

Site Sensitivity Verification Report



THE PROPOSED NORTHERN BULK DISTRIBUTION PIPELINE, MANGAUNG METROPOLITAN MUNICIPALITY, FREE STATE PROVINCE.

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On 20 March 2020, the Minister of Forestry, Fisheries, and the Environment published the general requirements for undertaking site sensitivity verification for environmental themes for activities requiring environmental authorisation (Government Gazette No. 43110). In terms of these requirements, prior to commencing with a specialist assessment, the current land use and environmental sensitivity of the site under consideration by the screening tool must be confirmed by undertaking a site sensitivity verification by either an EAP or a specialist.

The report uses national datasets to identify site sensitivities and potential specialist studies that may be required for any particular development. Since the datasets are not necessarily ground-truthed, there may be instances where the required specialist study is, in actual fact, not necessary.

Prior to commencing with a specialist assessment, the current use of the land [must be verified] and the environmental sensitivity of the site under consideration identified by the screening tool [must be verified] by undertaking a site sensitivity verification (SSV).

According to the Assessment Protocol for specialist involvement, if any part of the proposed development falls within an area of 'high' or 'very high' sensitivity, the requirements prescribed for such sensitivity must be followed.

1. The Site Sensitivity Verification (SSV) must be undertaken by an EAP or a specialist
 The SSV report has been compiled by the EAP and SACNASP-registered specialist (if required).
2. A preliminary on-site inspection must be undertaken
 The preliminary on-site inspection has been undertaken
3. A desktop analysis, using satellite imagery, must be undertaken, alongside any other applicable/ relevant information.
 Consideration has been given to relevant GIS data and Google Earth.

The outcome of this site sensitivity verification report:

- a) confirms or disputes the current use of the land and environmental sensitivity as identified by the screening tool, such as new developments or infrastructure, the change in vegetation cover or status, etc.;
- b) contains a motivation and evidence (e.g., photographs) of either the verified or different use of the land and environmental sensitivity; and
- c) submitted together with the relevant assessment report prepared in accordance with the requirements of the Environmental Impact Assessment Regulations.

1. General Site Information

The proposed development is located in the Free State Province of South Africa, specifically in the northern extension of Bloemfontein, ward 44. This project falls within the jurisdiction of Mangaung Metropolitan Municipality. The approximate geographical coordinates of the project site are 29°03'27.9"S latitude and 26°13'47.1"E longitude.

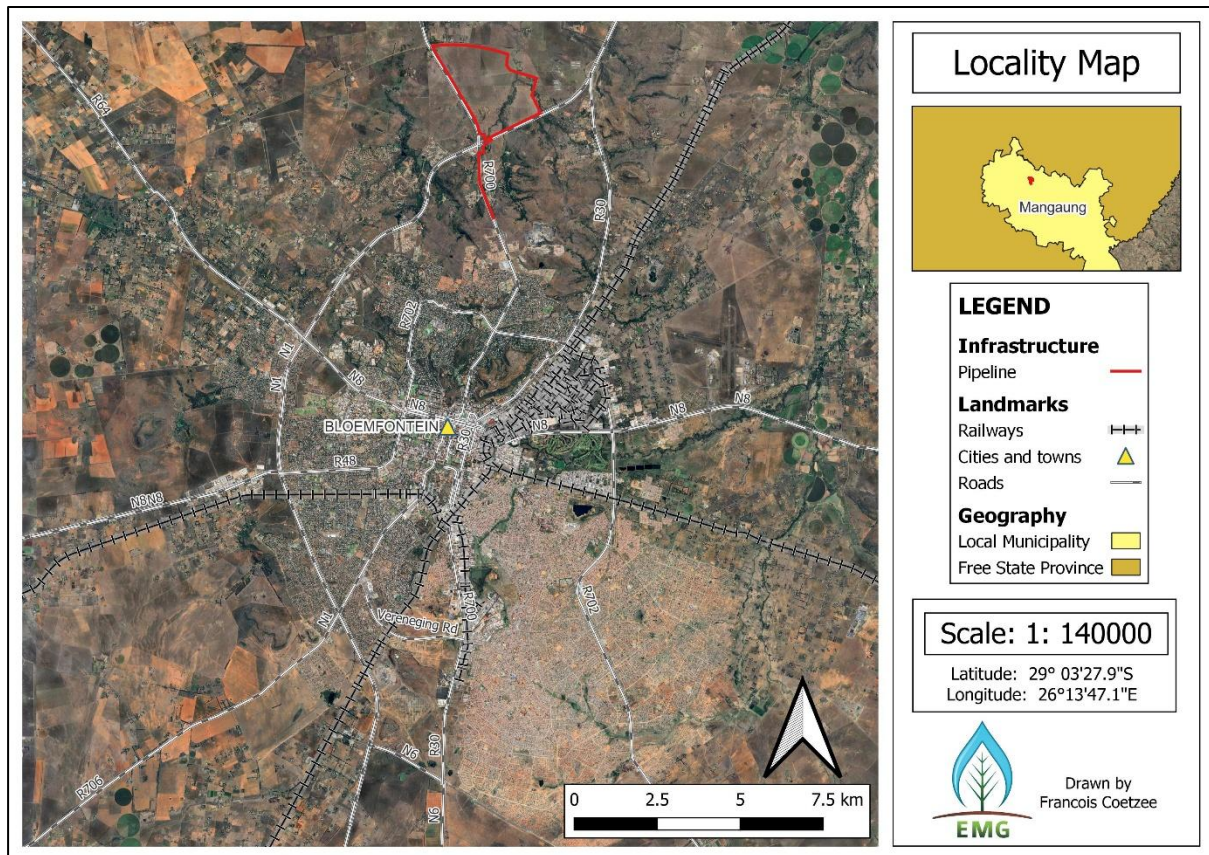


Figure 1: Locality Map of the Proposed Development Site in Relation to Nearby Towns and Landmarks.

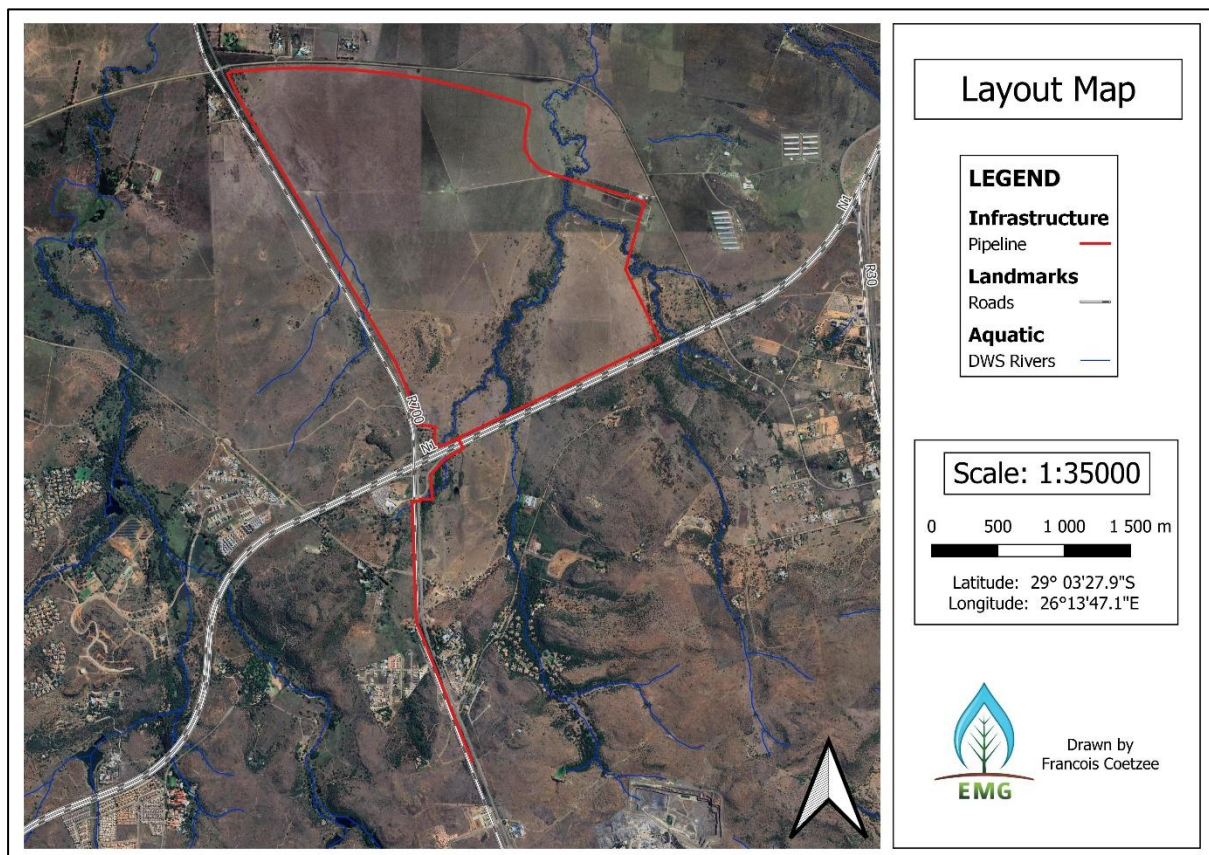


Figure 2: Layout of the Proposed Development.

