



Hilland Environmental

Environmental Assessment Practitioners

SITE SENSITIVITY VERIFICATION REPORT (SSVR)

FOR

KWANOKUTHULA MAIN OUTFALL SEWER & PUMPING MAIN UPGRADE,
PLETTENBERG BAY

Submitted by	Hilland Environmental
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**SITE SENSITIVITY VERIFICATION REPORT (SSVR) FOR KWANOKUTHULA MAIN OUTFALL SEWER & PUMPING
MAIN UPGRADE, PLETTENBERG BAY**

Submitted to:

DEADP review and comment – submission with NOI
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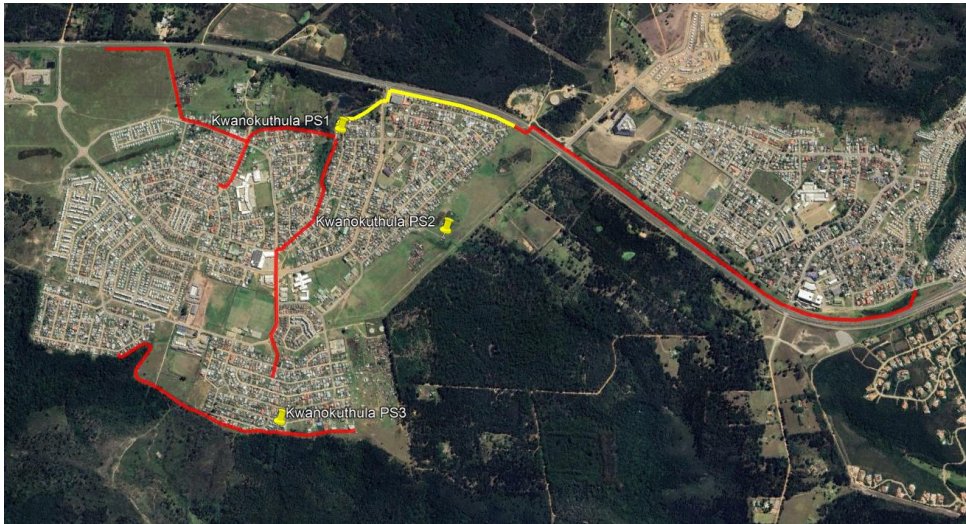
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1 INTRODUCTION AND DESCRIPTION OF THE AFFECTED ENVIRONMENT

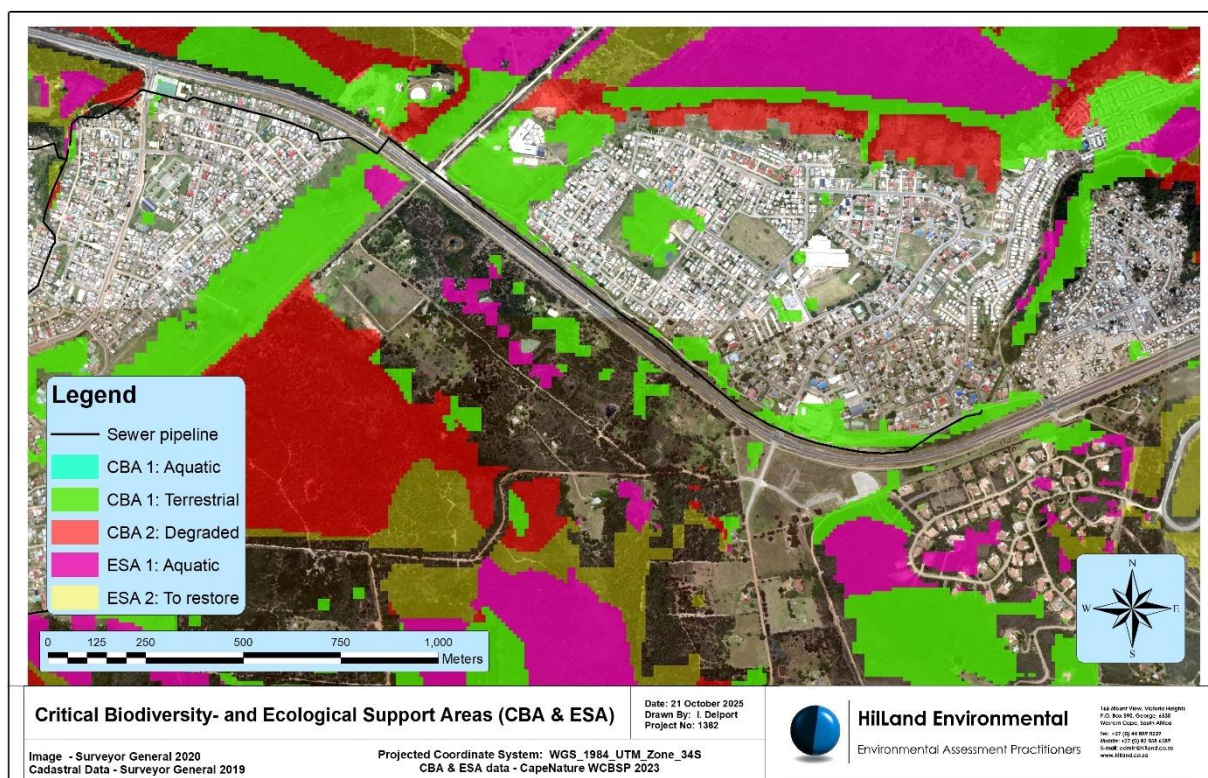
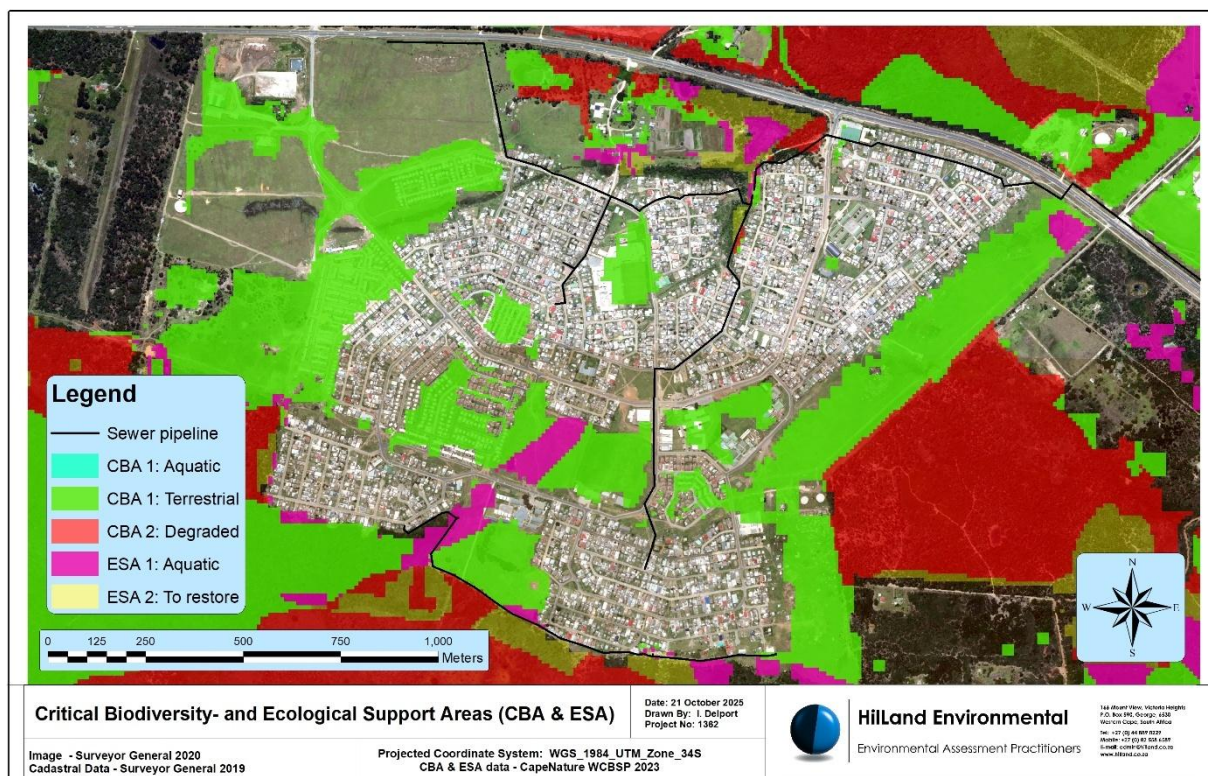
HillLand Environmental (Pty) Ltd., independent Environmental Assessment Practitioners (EAPs), have been appointed by the applicant, **Bitou Municipality**, to ensure compliance with the National Environmental Management Act (NEMA, No. 107 of 1998) and the Environmental Impact Assessment Regulations, 2014 (as amended).

