
- Water course crossings will require special care to prevent erosion and pollution during working (see EMPr).

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.

Seven rating scales will be considered when assessing potential impacts. These include:

- extent;
- duration;
- intensity;
- status of impact;
- probability;
- degree of confidence; and
- significance.

In assigning significance ratings to potential impacts before and after mitigation the following approach presented below is to be adhered to:

1. The core criteria for determining significance ratings are “extent”, “duration” and “intensity”. The preliminary significance ratings for combinations of these three criteria are given.
2. The status of an impact is used to describe whether the impact will have a negative, positive or neutral effect on the surrounding environment. An impact may therefore be negative, positive (or referred to as a benefit) or neutral.
3. Describe the impact in terms of the probability of the impact occurring and the degree of confidence in the impact predictions, based on the availability of information and knowledge.
4. Additional criteria to be considered, which could “increase” the significance rating if deemed justified, with motivation, are the following:
 - Permanent / irreversible impacts (as distinct from long-term, reversible impacts);
 - Potentially substantial cumulative effects; and
 - High level of risk or uncertainty, with potentially substantial negative consequences.
5. Additional criteria to be considered, which could “decrease” the significance rating if justified, with motivation, is the following:
 - Improbable impact, where confidence level in prediction is high.
6. When assigning significance ratings to impacts after mitigation:
 - First, consider probable changes in intensity, extent and duration of the impact after mitigation, assuming effective implementation of mitigation measures, leading to a revised significance rating; and
 - Then moderate the significance rating after taking into account the likelihood of proposed mitigation measures being effectively implemented. Consider:
 - Any potentially significant risks or uncertainties associated with the effectiveness of mitigation measures;
 - The technical and financial ability of the proponent to implement the measure; and
 - The commitment of the proponent to implementing the measure, or guarantee over time that the measures would be implemented.

7. The cumulative impacts of a project should also be considered. "Cumulative impacts" refer to the impact of an activity that may become significant when added to the existing activities currently taking place within the surrounding environment.
8. Where applicable, assess the degree to which an impact may cause irreplaceable loss of a resource. A resource assists in the functioning of human or natural systems, i.e. specific vegetation, minerals, water, agricultural land, etc.

A. Significance

The significance ratings are based on largely objective criteria and inform decision-making at a project level as opposed to a local community level. In some instances, therefore, whilst the significance rating of potential impacts might be "low" or "very low", the importance of these impacts to local communities or individuals might be extremely high. The importance which I&APs attach to impacts must be taken into consideration, and recommendations should be made as to ways of avoiding or minimising these negative impacts through project design, selection of appropriate alternatives and / or management.

The relationship between the significance ratings after mitigation and decision-making can be broadly defined as follows (see overleaf): substance

Significance rating	Effect on decision-making
VERY LOW; LOW	Will not have an influence on the decision to proceed with the proposed project, provided that recommended measures to mitigate negative impacts are implemented.
MEDIUM	Should influence the decision to proceed with the proposed project, provided that recommended measures to mitigate negative impacts are implemented.
HIGH; VERY HIGH	Would strongly influence the decision to proceed with the proposed project.

B. Extent

"Extent" defines the physical extent or spatial scale of the impact.

Rating	Description
LOCAL	Extending only as far as the activity, limited to the site and its immediate surroundings. Specialist studies to specify extent.
REGIONAL	Southern Cape. Specialist studies to specify extent.
NATIONAL	South Africa
INTERNATIONAL	

C. Duration

"Duration" gives an indication of how long the impact would occur.

Rating	Description
SHORT TERM	0 - 5 years
MEDIUM TERM	5 - 15 years
LONG TERM	Where the impact will cease after the operational life of the activity, either because of natural processes or by human intervention.
PERMANENT	Where mitigation either by natural processes or by human intervention will not occur in such a way or in such time span that the impact can be considered transient.

D. Intensity

"Intensity" establishes whether the impact would be destructive or benign.

Rating	Description
ZERO TO VERY LOW	Where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected.
LOW	Where the impact affects the environment in such a way that natural, cultural and social functions and processes continue, albeit in a slightly modified way.
MEDIUM	Where the affected environment is altered, but natural, cultural and social functions and processes continue, albeit in a modified way.
HIGH	Where natural, cultural and social functions or processes are altered to the extent that it will temporarily or permanently cease.

E. Loss of resources

"Loss of resource" refers to the degree to which a resource is permanently affected by the activity, i.e. the degree to which a resource is irreplaceable.

Rating	Description
LOW	Where the activity results in a loss of a particular resource but where the natural, cultural and social functions and processes are not affected.
MEDIUM	Where the loss of a resource occurs, but natural, cultural and social functions and processes continue, albeit in a modified way.
HIGH	Where the activity results in an irreplaceable loss of a resource.

F. Status of impact

The status of an impact is used to describe whether the impact would have a negative, positive or zero effect on the affected environment. An impact may therefore be negative, positive (or referred to as a benefit) or neutral.

G. Probability

"Probability" describes the likelihood of the impact occurring.

Rating	Description
IMPROBABLE	Where the possibility of the impact to materialise is very low either because of design or historic experience.
PROBABLE	Where there is a distinct possibility that the impact will occur.
HIGHLY PROBABLE	Where it is most likely that the impact will occur.
DEFINITE	Where the impact will occur regardless of any prevention measures.

H. Degree of confidence

This indicates the degree of confidence in the impact predictions, based on the availability of information and knowledge.

Rating	Description
HIGH	Greater than 70% sure of impact prediction.
MEDIUM	Between 35% and 70% sure of impact prediction.
LOW	Less than 35% sure of impact prediction.

I. Significance

"Significance" attempts to evaluate the importance of a particular impact, and in doing so incorporates the above three scales (i.e. extent, duration and intensity).

Rating	Description
VERY HIGH	Impacts could be EITHER: of high intensity at a regional level and endure in the long term; OR of high intensity at a national level in the medium term; OR of medium intensity at a national level in the long term.
HIGH	Impacts could be EITHER: of high intensity at a regional level and endure in the medium term; OR of high intensity at a national level in the short term; OR of medium intensity at a national level in the medium term; OR of low intensity at a national level in the long term; OR of high intensity at a local level in the long term; OR of medium intensity at a regional level in the long term.
MEDIUM	Impacts could be EITHER: of high intensity at a local level and endure in the medium term; OR of medium intensity at a regional level in the medium term; OR of high intensity at a regional level in the short term; OR of medium intensity at a national level in the short term; OR of medium intensity at a local level in the long term; OR of low intensity at a national level in the medium term; OR of low intensity at a regional level in the long term.
LOW	Impacts could be EITHER of low intensity at a regional level and endure in the medium term; OR of low intensity at a national level in the short term; OR of high intensity at a local level and endure in the short term; OR of medium intensity at a regional level in the short term; OR of low intensity at a local level in the long term; OR of medium intensity at a local level and endure in the medium term.
VERY LOW	Impacts could be EITHER of low intensity at a local level and endure in the medium term; OR of low intensity at a regional level and endure in the short term;

	OR of low to medium intensity at a local level and endure in the short term.
INSIGNIFICANT	Impacts with: Zero to very low intensity with any combination of extent and duration.
UNKNOWN	In certain cases it may not be possible to determine the significance of an impact.

J. Degree to which impact can be mitigated

This indicates the degree to which an impact can be reduced / enhanced.