The proposed bulk water pipeline development forms part of a broader regional infrastructure initiative aimed at enhancing bulk water supply capacity and ensuring long-term water security within the province. The project specifically seeks to augment the existing bulk distribution network by increasing the conveyance capacity of potable water to the northern extensions of Bloemfontein. These areas are experiencing ongoing residential and commercial expansion, resulting in increased pressure on the existing water supply infrastructure.

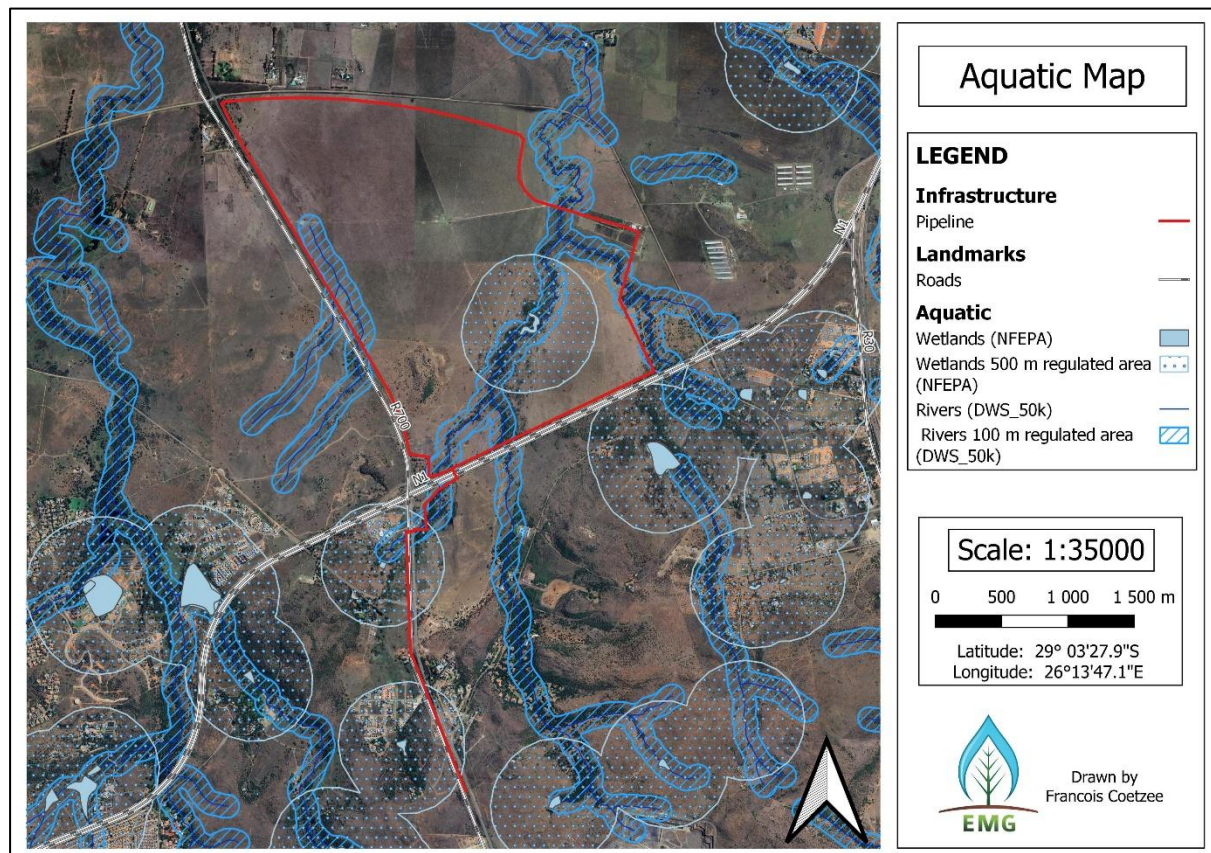


Figure 3: Aquatic map showing nearby watercourses.

The proposed development layout entails the crossing of various non-perennial rivers and associated drainage lines within the project area.

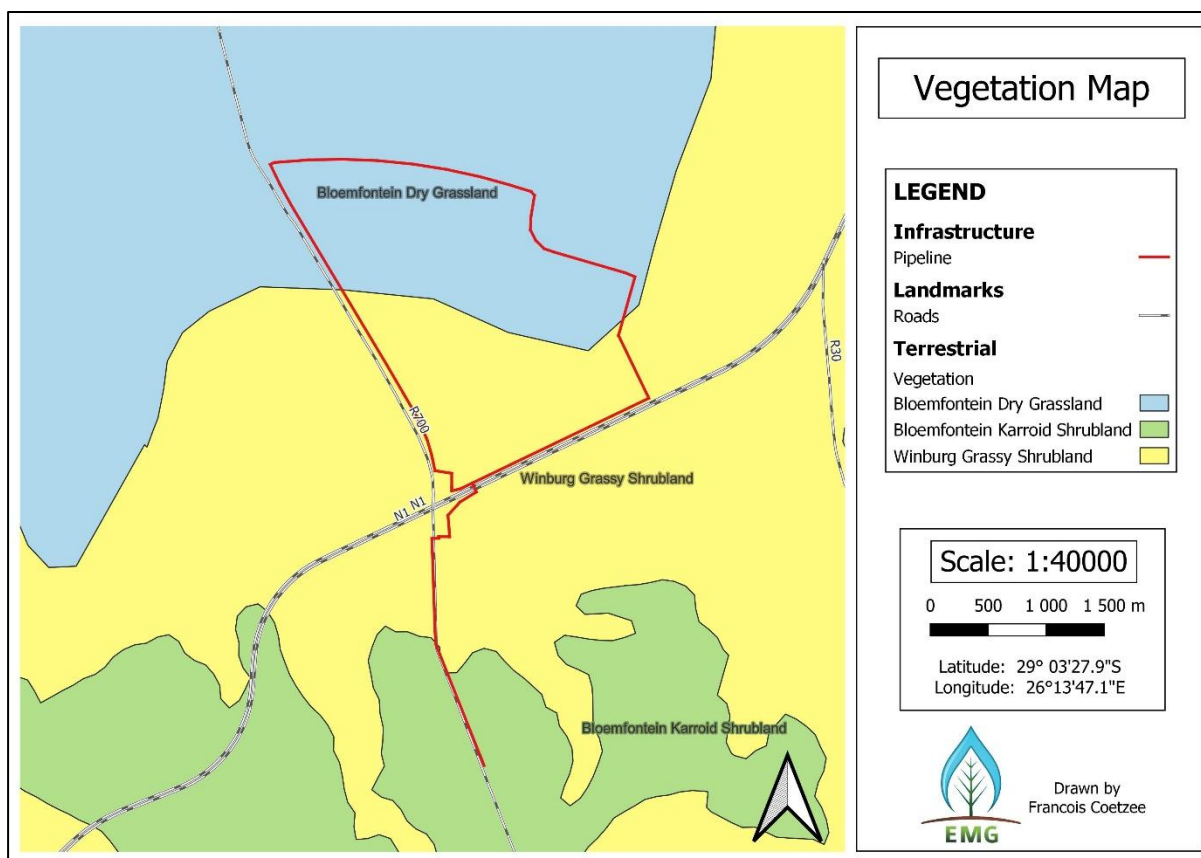


Figure 2: Vegetation Map of the Area Surrounding the Proposed Development Area.

The proposed development is located within the Bloemfontein Dry Grassland, Bloemfontein Karroid Shrubland, and Winburg Grassy Shrubland vegetation types. All three vegetation types are classified as Least Concern.

2. Screening Tool Results

According to the Screening Tool Report, the following environmental sensitivities of the construction footprint are identified (Table 1).

Five themes were identified as being of very high sensitivity, two themes as high sensitivity, one theme as medium sensitivity, and one theme as low sensitivity (Table 1). The sensitivity classification assigned to each theme is based on the individual feature within that theme exhibiting the highest degree of environmental sensitivity.