The proposal entails repairs, maintenance and upgrade of the bulk sewer system servicing Kwanokuthula, Bitou Municipality. The area is predominantly characterized by middle-to-low-income households. The existing sewer infrastructure is currently under significant stress, struggling to accommodate the current volume of sewerage and posing a major constraint to future growth. This is particularly evident in upstream sewer lines that are at or nearing full capacity.

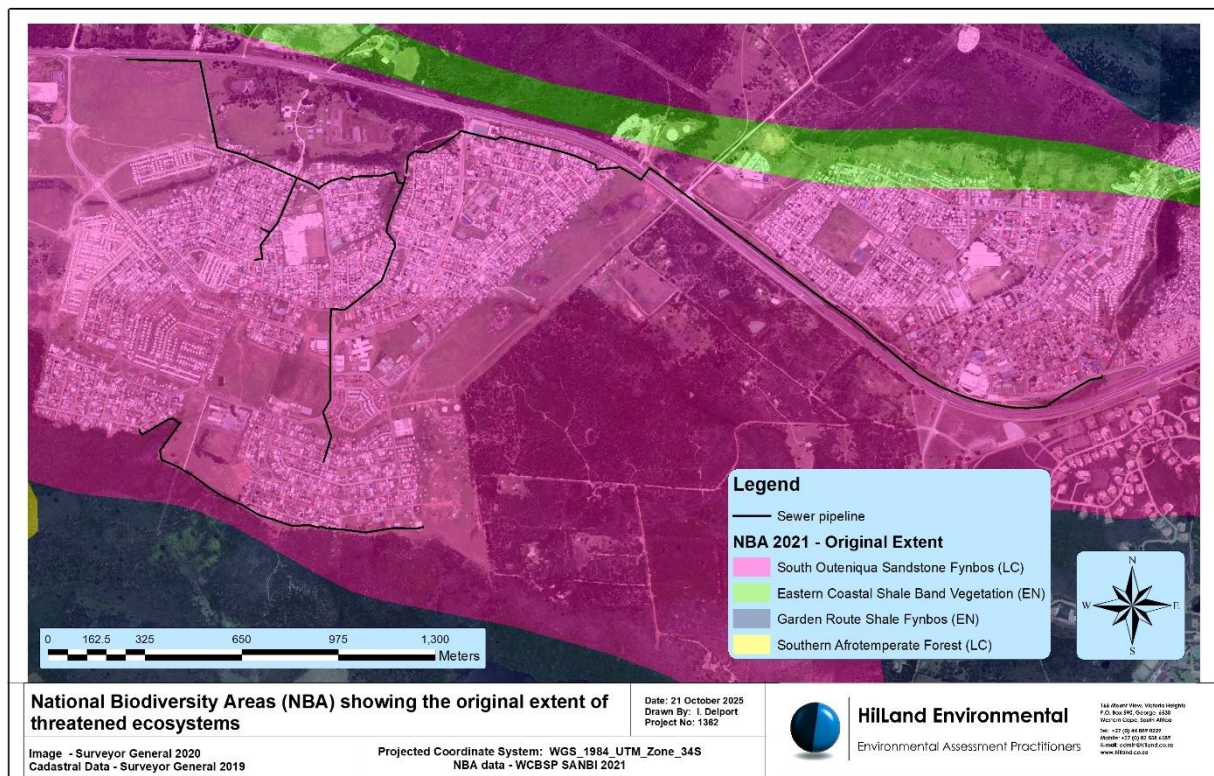


Aerial overview of the location (above) and the associated sewage pipeline routes (below).