Rating	Description
NONE	No change in impact after mitigation.
VERY LOW	Where the significance rating stays the same, but where mitigation will reduce the intensity of the impact.
LOW	Where the significance rating drops by one level, after mitigation.
MEDIUM	Where the significance rating drops by two to three levels, after mitigation.
HIGH	Where the significance rating drops by more than three levels, after mitigation.

K. Reversibility of an impact

This refers to the degree to which an impact can be reversed.

Rating	Description
IRREVERSIBLE	Where the impact is permanent.
PARTIALLY REVERSIBLE	Where the impact can be partially reversed.
FULLY REVERSIBLE	Where the impact can be completely reversed.

Determination and ranking of potential impacts is based on years of experience working on similar developments across the same area as well as applying sound environmental knowledge informed by available information on site, vegetation, development type, current condition and other relevant factors that could/ will influence such a development.

The methodology used by the specialists is provided in their respective reports – refer to Appendix G.

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

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

Alternative:	Preferred alternative:	No-Go alternative:
PLANNING, DESIGN AND DEVELOPMENT PHASE Including maintenance phases in accordance with the MMP		
Potential impact and risk:	Impact of the construction phase on terrestrial biodiversity- plant and animal species as assessed by the specialist, Dr D Hoare	
Ecological impact	Negative – temporary disturbance Positive – long term – improvement of conditions	Negative, no improvement of the current failing system which results in ongoing long-term habitat degradation
Nature of impact:	Local and short term	Local and long term
Extent and duration of impact:	Local and short term	Local and long term
Consequence of impact or risk:	As per specialist: "The proposal is to construct a sewer pipeline along the indicated routes. The footprint of the proposed development is within transformed and secondary habitats. At the forest edge the pipeline is in the corridor of an existing pipeline, therefore no new habitat will be affected. The secondary vegetation in the corridor does not have the attributes of the original natural ecosystem and no impact on CBAs or ESAs will occur that cannot be restored. Any disturbance due to pipeline construction can easily be rehabilitated to its current state and no long-term effect will remain. There are no terrestrial plant or animal SCC that are likely to occur on site. This is because there is no remaining natural habitat in the proposed alignment. There are two animal SCC that are likely to occur in the general study area. These are Crowned Eagle (<i>Stephanoaetus coronatus</i>) and Sensitive Species 8. In both cases, the project has no direct impact on suitable habitat (forest) and no long-lasting impacts on habitat for these species will occur. The current status quo of the study area for these species will not be altered by the construction of a sewer pipeline" (Hoare, 2026).	Continued habitat degradation due to sewage leaks, pollution and invasive species growth
Probability of occurrence:	Definite but easily mitigated	High
Degree to which the impact may cause irreplaceable loss of resources:	Low to none as the sites are already degraded and transformed	Medium,, habitat degradation remains

Degree to which the impact can be reversed:	Reversible (high)	Partially (medium to low) as degradation will accumulate over time
Indirect impacts:	Temporary disturbance to habitat, but confined to working space	Long term biodiversity loss and reduced habitat quality
Cumulative impact prior to mitigation:	Medium	Medium high
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium	Medium to High as it is a continued negative impact
Degree to which the impact can be avoided:	Medium – need implementation of EMPr/MMP	Low
Degree to which the impact can be managed:	High	Low
Degree to which the impact can be mitigated:	High	Low
Proposed mitigation:	As per specialist <i>"On condition all construction impacts are contained within the existing pipeline corridor, no impacts on forests are expected to occur. This corridor is currently more than 5 m wide, and it would therefore be easy to limit heavy machinery to within this area.</i> <i>All construction-related impacts are to be kept within the existing servitude. If this is not possible then new excavation must be on the side of the servitude closest to the existing urban area so that they do not affect any natural forest areas.</i> <i>Standard rehabilitation must be undertaken to restore vegetation cover after construction activities are completed.</i> <i>Employ construction best practices to minimise soil disturbance, runoff, and vegetation clearing.</i> <i>Develop and implement Alien Invasive Species Management Plans pre- and post-construction.</i> <i>Plan and monitor phased ecological restoration of disturbed areas, including native species replanting and erosion control" (Hoare, 2026).</i> Implementation and compliance with EMPr/MMP that incorporates above mitigation measures	Non feasible
Residual impacts:	Low	N/A
Cumulative impact post mitigation:	Low	N/A

Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low	N/A – no mitigation will improve the biodiversity other than implementing the preferred alternative
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Potential impact and risk:	Increase nuisance impacts during construction and maintenance	
Nuisance impacts (noise dust traffic)		
Nature of impact:	Temporary negative to neutral – constant maintenance in order to fix failed networks is already resulting in these disturbances	Negative as there will be ongoing failures and ongoing construction works in order to site-specific fix the leaks etc
Extent and duration of impact:	Local and short term	Local and long term
Consequence of impact or risk:	Nuisance impacts on community where work is busy – potential for dust, noise and traffic disruptions	Ongoing odour, sewage spills, reduces health within the community
Probability of occurrence:	Definite	
Degree to which the impact may cause irreplaceable loss of resources:	None	Low
Degree to which the impact can be reversed:	Fully reversible	Only reversible when the preferred is implemented
Indirect impacts:	Short term community disturbance,	Health and social impacts
Cumulative impact prior to mitigation:	Low	Medium
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low	Medium
Degree to which the impact can be avoided:	Medium, although already experienced by the community	Low
Degree to which the impact can be managed:	High	Low
Degree to which the impact can be mitigated:	High	Low
Proposed mitigation:	Implementation of the EMPr/MMP which includes mitigation measures such as dust suppression measures, recommended working houses, traffic management etc.	N/A
Residual impacts:	Very low	N/A
Cumulative impact post mitigation:	Very low	N/A
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Very low	N/A, no mitigation can be implemented to improve the impact other than implementing the preferred

Potential impact and risk:	Improvement of the sewage network	
Socio-economic impacts		
Nature of impact:	Positive	Ongoing Negative
Extent and duration of impact:	Local and long-term	Local and long term (potential regional negative impact)

Consequence of impact or risk:	Improved sanitation Reduces health risks Sewage connection provision for future developments	No improvement to the network and there will be continued failures Ongoing health risk
Probability of occurrence:	Definite	
Degree to which the impact may cause irreplaceable loss of resources:	None	Medium
Degree to which the impact can be reversed:	Positive impact, no reversibility required	Very low as the negative impact remain
Indirect impacts:	Improved well being Economic growth	Economic loss Declined community health
Cumulative impact prior to mitigation:	High positive	High negative
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	High POSITIVE	High NEGATIVE
Degree to which the impact can be avoided:	Not required to avoid	Low
Degree to which the impact can be managed:	High	Low
Degree to which the impact can be mitigated:	Not required to be mitigated	Low
Proposed mitigation:	None as this is a positive impact that do not need mitigation	None can be implemented to improve the impact
Residual impacts:	Positive improvement within the community	N/A
Cumulative impact post mitigation:	High positive impact	N/A
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	High POSITIVE	N/A

OPERATIONAL PHASE		
Potential impact and risk: Socio-economic, health risk and nuisance impact	Risks of sewage leaks and system failures	
Nature of impact:	Negative, however due to the improved system there is a low risk of this occurring Positive as there is an overall improvement together with a MMP to ensure sound long-term operational maintenance.	Negative – ongoing health and environmental risks
Extent and duration of impact:	Local and long term	Local and long term (potential for regional negative impact)
Consequence of impact or risk:	Occasional leaks potentially due to blockage, but reduced due to the improved system and operational maintenance	Frequent leaks, system failures, pollution
Probability of occurrence:	Low to medium	High
Degree to which the impact may cause irreplaceable loss of resources:	Low	High
Degree to which the impact can be reversed:	Reversible	Due to the significance of the continued negative impact it will be difficult to reverse unless the proposed improvements are implemented as per the application.