Table 1: Summary of the construction footprint environmental sensitivities.

Theme	Very high sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agricultural Theme		X		
Animal Species Theme			X	
Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme	X			
Civil Aviation Theme		X		
Defence Theme	X			

Palaeontology Theme	X			
Plant Species Theme				X
Terrestrial Biodiversity Theme	X			

2.1. Agriculture (High).

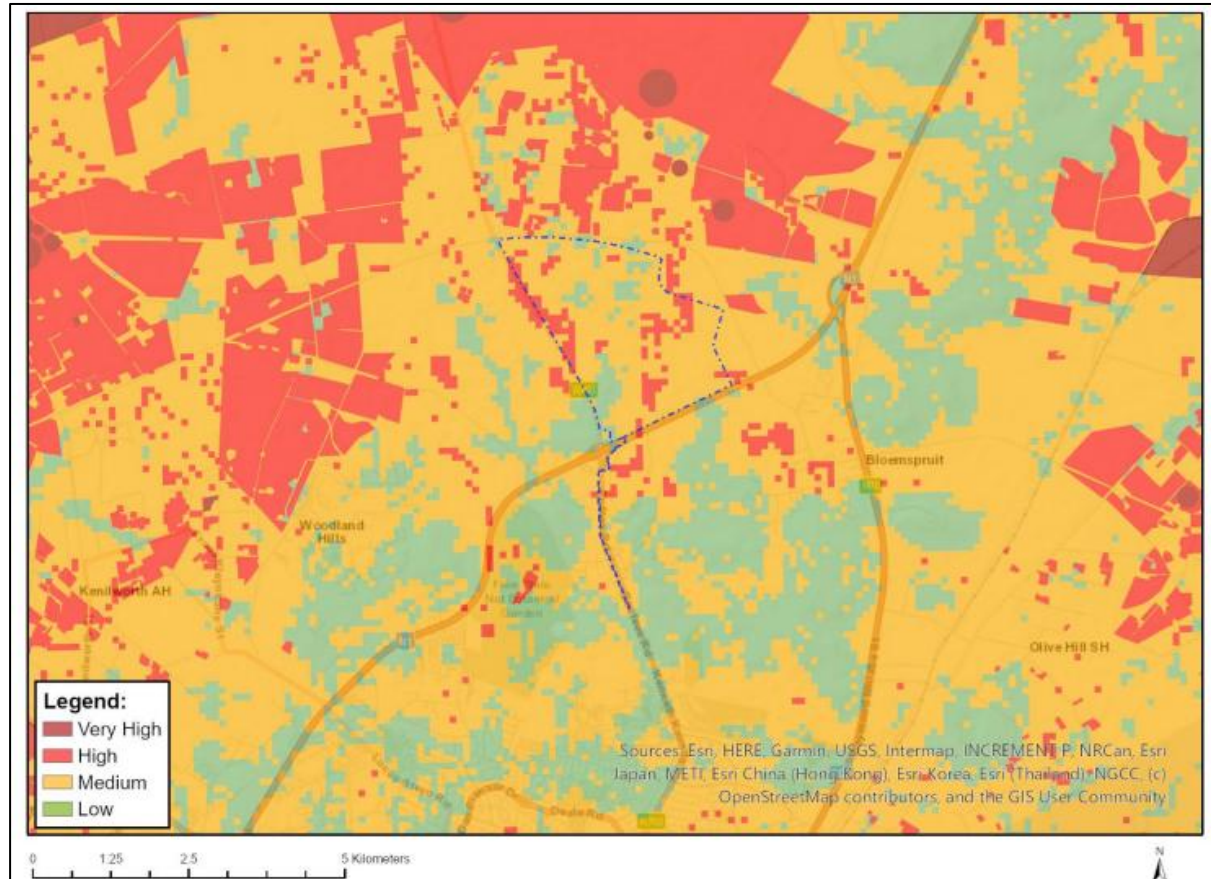


Figure 3: Image from Screening Tool, the Agricultural Theme sensitivity area of the development.

Table 2: Agricultural Theme Sensitivity Features.

Sensitivity	Feature(s)
High	08. Moderate
Low	05. Low
Low	04. Low-Very Low
Medium	06. Low-Moderate
Medium	07. Low-Moderate

Finding:

The Screening Tool identifies the agricultural sensitivity theme as 'High'.

Motivation for exclusion

The starting point of the development is situated within an established residential area in the northern sections of Bloemfontein, where the development will occur in the road reserve of

the R700. By utilising existing transformed and serviced corridors, the proposed layout seeks to minimise additional disturbance to undeveloped and environmentally sensitive areas. As the proposed activity is linear in nature, the overall spatial footprint and long-term impact on the surrounding environment are expected to be relatively limited. Disturbances associated with construction activities will largely be temporary and localised, with affected areas anticipated to recover and rehabilitate to a near-natural state within approximately two years following construction, provided that appropriate rehabilitation and environmental management measures are implemented.

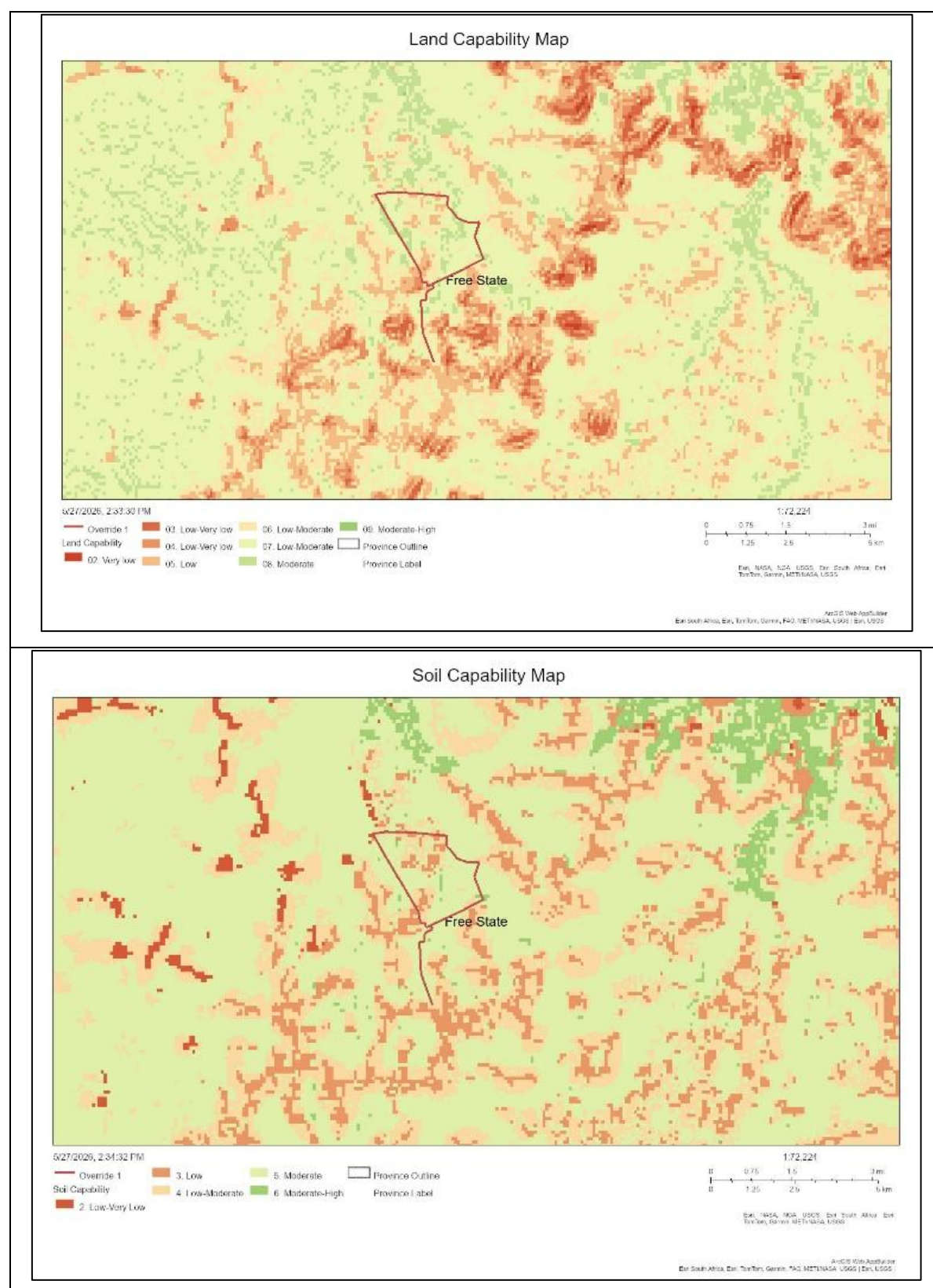
There are currently no active agricultural activities taking place within the proposed development area. Since the pipeline will be installed underground, the proposed development will not restrict future cultivation, livestock grazing, or irrigation activities, such as the use of centre pivots, once construction has been completed.