As per the aquatic specialist, Upstream Consulting, "According to the Western Cape Biodiversity Spatial Plan (WCBSP) (CapeNature, 2023) the biodiversity priority areas mapped by the WCBSP relative to the study area are shown in Figure 7. The WCBSP identifies biodiversity priority areas, Critical Biodiversity Areas, Ecological Support Areas (ESAs) and Other Natural Areas (ONA), which, together with Protected Areas (PA), are important for the persistence of a viable representative sample of all ecosystem types and species, as well as the long-term ecological functioning of the landscape. The primary purpose of a map of CBAs and ESAs is to guide decision-making about where best to locate development. Only low-impact, biodiversity-sensitive land-uses are appropriate within CBA. It indicates that the drainage lines support Critical Biodiversity Area (CBA) 1 River, and CBA 1 Terrestrial, CBA 2 Terrestrial and Ecological Support Area 1 (ESA 1) and ESA 2 (degraded). Most of the sewer line, however, does not pass through any WCBSP layers, given its urban setting. This setting contributed to no rare or endangered aquatic biota being identified in the study area".



In accordance with the National Biodiversity Areas (NBA) showing the original extent of threatened ecosystems, the pipeline is located within Least Concern South Outeniqua Sandstone Fynbos.



"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" (Upstream, 2025).



As per terrestrial specialist - Biocensus

“An upgrade to the sewerage system in Kwanokuthula (Plettenberg Bay) has been proposed to address urgent issues associated with the existing network. A proposed infrastructure layout was provided (Figure 1), and this was assessed in the field to determine if any biodiversity sensitivities are affected.

The majority of the proposed upgrade is within existing urban areas that do not affect any natural vegetation. The possible exceptions are as follows:

1. Near to the entrance to Kwanokuthula the pipeline runs close to a valley system that is the upper reaches of the Diep River.
2. Along the southern side of Kwanokuthula the pipeline runs close to the edge of indigenous forest areas.

These possible conflict areas were assessed to determine the possible impact of the project. Examples of the observed landscape are shown in Figure 2 - 5.

The entire sections of pipeline along the southern side of Kwanokuthula, as well as in the Diep River valley are within existing sewer pipeline servitudes. There are existing pipelines along these alignments and the new pipeline will replace the existing pipeline. The servitudes are wide enough to provide space for excavation and placing of new pipelines without disturbing additional areas (see Figure 5). It is therefore possible to replace the existing pipeline without affecting any natural areas, on the following conditions:

1. All construction-related impacts are to be kept within the existing servitude. If this is not possible then new impacts must be on the side of the servitude closest to the existing urban area, i.e. so that they do not affect any natural forest areas.
2. Standard rehabilitation must be undertaken to restore vegetation cover after construction activities are completed.

No biodiversity impacts are expected if these conditions are met" (Biocensus 2025)



Figure 2: Eastern end of pipeline.



Figure 2: North-western end of pipeline.



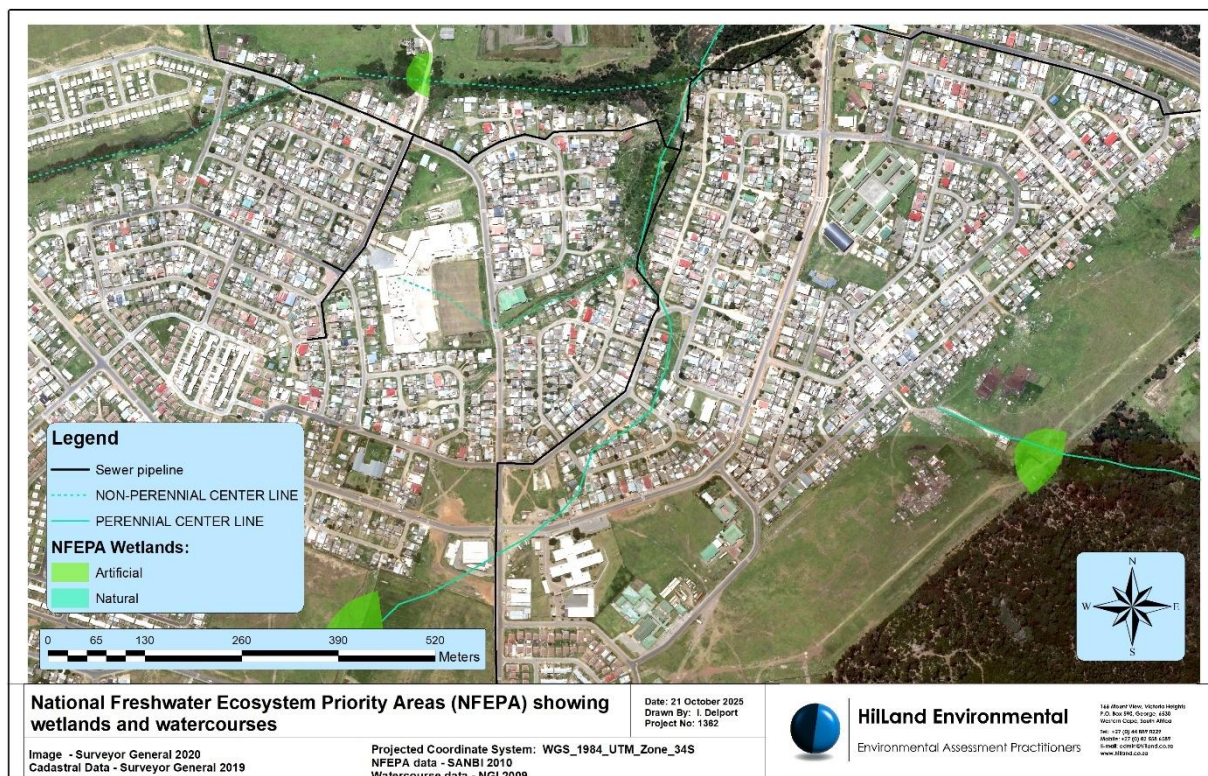
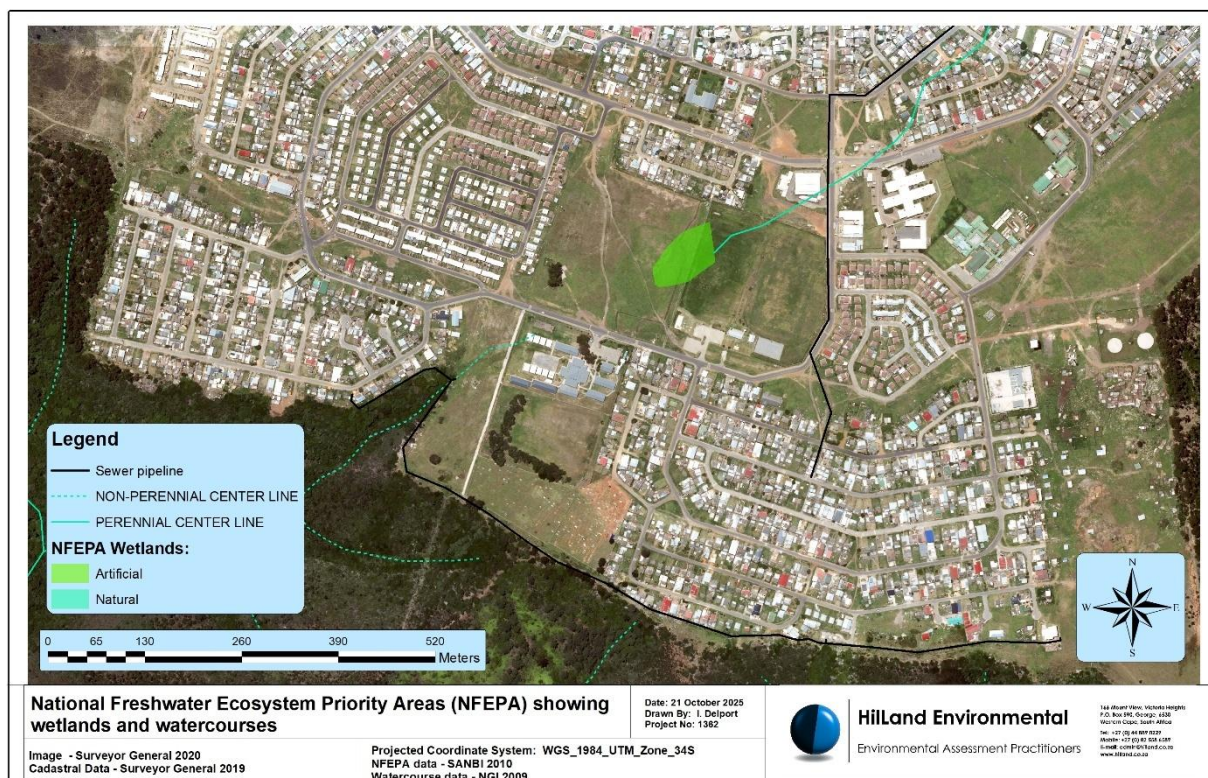
Figure 4: Typical forest edge along pipeline route.