Indirect impacts:	Localised pollution which can easily be fixed and rehabilitated	Major water pollution, ecosystem degradation Continued socio-economic impacts such as health risk and inability to link new development areas to the sewage infrastructure network.
Cumulative impact prior to mitigation:	Medium	High
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Medium	High NEGATIVE
Degree to which the impact can be avoided:	Medium	Low
Degree to which the impact can be managed:	High	Low
Degree to which the impact can be mitigated:	High	Low
Proposed mitigation:	Maintenance plan, monitoring, rapid response to leaks (implementation of MMP during this phase)	None
Residual impacts:	Low	N/A
Cumulative impact post mitigation:	Low	N/A
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	Low	N/A
DECOMMISSIONING AND CLOSURE PHASE		
Highly unlikely that Municipal sewage infrastructure will be decommissioned. Therefore, this phase was not assessed.		

AQUATIC IMPACTS (UPSTREAM CONSULTING, 2026) DURING CONSTRUCTION AND OPERATIONAL PHASES:

See appendix G for full aquatic report - Aquatic ecosystems are particularly vulnerable to human activities, and these activities can often result in irreversible damage or longer term, cumulative changes. The significance of an impact to the environment or ecosystem can only be assessed in terms of the change to ecosystem services, resources and biodiversity value associated with that system or component being assessed. The approach adopted is to identify and predict all potential direct and indirect impacts resulting from an activity from planning to rehabilitation. Thereafter, the impact significance is determined.

The direct and indirect impacts associated with the project are grouped into four encapsulating impact categories where associated or interlinked impacts are grouped. These are then linked to the key drivers and receptors as defined by DWS (Appendix 1) and discussed within the sections that follow. Therefore, the potential impacts assessed, including cumulative impacts, were:

- Impact 1: Disturbance to aquatic habitat and biota
- Impact 2: Increased surface water runoff and stormwater flow patterns on form and function during the construction and into the operational phase, i.e. changes to the hydrological regime
- Impact 3: Changes to hydrological regime that could also lead to sedimentation and erosion, which could also occur in the operational phase
- Impact 4: Potential impact on localised surface water quality

Impacts can be managed to acceptable levels with the implementation of the buffer zones and mitigation measures.

For the purposes of this project the preferred alternative and a No-Go alternative were assessed. As aforementioned the preferred alternative will consist of the upgrading and repair of the sewer pipelines within the existing footprint.

There are no new impacts associated with the No Go Alternative. However, without intervention, the assessed systems are likely to continue deteriorating in condition due to ongoing pollution, posing a risk to the remaining ecosystem services, they provide.

- DISTURBANCE TO AQUATIC HABITAT AND BIOTA

The disturbance or loss of aquatic vegetation and habitat refers to the direct physical destruction or disturbance of aquatic habitat caused by earthworks, vegetation clearing, and encroachment and colonisation of habitat by invasive alien plants. Mitigation, such as adhering to construction footprints and demarcating no-go zones during construction, can prevent any direct impacts to aquatic habitat. On-going management of these areas can prevent indirect impacts, otherwise, invasive alien plants will colonise any disturbed areas which are not rehabilitated and out-compete indigenous vegetation. The loss of habitat or biota has the potential to impact all ecosystem services. Without mitigation, the impact can result in further deterioration in freshwater ecosystem integrity, and a reduction in the supply of ecosystem services.

- HYDROLOGICAL CHANGES

The project will result in changes in the quantity, timing and distribution of water inputs and flows within the watercourses. Hardened/artificial infrastructure will alter the natural processes of rainwater infiltration and surface runoff, promoting increased volumes and velocities of storm water runoff, which can be detrimental to the rivers receiving concentrated flows from the area. According to the SANRAL (2006), urbanisation typically increases the runoff rate by 20 -50%, compared with natural conditions.

Stormwater management during construction and operation will be critical in ensuring that runoff characteristics mimic the natural scenario and do not lead to increased flood peaks and flow velocities (influencing flow regime and flow ecosystem drivers) which could lead to increased impacts on geomorphological health of the systems in the form of erosion and sedimentation risks that could potentially affect the downstream system. Adherence to the construction footprint and no-go zones recommended can significantly reduce the level of hydrological change in the watercourses.

- EROSION AND SEDIMENTATION

During construction, the project will require sections of vegetation within the aquatic ecosystems to be cleared resulting in soil disturbance and cover changes in those systems. Vegetation clearing and exposure of bare soils in and near aquatic habitat during construction will decrease the soil binding capacity and cohesion of the soils and thus increasing the risk of erosion and sedimentation into the systems. Ineffective site stormwater management, particularly in periods of high runoff, can lead to soil erosion from confined flows. Formation of rills and gullies from increased concentrated runoff. This increase in volume and velocity of runoff increases the particle carrying capacity of the water flowing over the surface. Where soil erosion problems and bank stability concerns initiated during the construction phase are not timeously and adequately addressed, these can persist into the operational phase of the development project and continue to have a negative impact on downstream water resources in the study area.

During the operational phase, the increase in hardened surface by the compaction of servitudes can result in further erosion/sedimentation in the watercourses downslope. Surface runoff and velocities will be increased. The project may also promote the establishment of disturbance-tolerant biota, including colonization by invasive alien species, weeds and pioneer plants within the remaining habitat. Although this impact is initiated during the construction phase it is likely to persist into the operational phase. Erosion must be controlled at which will limit how much the geomorphological health of the ecosystem will be impacted.

- WATER QUALITY

During construction there are several potential pollution inputs into the aquatic systems (such as hydrocarbons, raw sewage and raw cement). These pollutants alter the water quality parameters such as turbidity, nutrient levels, chemical oxygen demand and pH. These alternations impact the species composition of the systems, especially species sensitive to minor changes in these parameters. Hydrocarbons including petrol/diesel and oils/grease/lubricants associated with construction activities (machinery, maintenance, storage, handling) may potentially enter the nearby watercourse by means of surface runoff or through dumping by construction workers. Any changes to the water quality ecosystem driver will immediately impact habitat and biota receptors.

In the operational phase, stormwater runoff from developed surfaces may include nutrients, pollutants, raw sewage, and other domestic waste. The refurbishment of sewage infrastructure near watercourses always poses a long-term threat to the water quality and ecological health of aquatic ecosystems due to the relatively high likelihood that surcharge events will occur at some point in the future. A complete shift in the structure and composition of aquatic biotic communities is the result, as well as a general degradation in water resource quality that could have negative impacts to human users. Over the lifetime of the development, surcharge events and/or pipe leakages will likely occur and as a result some pollution because of sewage infrastructure is probable (but with the new proposed upgrades less likely than current infrastructure). Mitigation measures must be put in place to reduce the intensity of pollution events and ultimately reduce pollutant loads.

CUMULATIVE IMPACTS

Cumulative impacts on the environment can result from broader, long-term changes and not only as a result of a single activity. They are rather from the combined effects of many activities overtime. In relation to an activity, cumulative impact means "the past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity, that in itself may not be significant, but may be significant when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities" (NEMA EIA Reg GN R982 of 2014).