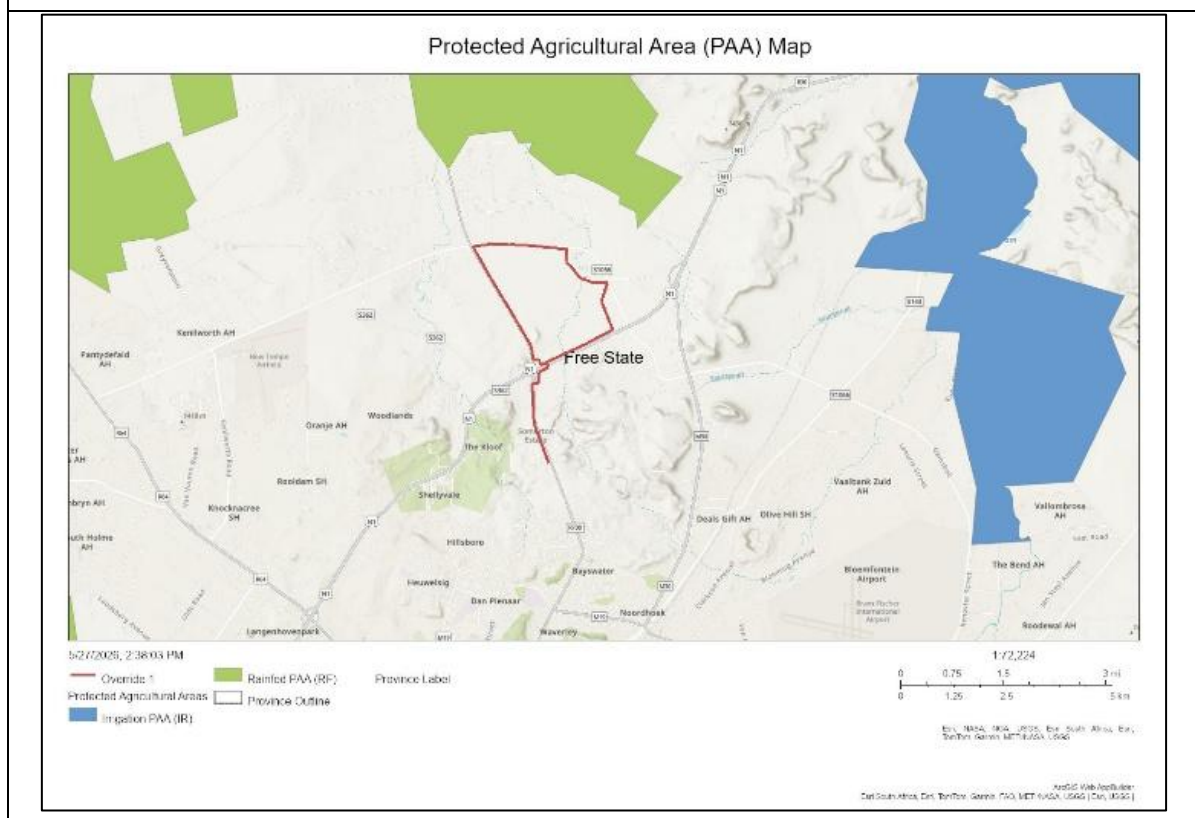
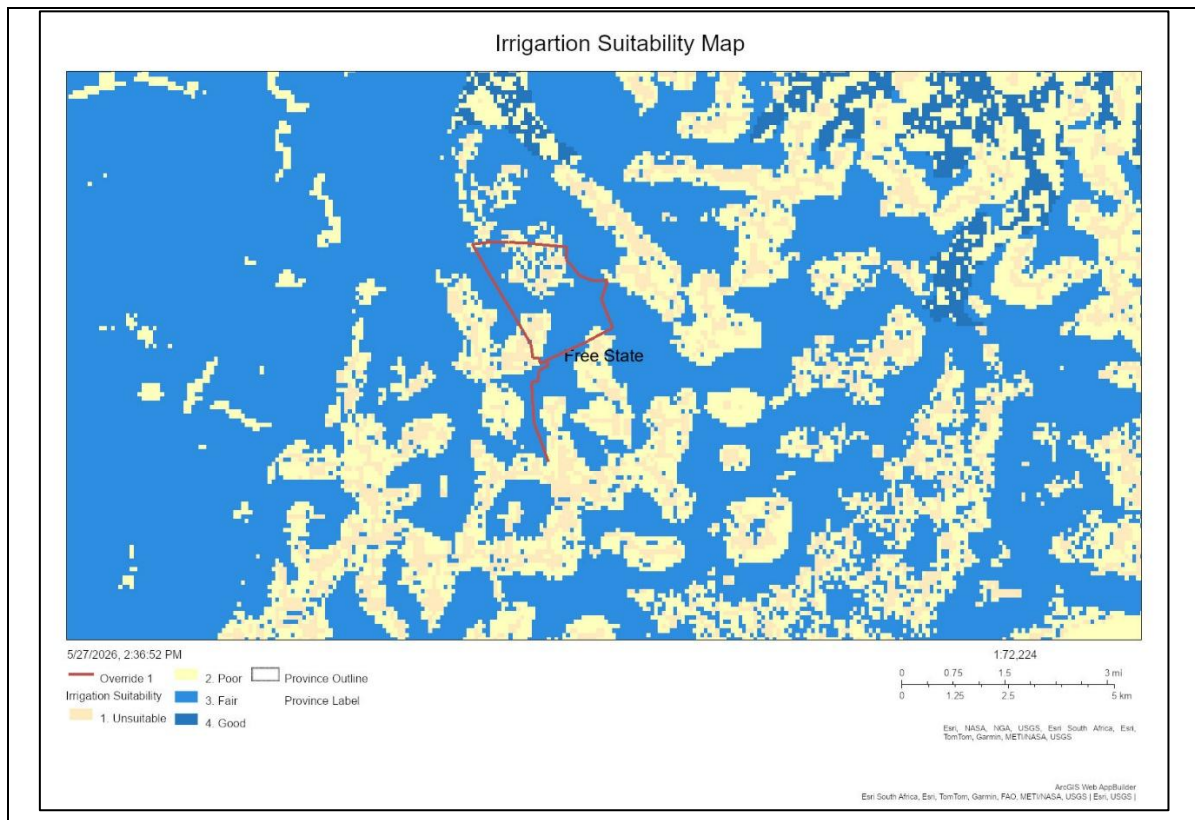
Furthermore, the proposed development falls within the designated Water Resource Development Zone identified in the 2025 Spatial Development Framework (SDF) of the Mangaung Metropolitan Municipality, indicating that the area has been earmarked for future development. The area north of Bloemfontein is already experiencing rapid urban expansion, with several residential rezoning applications having been submitted within the surrounding area. As a result, the area is being prioritised for future residential and associated infrastructure development rather than long-term agricultural use.