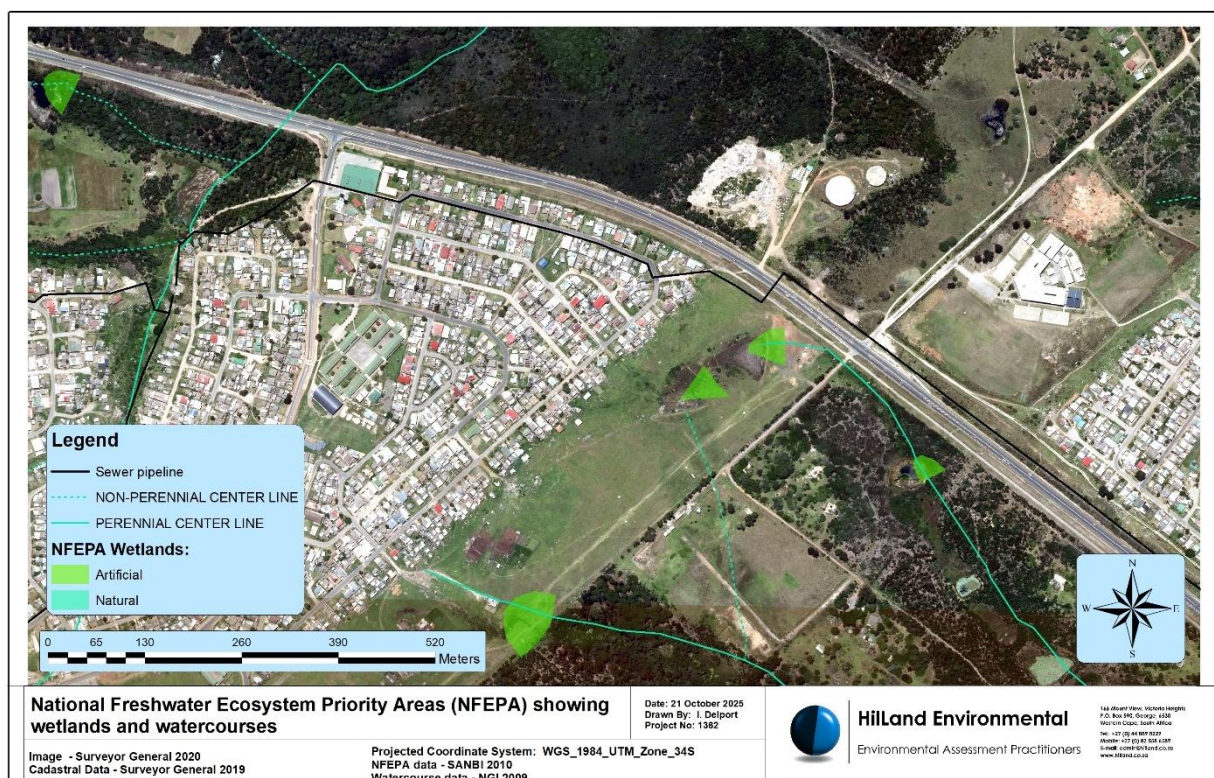
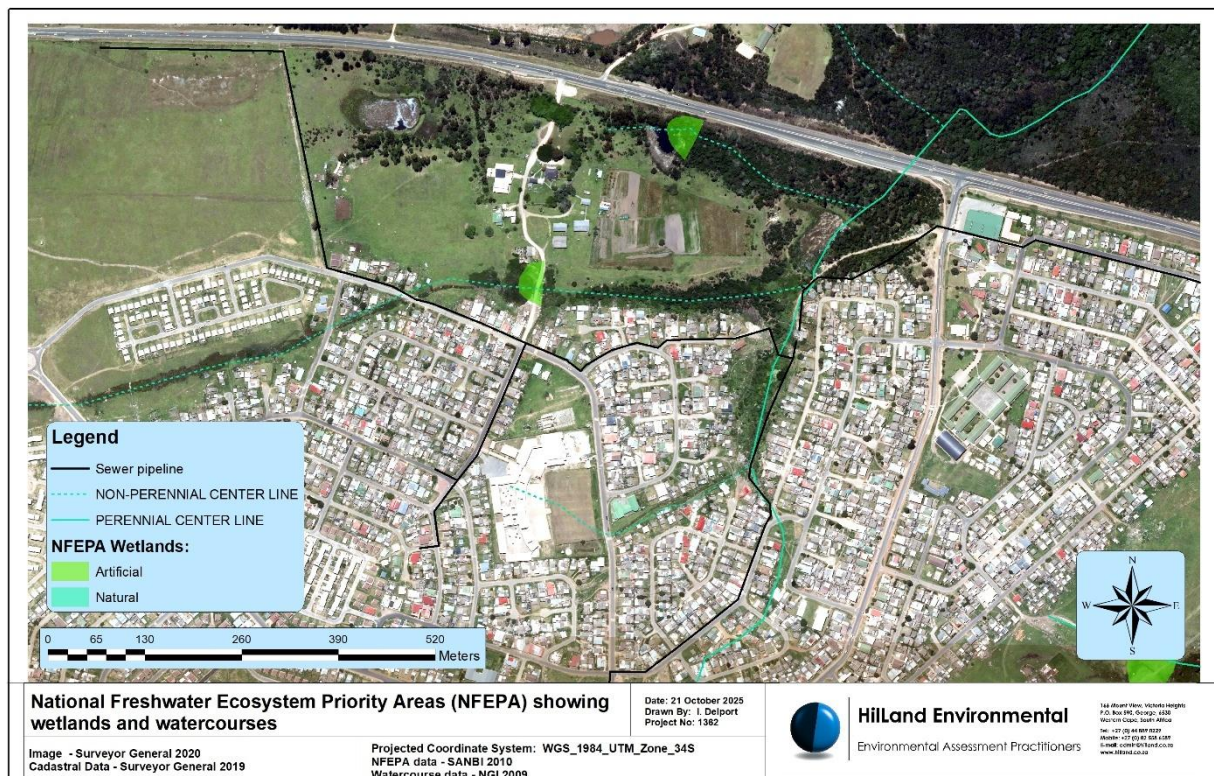