Watercourses are set apart from many other ecosystem types by the degree to which they integrate with and are influenced by the surrounding landscape, or catchment. The physical, chemical and biological characteristics of any watercourse are determined almost entirely by the nature of its catchment and the activities, human and natural, that take place in it (Davies and Day 1998). The watercourses in the area have all been modified to various degrees by anthropogenic activities and none are in pristine ecological health. Additionally, the upgrading of these pipelines is logical and required to improve current aquatic ecosystem health of the watercourses and Roodefontein Dam, so must be also viewed within a strategic context.

However, the construction phase will result in the loss of freshwater habitat which is providing refuge for biota and supplies regulatory ecological services which benefit society. Therefore, no further deterioration or loss of aquatic habitat should be allowed, beyond the maximum envisaged threshold of construction.

The cumulative impact of the project upon aquatic biodiversity is of medium significance but following mitigation it can be decreased to acceptable levels. Invasive plant removal and reduced volume of sewage leaks, and adherence to a construction footprint area will protect aquatic habitat from most future potential impacts.

Impact assessment:

The impact significance of the proposed project was determined for each potential impact, direct and indirect for each phase. Refer to impact Tables 10 to 13 below. The preferred alternative was assessed which involves the replacement, repair and upgrading of pipelines within minimised construction footprint, using existing servitudes and access roads. The no-go alternative assumes that the current status quo of maintenance continues. All four impacts were rated for both alternatives and assessed accordingly.

The impact of aquatic habitat loss was assessed and provided in Table 10. Both the Preferred alternative (without mitigation) and no-go alternatives scored medium impacts. The implementation of mitigation including a minimised construction footprint, enforcement of EMPr and a defined no-go areas will reduce the impact score of the preferred alternative to a **low impact**.

Table 10: Impact assessment summary for Impact 1 – Disturbance of aquatic habitat biota.

Impact Phase: Construction phase					
Nature of the impact: The disturbance or loss of aquatic vegetation and habitat refers to direct physical destruction or disturbance which can result in further deterioration in freshwater ecosystem integrity, and a reduction in the supply of ecosystem services.					
Description of Impact: Refurbishment of the pipelines within and near watercourses. Mitigation assumes a minimization of construction disturbance footprint and implementation of EMPr.					
No-Go Alternative Impact Status: Negative					
	E	D	R	M	P
Without Mitigation	Site	Medium term	Recoverable	Moderate	High probability
Score	1	3	3	3	4
Significance Calculation	Without Mitigation				
S=(E+D+R+M)*P	Medium (40)				
Preferred Alternative Impact Status: Negative					
	E	D	R	M	P
Without Mitigation	Local	Long term	Recoverable	Moderate	High probability
Score	2	4	3	3	4
With Mitigation	Site	Short term	Recoverable	Low	Low probability
Score	1	2	3	2	2
Significance Calculation	Without Mitigation			With Mitigation	
S=(E+D+R+M)*P	Medium Impact (52)			Low Impact (16)	

In terms of hydrological impacts, changes to hydrological patterns will result in concentration of stormwater, without any implementation of the EMPr and listed mitigation measures (Table 11). Both the Preferred alternative (without mitigation) and no-go alternatives scored medium impacts and with mitigation the preferred alternative scored low. The EMPr needs to ensure that there is dissipation of flow during and post construction phase, especially the restoration of lateral hydrological inputs into the various systems as well as implementation of SUDS where possible. The implementation of such systems will also benefit other aspects of the project.

Table 11: Impact assessment summary for Impact 2 – Changes to the hydrological regime.

Impact Phase: Construction and Operation					
Nature of the impact: Possible increase in surface water runoff/ patterns on form and function during the construction and into the operational phase, i.e. changes to the hydrological regime. The impact can result in further deterioration in freshwater ecosystem integrity, and a reduction in the supply of ecosystem services.					
Description of Impact: Any increase in hard surface areas, and changes to the microtopography of the site, will increase concentrated surface water runoff toward the watercourse. Poor stormwater management could result in localised changes to flows (volume) that would result in form and function changes within aquatic habitat.					
No-Go Alternative Impact Status: Negative					
	E	D	R	M	P
Without Mitigation	Local	Permanent	Recoverable	Low	High probability
Score	2	5	3	2	4
Significance Calculation	Without Mitigation				
S=(E+D+R+M)*P	Medium Impact (48)				
Preferred Alternative Impact Status: Negative					
	E	D	R	M	P
Without Mitigation	Local	Permanent	Recoverable	Moderate	Highly probability
Score	2	5	3	3	4
With Mitigation	Local	Permanent	Recoverable	Low	Low Probability
Score	2	5	3	2	2
Significance Calculation	Without Mitigation			With Mitigation	
S=(E+D+R+M)*P	Medium Impact (52)			Low Impact (24)	

The geomorphological impacts of erosion can be devastating to freshwater ecosystems and can also lead to several indirect impacts. The removal (especially excessive removal), of freshwater habitat (without mitigation) will result in erosion and sedimentation, which can impact downstream and upstream of the sites. Currently the no-go alternative has medium geomorphological impacts (Table 12), with some erosion evident in the various systems evident by the various geomorphological PES scores. Construction of the preferred alternative will have a high impact without any mitigation, but by implementing various mitigation measures the impact drops significantly to a Low Impact (Table 12). These mitigation measures are primarily the minimisation of construction footprint, enforcement of EMPr and a delineated no-go area, with monitoring and immediate stabilisation of any erosion gullies.

Table 12: Impact assessment summary for Impact 3 – Sedimentation and erosion.

Impact Phase: Construction and Operation					
Nature of the impact: Changes to hydrological regimes that could also lead to sedimentation and erosion, that could also occur in the operational phase. These impacts can result in the deterioration of aquatic ecosystem integrity and a reduction/loss of habitat for flora & fauna.					
Description of Impact: Construction near the freshwater ecosystems and concentrated stormwater flow paths and altered flow patterns causing increased erosion and sedimentation as the disturbed soils are carried by unmanaged surface runoff down slope and gully erosion at outlets. Mitigation assumes appropriate rehabilitation following construction and suitable construction method statements, especially where pipelines cross watercourses.					
No-Go Alternative Impact Status: Negative					
	E	D	R	M	P
Without Mitigation	Local	Permanent	Recoverable	High	Highly probability
Score	2	5	3	4	4
Significance Calculation	Without Mitigation				
S=(E+D+R+M)*P	Medium (56)				
Impact Status: Negative					
	E	D	R	M	P
Without Mitigation	Regional	Permanent	Irrecoverable	High	Highly probable
Score	3	5	5	4	4
With Mitigation	Local	Short term	Recoverable	Low	Low Probability
Score	2	2	3	2	2
Significance Calculation	Without Mitigation		With Mitigation		
S=(E+D+R+M)*P	High Impact (68)		Low Impact (18)		

Similar to geomorphological impacts the hydrological impacts of changes to surface water quality result in several additional indirect and direct impacts to the freshwater ecosystems. The No- Go Impact for this impact is high and applicable as the raw sewage will continue to pollute watercourses and deteriorate PES and ecosystem services (Table 13). The implementation of the preferred alternative reduces the probability of these impacts occurring, but when they do occur without mitigation there will be a medium impact on the freshwater ecosystems. These impacts are more

recoverable than the geomorphological impacts, but with mitigation the preferred alternative will have a low impact score. With mitigation the significance of the impact is much lower, which then ensures that the freshwater ecosystems will recover (improving PES scores), and ecosystem services to people and surrounding ecosystems will improve.