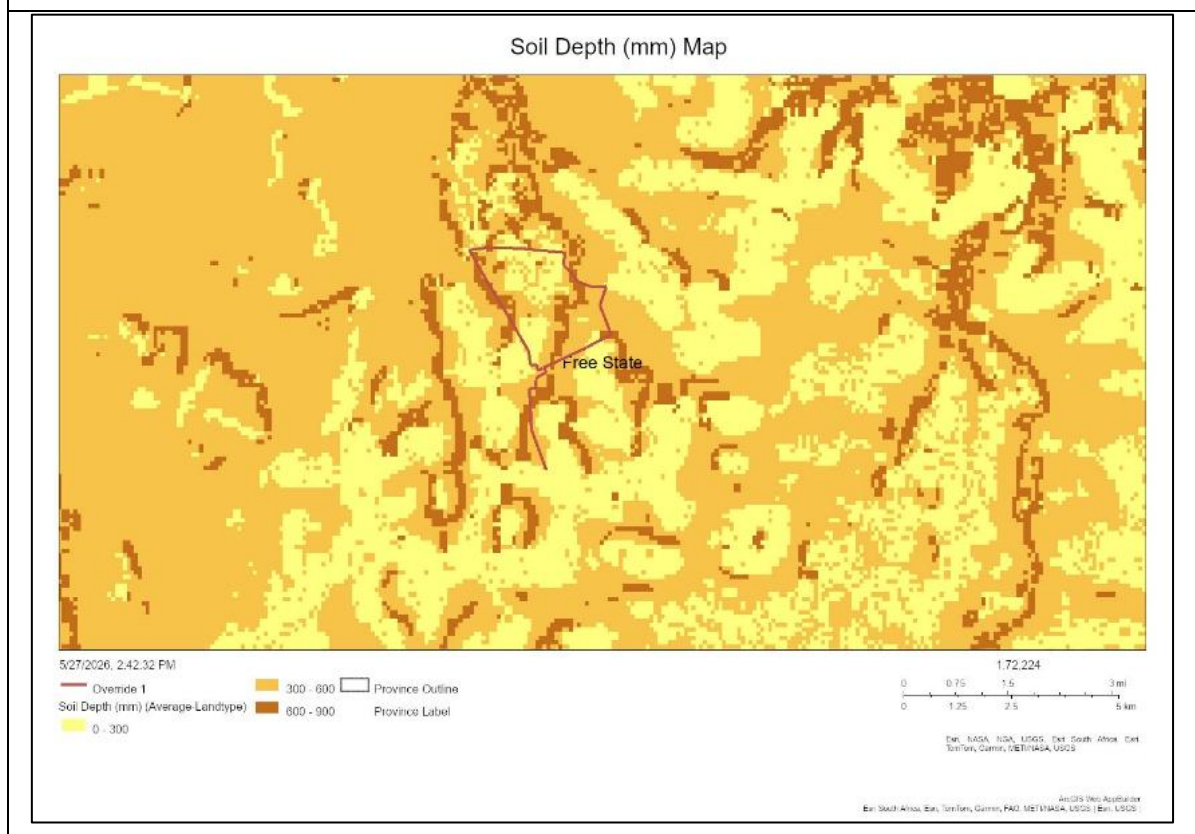
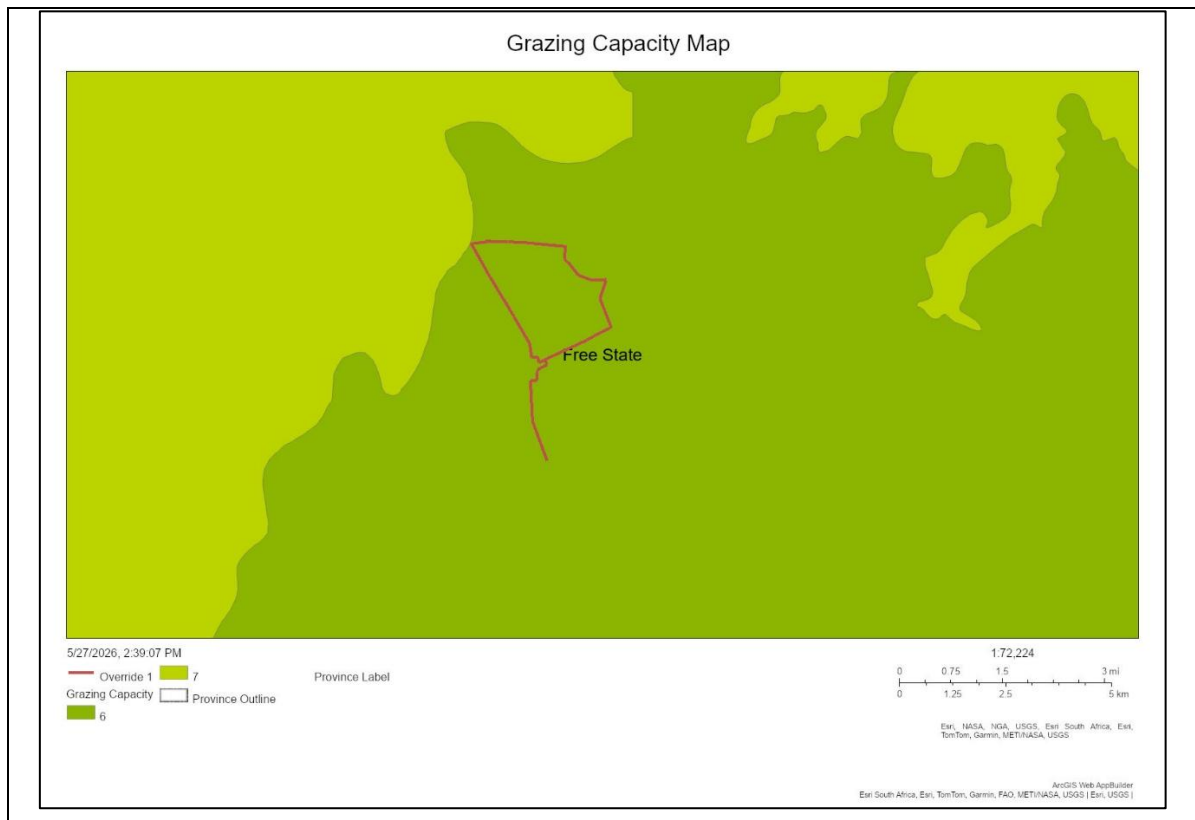
In addition, the proposed development falls outside the Protected Agricultural Area (PAA), as indicated in Table 3. The agricultural potential of the site is variable, with land capability ranging from very low to moderately high, soil capability ranging from very low to moderately high, irrigation suitability ranging from unsuitable to good, moderate grazing capacity (6–7 ha/LSU), and soil depths varying between 0 mm – 900 mm, as indicated in Table 3.

The anticipated impact on the environment is considered to be limited in extent and of low significance due to the nature and location of the proposed development. The proposed activity is not expected to result in the substantial loss or fragmentation of agricultural land, nor will it significantly affect the agricultural potential or current agricultural practices within the area. Based on the anticipated low environmental and agricultural risk associated with the proposed activity, an Agricultural Impact Assessment is not considered necessary for the development.

Table 3: Maps associated concerning agriculture suitability of the study area.







2.2. Animal Species (Medium).

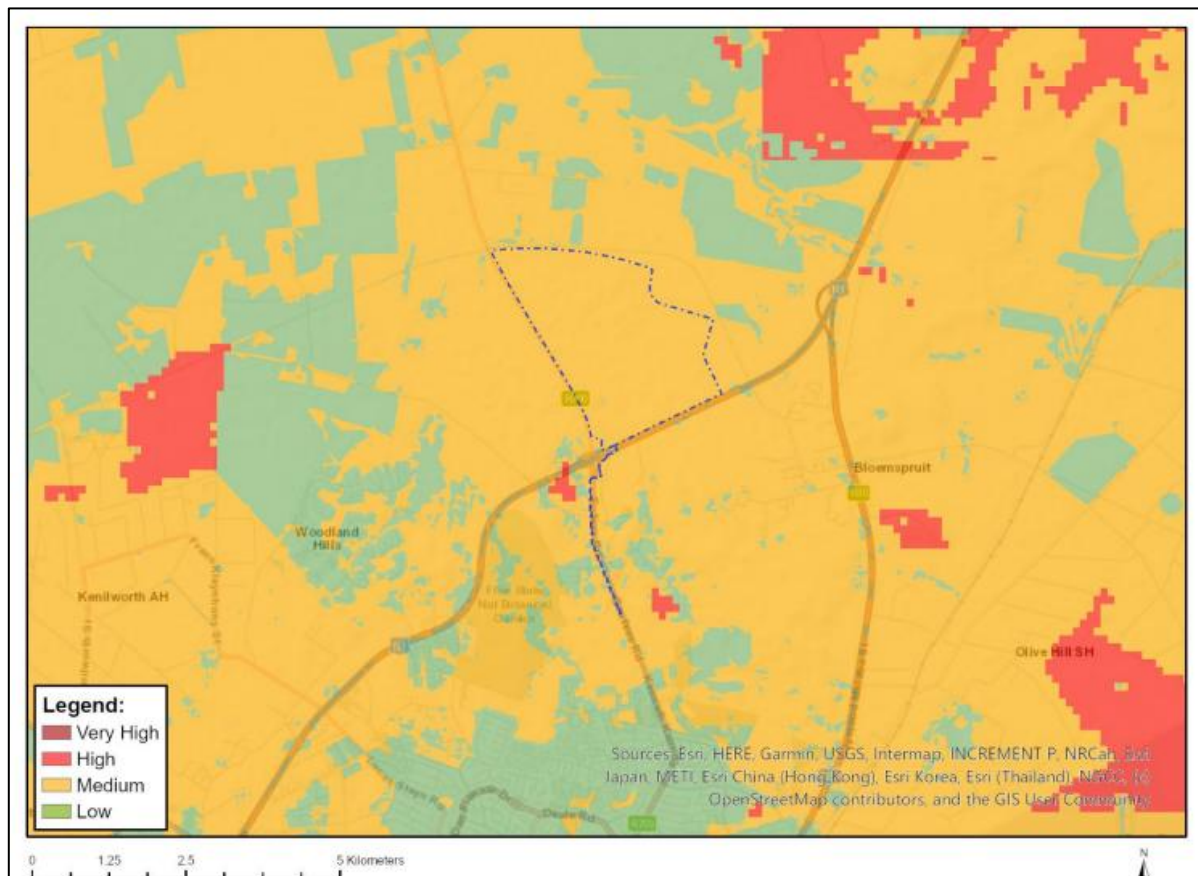


Figure 4: Image from Screening Tool identifying the Animal Species theme sensitivity for the proposed development.