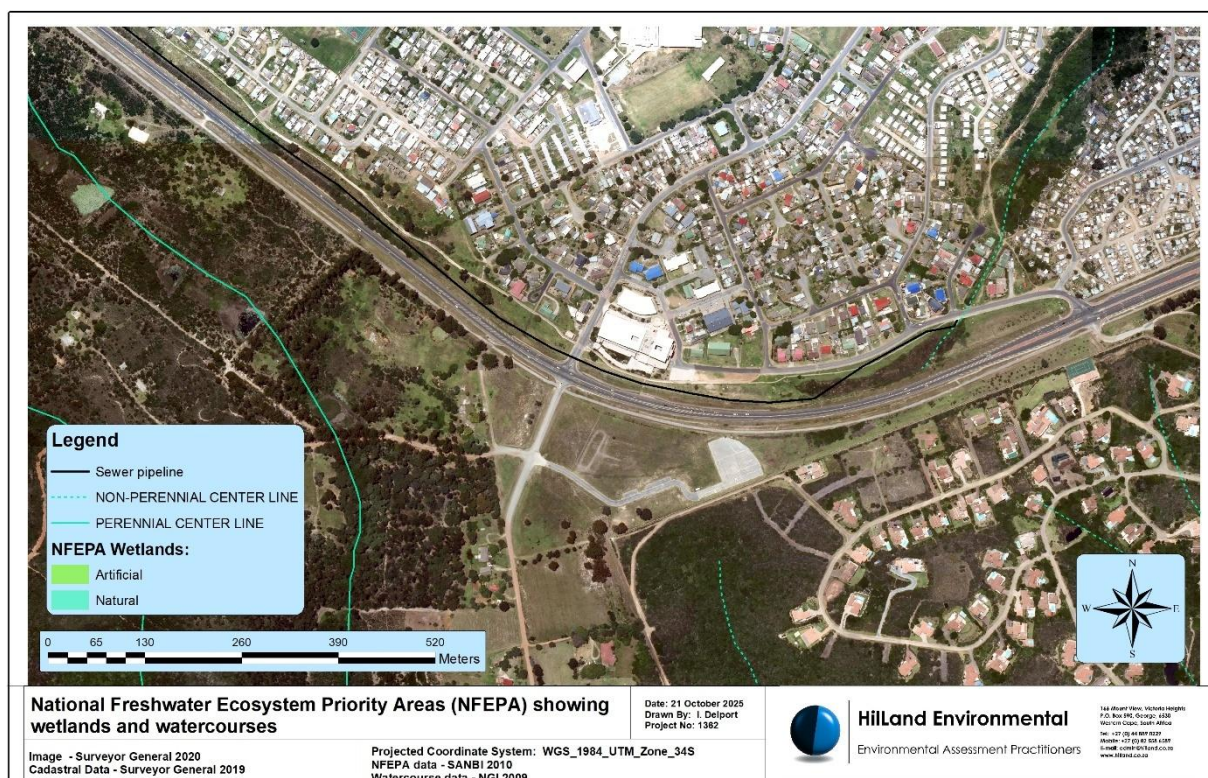
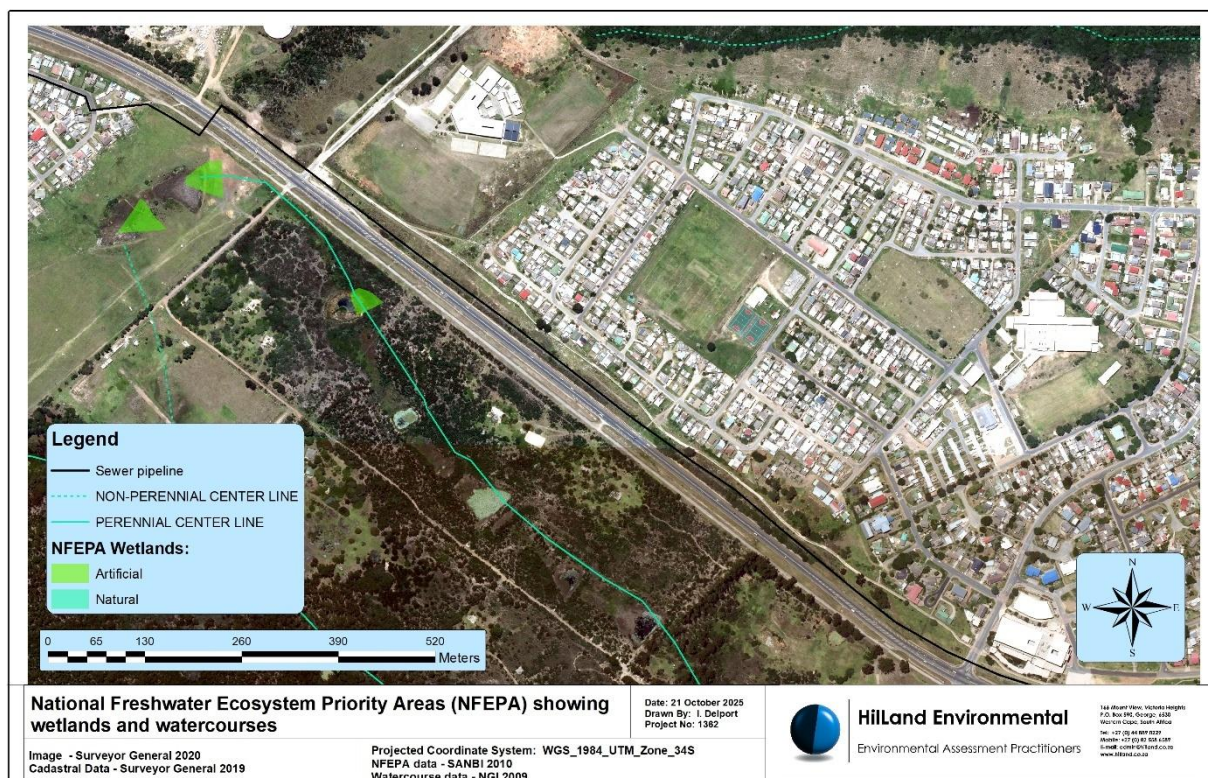
Figure 5: Existing pipeline servitude on southern side of Kwanokuthula.