Table 13: Impact assessment summary for Impact 4 –Changes to surface water quality.

Impact Phase: Construction and Operation					
Nature of the impact: Potential impact on localised surface water quality					
Description of Impact: During all phases of the project there is potential for surface runoff to be contaminated and enter the watercourses, especially during flood events and blockages. This can result in possible deterioration in aquatic ecosystem integrity and species diversity.					
No-Go Alternative Impact Status: Negative					
	E	D	R	M	P
Without Mitigation	National	Permanent	Recoverable	High	High probability
Score	4	5	3	4	4
Significance Calculation	Without Mitigation				
S=(E+D+R+M)*P	High Impact (64)				
Preferred Alternative Impact Status: Negative					
	E	D	R	M	P
Without Mitigation	Local	Long Term	Recoverable	High	Low probability
Score	2	4	3	4	2
With Mitigation	Local	Short Term	Reversible	Moderate	Low probability
Score	2	2	1	3	1
Significance Calculation	Without Mitigation			With Mitigation	
S=(E+D+R+M)*P	Medium Impact (26)			Low Impact (8)	

Although the four wetland and two riparian systems are in relatively poor PES states (D – UCVB 1 and UCVB 2, C -Seep 2 Wetlands and C for Rip 1 and Rip 2 systems respectively), this is an indication of the pressure these systems are under from existing impacts and the development of Kwanokuthula. The implementation of the current No-Go alternative will result in the systems remaining under pressure of having a high negative cumulative impact (Table 14). The implementation of the preferred alternative will result in the additional loss of habitat outside a minimal construction footprint, will have a Medium cumulative impact. As previously mentioned, these freshwater ecosystems provide a wide range of critical ecosystem services to the surrounding community and ecosystems. Although these systems have already

been affected by past land use practices, they remain resilient to further loss. However, these systems are approaching a critical threshold, beyond which additional loss of habitat or impacts, could result in significantly greater cumulative impacts on the broader ecosystem. By implementing all mitigation measures the probability of a cumulative impact is reduced to a low cumulative impact.

Table 14: Cumulative impact assessment for aquatic biodiversity.

Cumulative Impact: Cumulative impacts on the aquatic resources of the area					
Description of Cumulative Impact: Increased urban development is resulting in local habitat loss and changing the hydrology and water quality of the catchment. Mitigation assumes the implementation of buffer zones, stormwater management plans, and best practice wastewater handling, however, until further assessment of final designs has been conducted, the potential cumulative impact remains significant.					
No-Go Alternative Impact Status: Negative					
	E	D	R	M	P
Without Mitigation	National	Permanent	Recoverable	High	High Probability
Score	4	5	3	4	4
Significance Calculation	Without Mitigation				
S=(E+D+R+M)*P	High Impact (64)				
Preferred Alternative Impact Status: Negative					
	E	D	R	M	P
Without Mitigation	Local	Permanent	Recoverable	High	Low Probability
Score	2	5	3	3	4
With Mitigation	Local	Permanent	Recoverable	Low	Low Probability
Score	2	5	3	2	2
Significance Calculation	Without Enhancement		With Enhancement		
S=(E+D+R+M)*P	Medium Impact (52)		Low Impact (24)		

It was determined that, after mitigation, the overall impacts associated with the preferred alternative are of Low negative significance to aquatic biodiversity. The No-Go Alternative will continue to deteriorate the PES of all systems and threaten the existence of remaining ecosystem services with a medium negative impact.

The most significant risks to aquatic biodiversity from the project are associated with future sewage leakages, causing additional geomorphological impacts, poor stormwater management, general refuse pollution and increased alien plant encroachment. These impacts must be prevented through the minimisation of construction footprint and implementation of the envisaged Environmental Management Programme (EMPr).

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.
Terrestrial biodiversity-, plant and animal species specialist, Dr D Hoare – refer to report attached to Appendix G:	
The impact assessment undertaken by the specialist, confirmed the following: <i>"The proposal is to construct a sewer pipeline along the indicated routes. The footprint of the proposed development is within transformed and secondary habitats. At the forest edge the pipeline is in the corridor of an existing pipeline, therefore no new habitat will be affected.</i> <i>The secondary vegetation in the corridor does not have the attributes of the original natural ecosystem and no impact on CBAs or ESAs will occur that cannot be restored. Any disturbance due to pipeline construction can easily be rehabilitated to its current state and no long-term effect will remain.</i> <i>There are no terrestrial plant or animal SCC that are likely to occur on site. This is because there is no remaining natural habitat in the proposed alignment. There are two animal SCC that are likely to occur in the general study area. These are Crowned Eagle (<i>Stephanoaetus coronatus</i>) and Sensitive Species 8. In both cases, the project has no direct impact on suitable habitat (forest) and no long-lasting impacts on habitat for these species will occur. The current status quo of the study area for these species will not be altered by the construction of a sewer pipeline.</i> <i>On condition all construction impacts are contained within the existing pipeline corridor, no impacts on forests are expected to occur. This corridor is currently more than 5 m wide, and it would therefore be easy to limit heavy machinery to within this area."</i> These findings highlight the necessity for the proposed upgrades in proximity to sensitive forest areas to remain within the existing servitude areas. Therefore, in accordance with this assessment and incorporated into the EMPr/MMP, a 6m working area will be allowed. As concluded by the specialist: PLANT SPECIES THEME: - The site was classified as having MEDIUM sensitivity with respect to the Terrestrial Plant Species Theme. - The site inspection and desktop research determined the sensitivity to be low—there are no natural habitats remaining in which any of the flagged SCC could occur. - The proposed development is unlikely to have any impacts on any Terrestrial Plant SCC. ANIMAL SPECIES THEME: - The site was classified as having HIGH sensitivity with respect to the Terrestrial Animal Species Theme. - The site inspection and desktop research determined the sensitivity to be MEDIUM (suspected habitat for two animal SCC, namely Crowned Eagle (<i>Stephanoaetus coronatus</i>) and Sensitive Species 8 within the adjacent forest area). Both species occur in forest and will not be directly affected by the proposed project. - The proposed development will have a very localised impact that will be easily rehabilitated after construction. The project is therefore unlikely to have any impacts on any Terrestrial Animal SCC. TERRESTRIAL BIODIVERSITY THEME: - The site consists of various transformed and secondary habitats, as well as forest that is outside the direct footprint of the proposed project. - The site was flagged as having VERY HIGH sensitivity with respect to the Terrestrial Biodiversity Theme. The features of concern for this project are various small patches of CBA1 and 2 and ESA1 and 2. - The site inspection and desktop research shows that all affected areas on site are previously disturbed and currently contain secondary vegetation, but which are legally defined as being in a natural state. The secondary vegetation does not have the characteristics of the original untransformed vegetation that would have occurred there. No intact areas of the CBAs/ESAs will therefore be affected. Any disturbance can be rehabilitated to the current state within relatively short time-frames. - The proposed development is unlikely to have any impacts on any Terrestrial Biodiversity features. The Site Ecological Importance (SEI) for the Plant Species Theme and Animal Species Theme and Terrestrial Biodiversity Theme is therefore LOW for the entire pipeline corridor area. Mitigation measures provided by the specialist, which have been incorporated into the MMP/EMPr (Appendix H): <i>It is therefore possible to construct the proposed sewer pipeline without affecting any natural areas, on the following conditions:</i> - All construction-related impacts are to be kept within the existing servitude. If this is not possible then new excavation must be on the side of the servitude closest to the existing urban area so that they do not affect any natural forest areas.	