Table 4: Animal Species Theme Sensitivity Features.

Sensitivity	Feature(s)
Low	Subject to confirmation
Medium	Mammalia- <i>Hydriactis maculicollis</i>
Medium	Mammalia- <i>Mystromys albicaudatus</i>

Finding:

On account of the potential presence of the species *Hydriactis maculicollis* (Spotted-necked otter) and *Mystromys albicaudatus* (White-tailed mouse), the areas traversed by the proposed construction footprint are classified as having a 'Medium' sensitivity in terms of the animal species theme.

Motivation for exclusion:

Hydriactis maculicollis is typically associated with perennial rivers, lakes, and other permanent freshwater systems that provide suitable aquatic habitat and prey availability. As the proposed development does not traverse any perennial rivers or lakes, suitable habitat for this species is considered absent within the study area. Consequently, the likelihood of occurrence of this

species within the proposed development footprint is regarded as low.



Figure 5: *Hydriectis maculicollis* (Spotted-necked otter) in its natural habitat.

Mystromys albicaudatus is known to inhabit grassland, heath, Karoo vegetation, and rocky terrain with adequate grass cover. Although portions of the broader study area may provide marginally suitable habitat, the majority of the proposed construction activities will occur within already disturbed areas in close proximity to disturbed areas, including urban environments and along existing road reserves. Furthermore, the proposed activity is linear in nature, resulting in a relatively narrow and localised disturbance footprint. As such, the anticipated impact on this species and its habitat is expected to be minimal.

A specialist animal species assessment is not deemed necessary as the associated pipeline will be constructed underground, resulting in only temporary disturbance during the construction phase and no long-term impacts on habitat availability.



Figure 6: *Mystromys albicaudatus* (White-tailed mouse).

2.3. Aquatic Biodiversity (Very High).

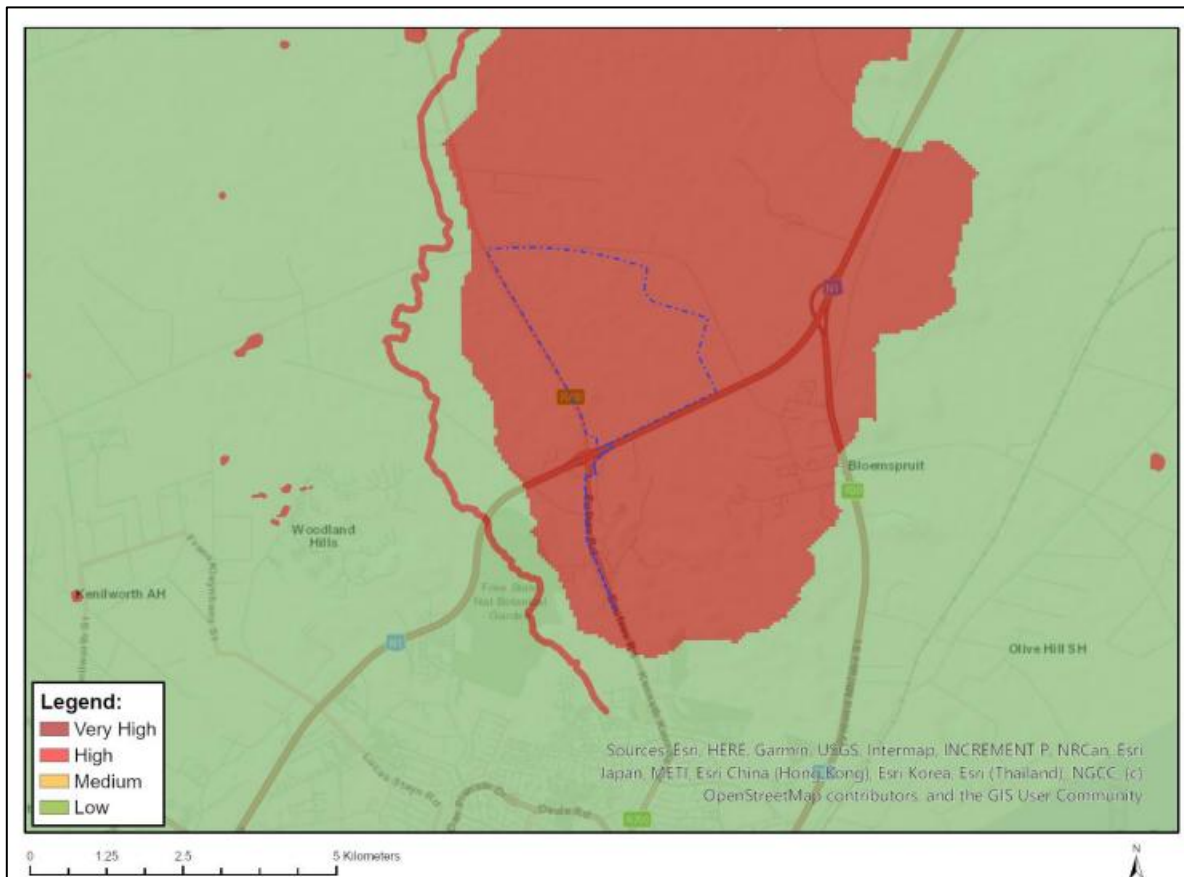


Figure 7: Image from Screening Tool identifying the Aquatic Biodiversity theme sensitivity for the development.

Table 5: Aquatic Biodiversity Theme Sensitivity Features.

Sensitivity	Feature(s)
Very High	FEPA Subcatchment

Finding:

The area is classified as having a 'Very High' sensitivity in terms of aquatic biodiversity, as it falls within a FEPA subcatchment.

Motivation for inclusion:

An Aquatic Impact Assessment will be undertaken for the study area, and the findings will be incorporated into the Basic Assessment Report (BAR).