Aquatic habitats:

Various perennial, non-perennial and wetland areas have been mapped within the area.







The following was confirmed by the specialist:

"Rip 1 and Rip 2- Unnamed non-perennial streams

These small systems are in the southwestern corner of the study area. These areas share many similarities in description and therefore were described together, but assessed independently.

Both systems are well vegetated, with several thicket species, as can be seen in detail in Plate 1. Large indigenous tree species observed in the systems include *Breonadia salicina* (matumli), *Ilex mitis* (Cape holly), *Trichilia dregeana* (forest natal mahogany), and *Rapanea melanophloeos* (Cape beech). Medium-sized trees and large shrubs include *Cunonia capensis* (red alder), *Halleria lucida* (tree fuchsia), *Diospyros whyteana* (bladdernut), *Apodytes dimidiata* (white pear), and *Cassine peragua* (forest spoonwood). On disturbed banks and transitional zones, pioneer species such as *Tarchonanthus camphoratus* (camphor bush) and various *Searsia* species occur. Invasive alien species such as *Solanum mauritianum* (bugweed), *Acacia mearnsii* (black wattle), and *Eucalyptus* spp. are common and should be removed.

In the understory, *Blechnum tabulare*, were noted near the streambanks, and *Mohria caffrorum*, which is more pioneer-like are in disturbed areas. Shade-tolerant herbs such as *Plectranthus ecklonii*, *Hypoestes aristata*, and *Chlorophytum bowkeri* were present and are effective ground cover. These understory species contribute significantly to biodiversity, microhabitat complexity, and bank stabilization, and are important inclusions in any ecological rehabilitation.

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.



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 UCVB 2– Unchanneled Valley Bottom systems

These two systems converge into one wetland near the dam and are in the centre of the study area. These areas share many similarities in description and therefore were described together but assessed independently (Plates 6 - 10).

Both systems are heavily transformed by the development of Kwanokuthula and several portions of UCVB 2 especially has been lost. In general, both of these systems are well vegetated, either with alien species such as *Cestrum laevigatum* (inkberry), *Solanum mauritianum* (bugweed), *Cenchrus clandestinum* (kikuyu grass), *Ricinus communis* (castor-oil plant), and *Acacia mearnsii* (black wattle), or with indigenous wetland species such as *Typha capensis* (bulrush), *Isolepis prolifera* (tufted sedge), and *Juncus effusus* (soft rush), which are typically found in wetter or saturated riparian margins.

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 UC/B 1 system indicating level of disturbance and confined eroded channel dominated by Typha capensis.



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



Plate 8: A photograph taken of the UC/B 2 system showing level of pollution in the system.



Plate 9: A photograph taken of the UC/B 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 – Hillslope Seep System

This Hillslope seep system is located on the northeastern section of the study area, much of it has been historically lost to the N2 (Plates 11 and 12).