- Standard rehabilitation must be undertaken to restore vegetation cover after construction activities are completed.
- Employ construction best practices to minimise soil disturbance, runoff, and vegetation clearing.
- Develop and implement Alien Invasive Species Management Plans pre- and post-construction.
- Plan and monitor phased ecological restoration of disturbed areas, including native species replanting and erosion control.

No biodiversity impacts are expected if these conditions are met. This project based on the implementation of these recommendations is supported." (Hoare, 2025)

Aquatic biodiversity specialist, Upstream Consulting – refer to report attached to Appendix G:

As concluded by the assessment:

"The aquatic habitats within 500m of the project footprint were identified and mapped on a desktop level using available data. Following this, a site assessment was conducted to confirm desktop findings, gather additional information, and define the boundaries of the aquatic habitat. The groundtruthed findings are largely in alignment with the information of the desktop databases.

Risk assessment determined that there are six impacted HGM units, three wetlands (UCVB 1 UCVB 2, Seep 2) and two riparian systems (Rip 1 and Rip 2). The sewer pipeline is existing but in extremely poor condition impacting all of these units. All units have poor PES scores; however, the remaining habitat still provides important ecosystem services. It was recommended that no further deterioration of the habitat must be allowed outside of the designated construction footprint.

Impact assessment determined that after mitigation, the preferred alternative will have a very low impact upon aquatic habitat. It is also the preferred alternative from an aquatic biodiversity perspective as the No-Go Alternative will continue to lead the degradation of PES and ecosystem services for the impacted freshwater ecosystems. Mitigation should focus on minimising construction footprint and reduction of impacts on the hydrological and geomorphological characteristics of the watercourse. A robust monitoring programme should be developed and audited annually by a SACNASP registered ecologist.

In conclusion, there are no fatal flaws associated with the proposed activities provided all the mitigation measures are strictly implemented and monitored. The proposed project requires water use authorisation in terms of Chapter 4 and Section 21 of the National Water Act No. 36 of 1998, prior to the commencement of activities."

The WULA is in process and the mitigation measures made by the specialist have been incorporated into the assessment, design and EMPr/MMP.

Mitigation measures

"The transformation of much of the landscape to urban land use has increased the value of the wetlands a refugia for species. This mitigation measures will ensure those important ecosystem services are protected:

- A construction method statement must be compiled and available on site. It must consider the construction footprint and include methods to avoid unnecessary disturbance and prevent material being washed into any of the freshwater ecosystems.
- The edges of the construction footprint relative to the aquatic habitat must be clearly staked out and demarcated prior to construction commencing.
- Removal of vegetation must be phased and only for the continuation of project phases. 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 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 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.
- Where required and vegetation has been cleared, it is recommended that cover components be reinstated appropriately. Only indigenous species are to be considered.
- An ECO must be appointed to oversee and conduct monitoring activities requiring specialist input or analysis. Refer to Draft Monitoring Plan in Appendix 3.

The No-Go Alternative was determined to have no new impacts upon aquatic biodiversity, which will result in the continual degradation in terms of PES and ecosystem services due to the sewage blockages and raw sewage spills. Therefore, the preferred alternative is the most suitable from an aquatic perspective. The implementation of these measures would improve the PES of the freshwater systems." (Fordham, 2025)

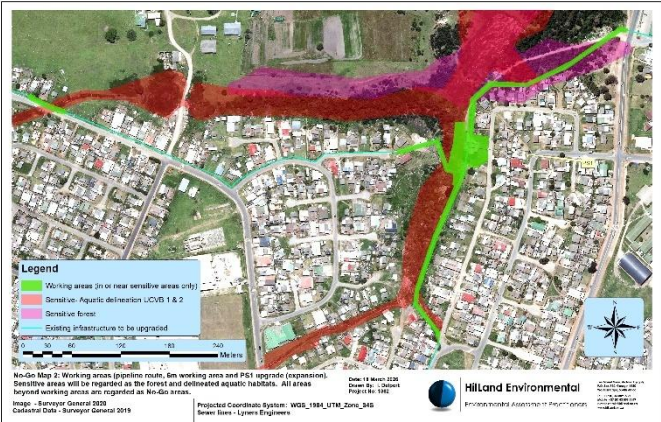
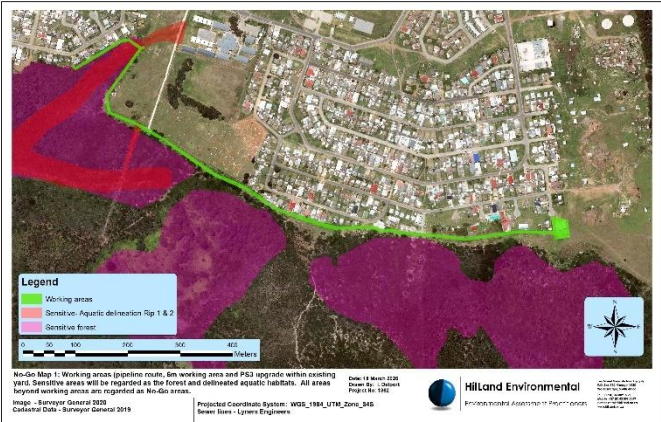
Agriculture specialist Gert Malan	
The specialist confirmed:	
"The agricultural impact of the proposed pipeline replacement / upgrade and installation within the urban area of Kwanokuthula is underground and will have no impact on the agricultural potential which has already been altered. The conclusion of this assessment is that the proposed development will not have an unacceptable negative impact on agricultural production since no agriculture is practised within the affected area. The sewer pipeline will be placed subsoil and is mostly in road reserves on adjacent to residential activities, no above ground loss of agriculture potential will be realised. The proposed development is therefore acceptable, and from an agricultural impact point of view. The conclusion of this assessment on the acceptability of proposed development and the recommendation for approval is not subject to any conditions. In completing this statement, no assumptions have been made and there are no uncertainties or gaps in knowledge or data that are relevant to it. No further agricultural assessments of any kind is required for this application." (Malan, 2025)	
No mitigation measures are therefore recommended for inclusion.	
2.	List the impact management measures that were identified by all Specialist that will be included in the EMPr
Management measures as listed above have been included in the MMP/EMPr	
3.	List the specialist investigations and the impact management measures that will not be implemented and provide an explanation as to why these measures will not be implemented.
All measures have been included in the EMPr/MMP that will need to be implemented and complied with	
4.	Explain how the proposed development will impact the surrounding communities.
The proposal will impact the surrounding community in a positive manner: - Providing a reliable sewage network - Eliminating health risks and nuisance impacts currently faced in the community as a result of the failures - Eliminating the potential contamination of potable water resources - Eliminating habitat degradation in the town - Allowing future expansion to connect to the bulk sewage network which will result in numerous socio-economic impacts (positive) on the town	
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.
As per the aquatic specialist assessment, Upstream Consulting, 2026:	
"Future threats to the watercourses of the study area include additional urban expansion and climate change. The expansion of the urban activities and infrastructure in the form of additional development has the potential to result in a further decrease water availability, and quality to the freshwater systems, while climate change is expected to alter the hydrological and geomorphological characteristics. The changes in rainfall patterns and flood intensity, interspersed with prolonged droughts, are expected to impact both surface and groundwater systems in the region. Engineering designs for the sewer lines specifically need to be designed to account for increase in intense flooding events which may initiate erosion and loss of infrastructure."	
6.	Explain whether there are any conflicting recommendations between the specialists. If so, explain how these have been addressed and resolved.
There were 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.
Findings and recommendations made by the specialists have all been incorporated into the proposal and into the EMPr/MMP for implementation.	
8.	Explain how the mitigation hierarchy has been applied to arrive at the best practicable environmental option.
- AVOID IMPACTS Sensitive areas have been completely avoided by limiting the working zone. New disturbances have been avoided by upgrading the existing network Infrastructure failure and additional future environmental degradation have been avoided by implementing expansion of PS 1 and implementing riverbank stabilisation adjacent to PS1 Failure of the new sewer network has been avoided by proposing replacement of all pipes with appropriate size pipes and that can handle the required flow rates rather than only fixing the overflows and broken areas - MINIMISE IMPACTS Minimise impacts on the habitat through limiting the working area Minimise all potential impacts through implementing the EMPr/MMP - RECTIFY Restore disturbed areas or ecological processes to avoid impacts on the aquatic habitat - REDUCE Implementation of EMPr/MMP which incorporates all mitigation measures provided by the specialists will reduce /mitigate all potential impacts. - OFF-SET Not deemed necessary	