2.4. Archaeological & Cultural Heritage (Very High).

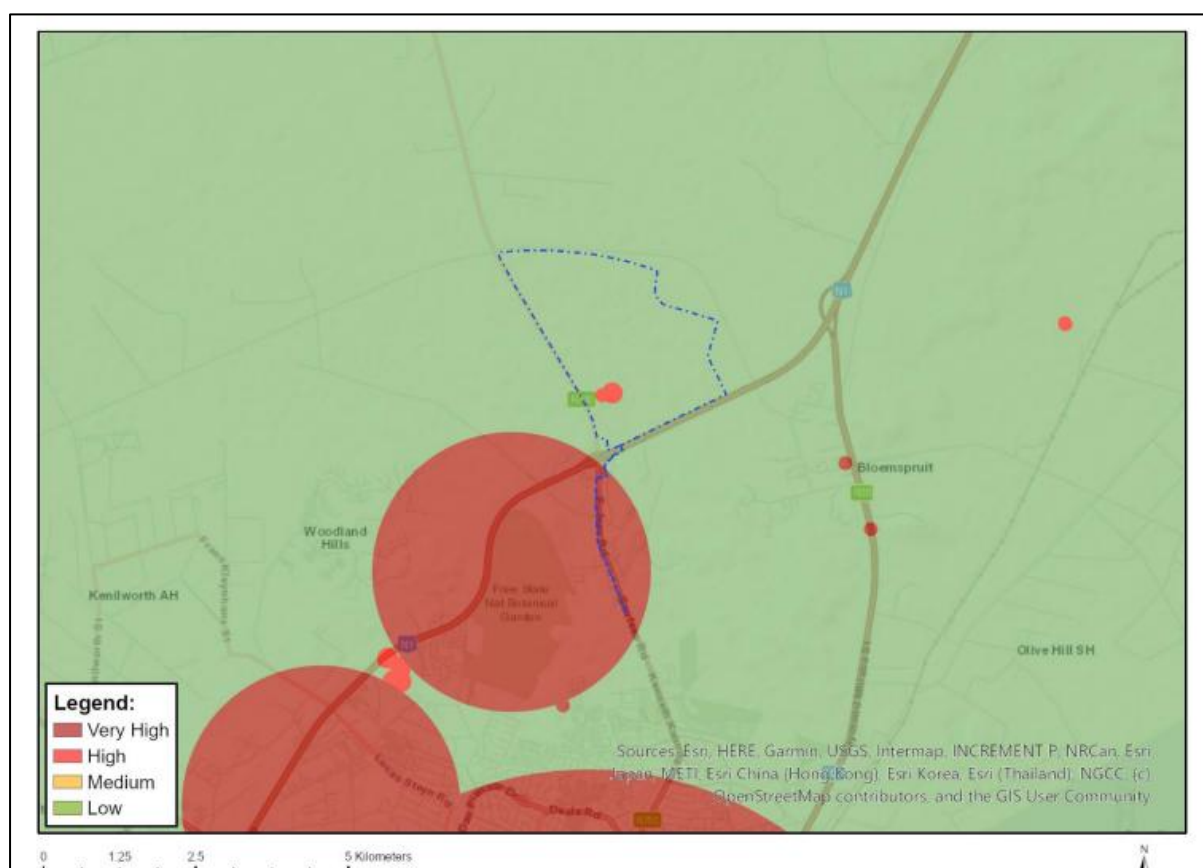


Figure 8: Image from Screening Tool identifying the Archaeological and Cultural Heritage theme sensitivity for the development.

Table 6: Archaeological and Cultural Heritage Sensitivity Features.

Sensitivity	Feature(s)
High	Within 150m of a Grade IIIa Heritage site
High	Within 100m of a Grade IIIb Heritage site
High	Within 50m of a Grade IIIc Heritage site
Low	Low Sensitivity
Very High	Within 2km of a Grade II Heritage site

Findings:

According to the Department of Forestry, Fisheries, and the Environment (DFFE) screening tool, the proposed development area is indicated to have a 'Very High' sensitivity in relation to archaeological and cultural heritage features, as it is located within 2 km of a Grade II heritage site.

Motivation for inclusion:

The proposed activities fall within the development categories outlined in Section 38(1) of the National Heritage Resources Act, 1999 (Act 25 of 1999) (NHRA). A Heritage Impact Assessment will therefore be undertaken to identify any heritage resources within the study

area and assess potential impacts associated with the proposed development. The findings will be incorporated into the BAR.

2.5. Civil Aviation (High).

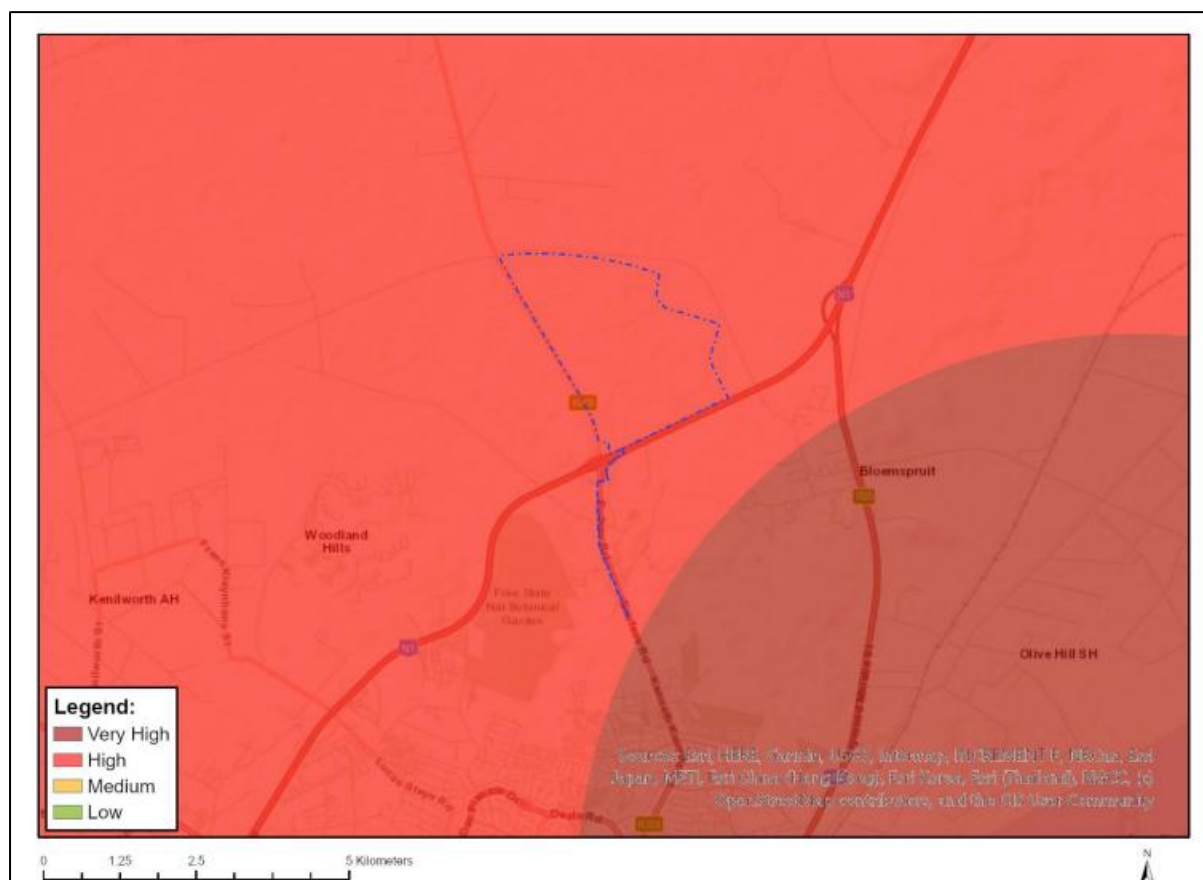


Figure 9: Image from Screening Tool identifying the Civil Aviation theme sensitivity for the development.

Table 7: Civil Aviation Theme Sensitivity Features.

Sensitivity	Feature(s)
High	Within 15 km of a civil aviation radar
High	Between 8 and 15 km from a major civil aviation aerodrome
High	Within 8 km of other civil aviation aerodrome
Medium	Within 5 km of an air traffic control or navigation site
Medium	Between 15 and 35 km from a civil aviation radar
Medium	Between 15 and 35 km from a major civil aviation aerodrome
Medium	Between 8 and 15 km of other civil aviation aerodrome

Finding:

Due to the proposed development being located within 15 km of a civil aviation radar facility, between 8 and 15 km from a major civil aviation aerodrome, and within 8 km of a civil aerodrome, the portions intersected by the construction footprint are assigned a 'High'

Motivation for exclusion:

2.6. Defence (Very High).

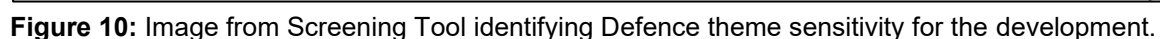


Table 8: Defence Theme Sensitivity Features.

Sensitivity	Feature(s)
Medium	Military and Defence Site
Very High	Military and Defence Site

Findings:

The screening report indicates that the receiving environment has a ‘Very High’ sensitivity for this theme, as it falls within the radius of a military and defence site.

Motivation for exclusion

The proposed activity is not anticipated to pose any threat to national defence installations, infrastructure, or operational activities. Furthermore, the nature and location of the development are such that no direct or indirect impacts on defence-related facilities or functions are expected. Accordingly, there are no reasonable grounds to warrant consultation with the Department of Defence.

The Department of Defence will nevertheless be included in the I&AP Register, and any comments received will be addressed in the BAR. In consideration of the development’s proximity and limited extent, and in the absence of any anticipated impacts, the sensitivity is regarded as ‘Low’, and no further specialist assessment is required.

2.7. Palaeontology (Very high).



Figure 11: Image from Screening Tool identifying Palaeontology theme sensitivity for the development.

Table 9: Palaeontology Theme Sensitivity Features.

Sensitivity	Feature(s)
Medium	Features with a Medium paleontological sensitivity
Very High	Features with a Very High paleontological sensitivity

Findings:

The screening tool identifies this theme as having a 'Very High' paleontological sensitivity.