The portion of Seep 2 that remains is only moderately impacted, although much of it has been lost to the N2 and downstream when it passes under the road its flow is concentrated, and the system immediately deteriorates. In general, this system has similar to species to UCVB 1 and UCVB 2 systems and it dominated by *Typha capensis*, with some *Cestrum laevigatum* (inkberry) and *Cenchrus clandestinum* (kikuyu grass) with indigenous wetland species such as *Typha capensis* (bulrush), and *Juncus effusus* (soft rush), which are typically found in wetter or saturated riparian margins.

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" (Upstream, 2025).



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.

2 PURPOSE OF THIS REPORT

This site sensitivity verification report forms part of the application for environmental authorisation for the proposal and has been generated from the National Web Based Environmental Screening Tool.

The "Protocols for the Assessment and Minimum Criteria for Reporting on identified Environmental Themes ("the protocols") were promulgated in Government Notice No. 320, published in Government Gazette No. 43110 on the 20th of March 2020 and which came into effect on the 9th of May 2020. The Protocols are allowed for in terms of Sections 25(5)(a) and (h) and 44 of the National Environmental Management Act, 1998 (as amended) (Act No. 107 of 1998) ("NEMA").

The Protocols are applicable to all applications for Environmental Authorisation (EA) that are submitted after 9 May 2020. According to the Protocols, the EAP must verify the current use of the site in question and its environmental sensitivity as identified in the screening tool to determine the need for specific specialist inputs.

3 SENSITIVITY VERIFICATION AND METHODOLOGY

According to the protocols Site Sensitivity Verification must be undertaken by the EAP or in some circumstances by a specialist and must include the following:

- Desktop analysis
- Site inspection
- Other relevant information which can inform the sensitivity rating assigned by the screening tool.

This site sensitivity verification statement was compiled by the EAP, HillLand Environmental, based on the following:

- Site visits.
- Historic application information (aerial imagery and historic environmental impact assessment done for the full development);
- A desktop investigation aerial photography and the various mapping tools (biodiversity and land use mapping, Western Cape Biodiversity Spatial Biodiversity, CBA & ESA mapping, NBA mapping and Cape Farm Mapper).
- Specialists input

4 RESULTS OF SCREENING TOOL

Application category:

- Transformation of land | indigenous vegetation (main activity)

4.1 SENSITIVITY THEMES

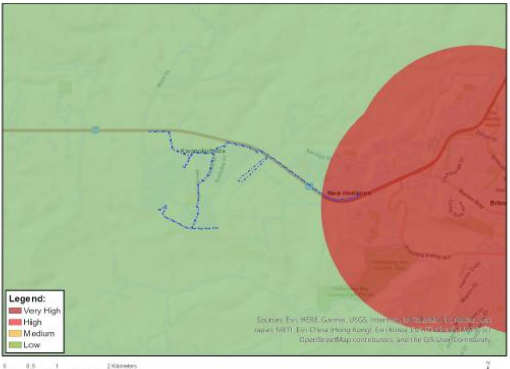
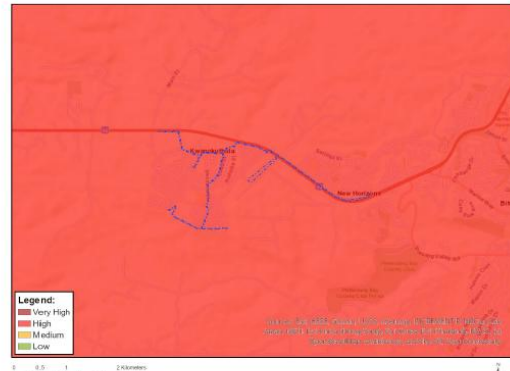
The table below serves to:

- Indicate the theme sensitivities identified in the screening tool report (21 January 2024).

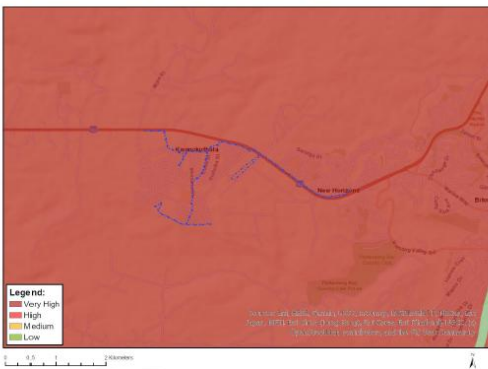
It is necessary to confirm / dispute the sensitivity rating and need for the various specialist inputs called for in terms of the screening tool report.

Based on the screening tool reports and the environmental sensitivity of the site, the following themes are identified:

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity	Reason for sensitivity rating
Agriculture theme		X			MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY

Aquatic biodiversity theme	X				MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY  <table><tr><td>Very High sensitivity</td><td>High sensitivity</td><td>Medium sensitivity</td><td>Low sensitivity</td></tr><tr><td>X</td><td></td><td></td><td></td></tr></table> Sensitivity Features: <table><tr><th>Sensitivity</th><th>Feature(s)</th></tr><tr><td>Very High</td><td>ESA 1: Aquatic</td></tr><tr><td>Very High</td><td>FEPA Subcatchment</td></tr><tr><td>Very High</td><td>SWSA (SW) Outeniqua</td></tr></table>	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity	X				Sensitivity	Feature(s)	Very High	ESA 1: Aquatic	Very High	FEPA Subcatchment	Very High	SWSA (SW) Outeniqua
Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity																		
X																					
Sensitivity	Feature(s)																				
Very High	ESA 1: Aquatic																				
Very High	FEPA Subcatchment																				
Very High	SWSA (SW) Outeniqua																				
Archaeological and cultural heritage theme	X				MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY  <table><tr><td>Very High sensitivity</td><td>High sensitivity</td><td>Medium sensitivity</td><td>Low sensitivity</td></tr><tr><td>X</td><td></td><td></td><td></td></tr></table> Sensitivity Features: <table><tr><th>Sensitivity</th><th>Feature(s)</th></tr><tr><td>Low</td><td>Low sensitivity</td></tr><tr><td>Very High</td><td>within 2km of a grade II Heritage site</td></tr></table>	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity	X				Sensitivity	Feature(s)	Low	Low sensitivity	Very High	within 2km of a grade II Heritage site		
Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity																		
X																					
Sensitivity	Feature(s)																				
Low	Low sensitivity																				
Very High	within 2km of a grade II Heritage site																				
Civil aviation theme		X			MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY  <table><tr><td>Very High sensitivity</td><td>High sensitivity</td><td>Medium sensitivity</td><td>Low sensitivity</td></tr><tr><td></td><td>X</td><td></td><td></td></tr></table> Sensitivity Features: <table><tr><th>Sensitivity</th><th>Feature(s)</th></tr><tr><td>High</td><td>Within 8 km of other civil aviation aerodrome</td></tr></table>	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity		X			Sensitivity	Feature(s)	High	Within 8 km of other civil aviation aerodrome				
Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity																		
	X																				
Sensitivity	Feature(s)																				
High	Within 8 km of other civil aviation aerodrome																				