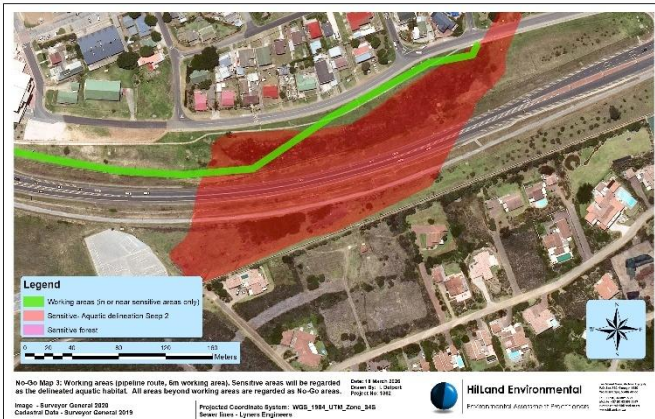
SECTION J: GENERAL

1. Environmental Impact Statement

1.1.	Provide a summary of the key findings of the EIA.
The proposal entails the upgrade of the sewer network that is old, undersized and failing, which results in various negative socio-economic and environmental impacts which needs to be addressed. T The proposed upgrade is essential to improve the health and service delivery in the town, supply bulk connections for future approved developments and prevent ongoing environmental degradation. The proposal has been assessed and supported by various specialists; - Terrestrial biodiversity assessment showed that the footprint areas are all within transformed and disturbed areas, no SCC have been identified and the impact associated with the proposal is of low significance. - Two sections of the upgrade are located in proximity to forest areas and the working zone associated with the proposal will be limited within these areas to avoid encroachment or habitat disturbance. - Aquatic assessment showed that the aquatic habitats are degraded due to the sewage leaks, however, they are still providing important ecosystem services. The proposal will improve the aquatic system, and the proposal is of a low significance (following implementation of the mitigation measures). A WULA process is being undertaken to legalise the network in terms of the NWA. - There will be no impact of agriculture or heritage theme All mitigation measures recommended by the specialists have been incorporated into the EMPr/MMP that will be implemented during the construction phase and long-term maintenance management of the sewer network.	
1.2.	Provide a map that that superimposes the preferred activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. (Attach map to this BAR as Appendix B2)

Refer to Appendix B2 for these maps.





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.

No property and site alternatives have been assessed.

Preferred alternative positive impacts

- Prevention of the current pollution of the environment through leakage and system failures.
- Minimisation of environmental disturbances by selecting sites where the existing infrastructure are located. Sensitive sites are being avoided.
- Improved sanitation services enhance public health and wellbeing of the local community.
- Makes use of established infrastructure corridors.

Preferred alternative negative impacts

- Temporary construction nuisances (noise, dust, visual etc) within the affected properties/sites
- Limited clearing of vegetation and work within aquatic features at certain sites for the upgrade of the sewer network and riverbank stabilisation (short term impact)
- Short term disturbance to private property during construction.

2. Recommendation of the Environmental Assessment Practitioner (“EAP”)

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

Environmental Aspect	Identified Impact	Impact Management Actions	Outcome (Post-Mitigation)
Aquatic Environment (Wetlands & Watercourses)	Disturbance of wetlands, sedimentation, and potential pollution during construction	Implement EMPr/MMP - Limit work to demarcated areas and existing servitudes - Install erosion and sediment control measures - No stockpiling within watercourses - Implement stormwater management - Use trenchless methods where feasible - Minimise footprint in sensitive areas - Rehabilitate banks to pre-construction condition	Temporary disturbance contained and rehabilitated; improved long-term water quality due to elimination of sewage leaks Riparian areas restored; no long-term degradation of riverbanks
Water Quality	Risk of contamination from construction activities (fuels, cement, waste)	- Proper storage of hazardous substances - Spill kits available on-site - Immediate clean-up of spills - Prohibit washing of equipment in watercourses	No significant deterioration in water quality; overall improvement in water quality due to upgraded sewer system
Terrestrial Biodiversity	Vegetation clearing and habitat disturbance	- Restrict clearing to development footprint-Avoid unnecessary disturbance - Rehabilitate disturbed areas with indigenous vegetation - Implement alien invasive plant control	Minimal habitat loss; disturbed areas successfully rehabilitated with indigenous vegetation
Soils & Erosion	Soil erosion and sedimentation during excavation and trenching	- Implement erosion control measures (e.g., silt fences, sandbags)- Stabilise exposed soils promptly-Backfill and compact trenches immediately after installation	Erosion risks minimised and controlled; no long-term soil degradation
Waste Management	Generation of construction waste and potential illegal dumping	- removal of illegally dumped waste, rubble and litter - Provide waste collection facilities- - Dispose of waste at licensed facilities - No on-site burning or burying of waste	Site remains clean; no pollution from waste; compliance with waste legislation
Nuisance impacts Noise, visual, dust, disturbance to the community	Dust generation during construction Noise from construction equipment and activities Temporary disturbance to local community during construction	- Wetting of exposed surfaces and haul roads - Restrict working hours to daytime - Maintain equipment in good condition - Notify nearby residents where necessary - Maintain access to properties - Communicate construction schedules - Implement health and safety measures	Dust suppressed to acceptable levels; no significant nuisance to surrounding areas Temporary and localised noise impacts with no long-term effects Short-term inconvenience offset by long-term benefits (improved sanitation, public health, and service delivery)

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.

Implementation of the EMPr/MMP is essential (short and long term) to ensure implementation of all specialist recommendations.

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.

It is essential for the proposal to be authorised as the proposed upgrade of the sewer network is necessary and justified in order to eliminate the existing pollution of the environment.

The existing system's failure is resulting in ongoing pollution of the aquatic and terrestrial environmental and negative socio-economic impacts (nuisance, health risks, not being able to provide a reliable service delivery in the town).