Motivation for inclusion

A HIA will be undertaken by a suitably qualified specialist. The assessment will evaluate the palaeontological sensitivity of the geological formations intersected by the proposed pipeline, identify any potential fossil heritage resources, and assess their significance. It will further provide appropriate mitigation recommendations, including chance-finds procedures to be implemented during construction, where applicable, and ensure that any palaeontological resources, if present, are adequately protected from damage or destruction.

The findings of the HIA will be incorporated into the BAR to inform the development of appropriate mitigation measures and ensure compliance with relevant heritage legislation.

2.8. Plant Species (Low).



Figure 12: Image from Screening Tool identifying the Plant Species theme sensitivity for the development.

Table 10: Plant Species Theme Sensitivity Features.

Sensitivity	Feature(s)
Low	Low Sensitivity

Findings:

The screening tool identifies this theme as having a 'Low' sensitivity.

Motivation for exclusion:

An Ecological Impact Assessment will be undertaken as part of the environmental assessment process to further evaluate the ecological characteristics of the study area and the potential impacts associated with the proposed development. The findings and recommendations of the specialist assessment will be incorporated into the BAR.

2.9. Terrestrial Biodiversity (Very High).

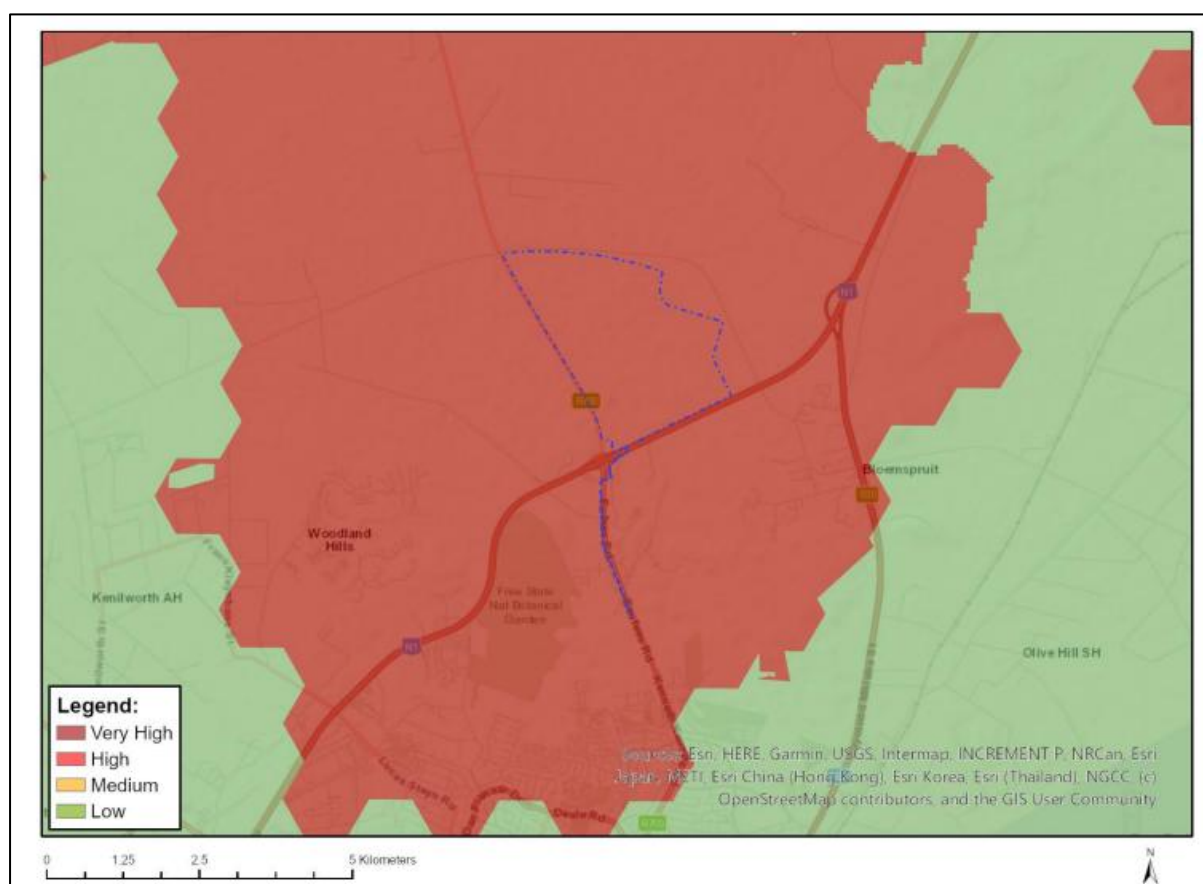


Figure 13: Image from Screening Tool identifying Terrestrial Biodiversity theme sensitivity for the development.

Table 11: Terrestrial Biodiversity Theme Sensitivity Features.

Sensitivity	Feature(s)
Very High	ESA 1
Very High	ESA 2
Very High	FEPA Subcatchment
Very High	Woodland Hills Golf and Wildlife Estate

Findings:

The screening tool identifies this theme as having a 'Very High' sensitivity, as the area falls within an ESA1 and ESA2, a FEPA subcatchment, and is in close proximity to the Woodland Hills Golf and Wildlife Estate.

Motivation for inclusion:

A Terrestrial Biodiversity Specialist Assessment is warranted due to the 'Very High' sensitivity assigned to the study area by the screening tool. This rating is attributed to the presence of Ecological Support Areas (ESA1 and ESA2), its location within a FEPA subcatchment, and its proximity to the Woodland Hills Golf and Wildlife Estate. These environmental features indicate the potential presence of sensitive terrestrial habitats and ecological corridors that

may support protected or conservation-priority species. The assessment will therefore be required to characterise existing habitat conditions, identify species of conservation concern, and evaluate potential direct and indirect impacts associated with the proposed development. The findings will be incorporated into the BAR.

3. Specialist Assessments

It is important to note that specialist involvement is needed when the environment could be significantly affected by the proposed activity, where that environment is valued by, or important to society, and/or where there is insufficient information to determine whether impacts would be significant.

The scope of specialists' contribution (if required) depends on the nature of the project, the environmental context of the site, and the amount of available information (SANBI datasets, input from specialists, Screening Tool) and does not always entail detailed studies or assessment of impacts (Source: Guideline for the review of specialist input in EIA processes, 2005).

Based on the selected classification and broad environmental sensitivities of the construction footprint, the following list is a summary by the EAP of the studies identified in the Screening Tool:

Table 12: Summary of SSVR Findings:

Specialist Study	Specialist Study Commissioned	Motivation
Agriculture Theme	NO	The linear nature of the proposed development limits both the spatial extent of the footprint and the duration of disturbance, with affected areas expected to be rehabilitated following construction. The area is also experiencing rapid development, prioritising future residential and associated infrastructure development rather than long-term agricultural use. In consideration of the anticipated low environmental and agricultural risk associated with the activity, an Agricultural Impact Assessment is not considered necessary.
Animal Species Theme	NO	A specialist animal species

		assessment is not deemed necessary as the associated pipeline will be constructed underground, resulting in only temporary disturbance during the construction phase and no long-term impacts on habitat availability. Nevertheless, both an aquatic impact assessment and a terrestrial ecological assessment will be undertaken for the project.
Aquatic Biodiversity Theme	YES	An Aquatic Biodiversity Impact Assessment will be conducted to confirm sensitivities, assess potential impacts, and provide mitigation measures. Will be provided within the BAR
Archaeological And Cultural Heritage Theme	YES	A HIA will be conducted to confirm or dispute the screening tool outcome and identify cultural/archaeological resources. Will be provided within the BAR
Civil Aviation Theme	NO	The screening tool flagged 'High' Sensitivity. The proposed development poses no risk to civil aviation components.
Defence Theme	NO	The screening tool flagged 'Very High' Sensitivity. The proposed development poses no risk to national defence installations. No Defence Assessment required.
Palaeontology Theme	YES	The screening tool flagged 'Very High' Sensitivity. An HIA will be conducted to confirm or dispute the screening tool outcome and provide mitigation if fossil resources are found. This will be provided within the BAR.
Plant Species Theme	NO	The screening tool indicates a 'Low' sensitivity for this theme. Despite this classification, an Ecological Impact

		Assessment will be undertaken and the findings will be included in the BAR.
Terrestrial Biodiversity Theme	YES	An Ecological Impact Assessment will be undertaken to assess potential impacts on biodiversity and to provide appropriate mitigation recommendations. The findings of the assessment will be included in the BAR.

4. Site Photos

Table 13: Drone photos of the site