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					<table><tr><td>Medium</td><td><i>Felicia westae</i></td></tr><tr><td>Medium</td><td><i>Osteospermum pterigoideum</i></td></tr><tr><td>Medium</td><td><i>Acmadenia alternifolia</i></td></tr><tr><td>Medium</td><td><i>Muraltia kaysaensis</i></td></tr><tr><td>Medium</td><td><i>Erica glumiflora</i></td></tr><tr><td>Medium</td><td><i>Acrolophia lunata</i></td></tr><tr><td>Medium</td><td>Sensitive species 763</td></tr><tr><td>Medium</td><td><i>Pterygodium cleistogamum</i></td></tr></table>	Medium	<i>Felicia westae</i>	Medium	<i>Osteospermum pterigoideum</i>	Medium	<i>Acmadenia alternifolia</i>	Medium	<i>Muraltia kaysaensis</i>	Medium	<i>Erica glumiflora</i>	Medium	<i>Acrolophia lunata</i>	Medium	Sensitive species 763	Medium	<i>Pterygodium cleistogamum</i>		
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Terrestrial biodiversity theme	X				MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY  Legend: - Very High - High - Medium - Low 0 0.5 1 2 Kilometres <table><tr><th>Very High sensitivity</th><th>High sensitivity</th><th>Medium sensitivity</th><th>Low sensitivity</th></tr><tr><td>X</td><td></td><td></td><td></td></tr></table> Sensitivity Features: <table><tr><th>Sensitivity</th><th>Feature(s)</th></tr><tr><td>Very High</td><td>ESA 2: Restore from other land use</td></tr><tr><td>Very High</td><td>CBA 1: Terrestrial</td></tr><tr><td>Very High</td><td>FEPA Subcatchment</td></tr><tr><td>Very High</td><td>SWSA (SW) -Outeniqua</td></tr></table>	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity	X				Sensitivity	Feature(s)	Very High	ESA 2: Restore from other land use	Very High	CBA 1: Terrestrial	Very High	FEPA Subcatchment	Very High	SWSA (SW) -Outeniqua
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Very High	SWSA (SW) -Outeniqua																						

4.2 ASSESSMENTS IDENTIFIED IN THE SCREENING TOOL REPORT

The screening tool identified the following assessments as being potentially necessary based on the selected classification and environmental sensitivities:

- Landscape/visual impact assessment (general protocol);
- Archaeological and cultural heritage impact assessment (general protocol);
- Palaeontology impact assessment (general protocol);
- Terrestrial biodiversity impact assessment (terrestrial biodiversity assessment protocol);
- Aquatic impact assessment (aquatic biodiversity assessment protocol);
- Socio-economic impact assessment (general protocol);
- Plant species assessment (plant species assessment protocol);
- Animal species assessment (animal species assessment protocol);

5 CONFIRMATION OF THEME SENSITIVITY AND ASSESSMENTS

Based on the site verification, the following table confirms/disputes the sensitivities as indicated in the screening tool report (Green shading highlights the rating proposed where the rating is disputed).

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity	Specialist report done	Reason if not
Agriculture theme		X		x	YES	Although within an urban area and work to existing sewer line, a compliance statement will be included in the process. The rating should be low as the proposal will not impact on the land capability or agriculture land.
Animal species theme		X		x	YES	Compliance statement will form part of the process. Biocensus confirmed that the animal species sensitivity is likely to be low based on initial inspection/assessment and transformed state of the habitat.
Aquatic biodiversity theme	X	x			YES	As per the specialist In conclusion, the DFFE Screening Tool resulted in Very High sensitivity ratings within the development footprint, and surrounding area, CBA 1 Aquatic features and FEPA Subcatchment. The site should be assessed as sensitive with regards to aquatic biodiversity due to these aspects It is recommended that a full Aquatic Biodiversity Impact Assessment is undertaken for the project.
Archaeological and cultural heritage theme	X				NO	HWC confirmed no further studies required
Civil aviation theme		X			NO	The works underground and to any pump stations will have no impact on the civil aerodrome. SACAA will form part of the I&APs that will be requested to comment
Defence theme				X	x	NO
Paleontology theme		X		x	NO	HWC confirmed no further studies required
Plant species theme			X	x	YES	Compliance statement will form part of the process. Biocensus confirmed that the plant species sensitivity is likely to be low based on initial inspection/assessment and transformed state of the habitat.
Terrestrial biodiversity theme	X			x	YES	Compliance statement will form part of the process. Biocensus confirmed that the terrestrial biodiversity sensitivity is likely to be low based on initial inspection/assessment.

Additional recommended studies (not linked to a theme):

Visual assessment not deemed necessary – work is being undertaken to the existing pipeline which will only have limited short term construction visual impact that will not be offence. Therefore no assessment required.

Socio-Economic – the proposal is in line with the SDF and Municipal planning for the area, a socio-economic assessment is therefore not deemed necessary.

6 CONCLUSION OF SITE SENSITIVITY VERIFICATION

Based on the above, the small scale of the project cannot be reflected through the use of the national screening tool which does not capture the site-specific condition and applicable aspects.

The following was done

- Terrestrial biodiversity, plant and animal compliance statements
- Aquatic assessment and WULA application
- HWC to confirmed that no assessments required
- Agriculture compliance statement