Maintenance of the network by fixing the leaks or infrastructure is simply not enough as the system is continually failing and blockages result in regular leaks into the surrounding built and natural environment.

An upgrade of the entire network is required to eliminate environmental degradation, accommodate future development areas, accommodate an increase in capacity needs.

The proposal has been assessed and supported by various specialists.

All potential impacts associated with the work will be mitigated through the implementation of the EMPr/MMP.

The assessed has not shown any fatal flaws and all impacts are considered manageable and reversible.

Conditions of the EA should include the full implementation of the EMPr/MMP which incorporates the mitigation measures recommended by the specialists.

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

Conclusion and recommendations have been made based on the following assumptions:

- That the information provided and gathered (including specialist findings) that was used to compile this report is correct;
- That the engineering method statement and recommended mitigation methods that have been specified in this report and the MMP will be complied with; &
- That stakeholders and interested and affected parties will submit a relevant comment during the public participation process that can positively influence the outcome of the NEMA process.

It is assumed that all the impacts have been identified and that the proposed preferred alternative will be accepted and approved.

Uncertainties and gaps in knowledge:

- Given the knowledge of the current failure of the sewer network that is taking place, impacts are known and currently occurring and it is not foreseen that there are any significant uncertainties or gaps in knowledge.

Aquatic biodiversity specialist, Upstream Consulting:

- Aquatic ecosystems vary both temporally and spatially. Once-off surveys such as this can miss certain ecological information due to seasonality, thus limiting accuracy and confidence.
- The locations of the proposed activities were provided by the client. Due to the level of detail provided, it is recommended that the final layout design and method statement be approved by the aquatic specialist prior to implementation.
- While disturbance and transformation of habitats can lead to shifts in the type and extent of aquatic ecosystems, it is important to note that the current extent and classification is reported on here.
- All soil/vegetation/terrain sampling points were recorded using a Garmin Global Positioning System (GPS) and captured using Geographical Information Systems (GIS) for further processing.
- Infield soil and vegetation sampling was only undertaken within a specific focal area around the proposed activities, while the remaining watercourses were delineated at a desktop level with limited accuracy.
- No detailed assessment of aquatic fauna/biota (e.g. fish, invertebrates, microphytes, etc.) was undertaken and not deemed necessary.
- The vegetation information provided is based on observation not formal vegetation plots. As such species documented in this report should be considered as a list of dominant and/or indicator wetland/riparian species.
- There were no seasonal limitations presented during assessment and the confidence level is high.
- The assessment of impacts and recommendation of mitigation measures was informed by the site-specific ecological concerns arising from the field survey and based on the assessor's working knowledge and experience with similar projects. The degree of confidence is considered high.

Terrestrial biodiversity-, plant and animal specialist, Dr D Hoare:

Assumptions, limitations, uncertainties regarding the assessment of the site are as follows:

- The assessment is based on the site visit as well as a desktop study of the available information. The time spent on site was adequate for understanding general vegetation patterns across the study area.
- Rare and threatened plant and animal species are, by their nature, usually very difficult to locate and can be easily missed. This is partially overcome by undertaking desktop research of possible species of concern. The Screening Tool output contains modelled distributions of all species that could occur on site, based on current knowledge of all SANBI databases.

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.
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Engineering programme:

Kwanokuthula Sewer Upgrade Estimated Program & Cash Flow

Programme	Stage
Apr-24	Revise Technical Report for added sewer lines and phasing (WSIG Funding Application)
May-24	Inception (All Phases)
Jun-24	Topographic Survey & Geotechnical Investigations
Total	
FY23/24 TOTAL (Excl. VAT)	
July / Aug 2024	Concept & Viability (All Phases)
Sept / Oct 2024	EIA specialist studies
Sept 2024 to June 2025	EIA & Coordination of Subconsultants
March 2024 to March 2025	Escalation of 4.7%/year for 1st outer year
Total	
FY24/25 TOTAL (Excl. VAT)	
Jan-26	Concept Design
Feb-26	Concept Design
Mar-26	Detail Design
Apr-26	Detail Design
May-26	Detail Design & Tender Documentation (Ph1)
Jun-26	Detail Design & Tender Documentation (Ph1)
Total	
FY25/26 TOTAL (Excl. VAT)	
July 2026 - September 2026	EIA & WULA Approvals
July 2026 - June 2027	Design Documentation & Coordination of Subconsultants (Phase 2)
July 2026 - June 2027	Phase 1 Construction & Contract Administration (CA, RE, ECO & OH&S)
Total	
FY26/27 TOTAL (Excl. VAT)	
July 2027 - June 2028	Design Documentation & Coordination of Subconsultants (Phases 3)
July 2027- June 2028	Phase 2A Construction & Contract Administration (CA, RE, ECO & OH&S)
Totals	
FY27/28 TOTAL (Excl. VAT)	
July 2027 - June 2028	Design Documentation & Coordination of Subconsultants (Phases 4)
July 2027- June 2028	Phase 2B Construction & Contract Administration (CA, RE, ECO & OH&S)
Totals	
FY28/29 TOTAL (Excl. VAT) and beyond	
July 2028 onward	Design Documentation & Coordination of Subconsultants (Phases 5)
July 2028 onward	Phase 3,4&5 Construction & Contract Administration (CA, RE, ECO & OH&S)

It is therefore recommended that the EA is valid for 5 years from the date of issue. the ongoing duty of care towards maintenance of this and all other infrastructure in the area should be handled through the adoption of the MMP as proposed.

3. Water

Since the Western Cape is a water scarce area explain what measures will be implemented to avoid the use of potable water during the development and operational phase and what measures will be implemented to reduce your water demand, save water and measures to reuse or recycle water.

N/A to the proposal

4. Waste

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

The EMP provides mitigation measures to implement during the construction phase. Such measures will be applicable to maintenance as well, but not the operational phase.

5. Energy Efficiency

8.1.	Explain what design measures have been taken to ensure that the development proposal will be energy efficient.
N/A to the proposal	

SECTION K: DECLARATIONS

DECLARATION OF THE APPLICANT

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

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

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

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

Signature of the Applicant:

Date:

Name of company (if applicable):

DECLARATION OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

I **...Cathy Avierinos.....**, EAP Registration number **...2019/1053.....** 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:

7 April 2026

Date:

Hilland Environmental (Pty) Ltd

Name of company (if applicable):

DECLARATION OF THE REVIEW EAP

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

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

Signature of the EAP:

Date:

Name of company (if applicable):

DECLARATION OF THE SPECIALIST

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

I ...**Dr D Hoare**....., as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.



Signature of the specialist:

7 April 2026

Date:

BioCensus (Pty) Ltd

Name of company (if applicable):

DECLARATION OF THE SPECIALIST

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

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

- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.



7 April 2026

Signature of the specialist:

Date:

Upstream Consulting

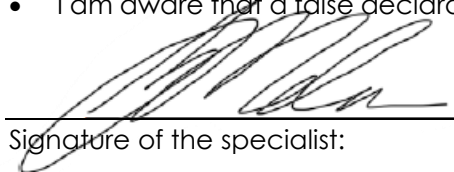
Name of company (if applicable):

DECLARATION OF THE SPECIALIST

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

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

- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.



Signature of the specialist:

7 April 2026

Date:

N/A

Name of company (if applicable):

DECLARATION OF THE REVIEW SPECIALIST

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

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

Signature of the EAP:

Date:

Name of company (if applicable):