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SITE SENSITIVITY VERIFICATION REPORT

**Provision of non-motorised and public
transport facilities and improvements of
intersections on National Route N18 -
Section 3 from km30.0 to km48.6, N18 -
Section 5 from km38.0 to km42.0 and N18 -
Section 6 from km25.0 to km 38.20, in
North-West Province**

Report No: 24020-46-Rep-001

Compiled on behalf of:

Department of Forestry, Fisheries and the
Environment
Chief Director: Integrated Environmental
Authorisations
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Project Title **Provision of non-motorised and public transport facilities and improvements of Intersections on National Route N18 - Section 3 km30.0 to km48.6, N18 - Section 5 km38.0 to km42.0 and N18 Section 6 km25.0 to km 38.20, North West Province**

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EXECUTIVE SUMMARY

Zitholele Consulting (Pty) Ltd (Zitholele) was appointed by Experts on the Go on behalf of South African National Roads Agency SOC Limited (SANRAL) to provide environmental services for the proposed improvement of three sections along the N18 i.e., Section 3 from km 30.0 to km 48.6, Section 5 from km 38.0 to km 42.0 and Section 6 from km 25.0 to km 38.20, in North West Province. Section 3 falls within the Naledi Local Municipality of the Dr Ruth Segomotsi Mompati District Municipality. Section 5 occurs within the Ratlou Local Municipality of the Ngaka Modiri Molema District Municipality and Section 6 occurs within the Mahikeng Local Municipality, which also occurs in the Ngaka Modiri Molema District Municipality.

The Applicant, South African National Roads Agency SOC Limited (SANRAL) plans to upgrade three sections of the N18 highway from Vryburg to Mahikeng, North West Province. The project aims to enhance community development, improve safety for vehicles and pedestrians, and upgrade transportation infrastructure by adding Non-Motorized Transport (NMT) and public transport facilities. Key improvements include access management, safety enhancements like fencing and walls, and geometric improvements at intersections.

As indicated above, the three sections along the N18 that will be upgraded, are as follows:

- N18, Section 3 from km30.0 to km48.6
- N18, Section 5 from km38.0 to km42.0
- N18, Section 6 from km25.0 to km38.2

The project will incorporate access management and incorporates measures like fencing and brick wall construction to bolster safety and clearly define the SANRAL road reserve boundaries. The study area utilised for the environmental screening assessment was taken as the 40m wide corridor from the centre line of the existing N18, as provided to Zitholele Consulting in the form a Google Earth Kmz file.

A desktop assessment of the environmental sensitivities and features of the development site was undertaken through assessment of existing national and regional scale GIS information and layers.

Several sections along the N18 earmarked for improvement, according to the North West Biodiversity Conservation Plan (C-Plan), fall within the Critical Biodiversity Area (CBA) 1 and 2 and the Ecological Support Area (ESA) 1 and 2. The ecological sensitivity of the study area will be confirmed by the Terrestrial Biodiversity Impact Assessment that will be undertaken by a Terrestrial Ecologist. This study will also cover the faunal assemblages occurring within the study area.

In some areas along the proposed intersection upgrades for N18 - Section 3, there are wetlands/drainage lines located close to the study area (DFFE Screening Tool Report, 2024).

Along N18 - Section 5, there are Freshwater Ecosystem Priority Area (FEPA) subcatchment, rivers, and wetlands i.e. Eastern Kalahari Bushveld Bioregion (Valley-bottom) that may be traversed, or will be located close to the proposed road improvements (DFFE Screening Tool Report, 2024).

Along the N18 - Section 6, there are rivers and various valley bottom wetlands and seep wetlands of the Dry Highveld Grassland, as well as valley bottom wetlands of the Eastern Kalahari Bushveld bioregions that may be traversed or is located close to the proposed road improvements.

Therefore, a Wetland/Aquatic Impact Assessment will be undertaken to verify the presence of any watercourses within the 500m regulated area that will be impacted by the proposed road improvements.

A legal mandate requires that an Environmental Authorization (EA) must be obtained through a Basic Assessment (BA) procedure for the intended improvement of the N18, as several listed activities of the Environmental Impact Assessment (EIA) Regulations of 2014 (as amended) of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, are triggered.

The Department of Forestry, Fisheries, and the Environment (DFFE) is the Competent Authority for the BA process. Additionally, the Department of Water and Sanitation (DWS) necessitates a General Authorization (GA) under Sections 21 (c) and 21 (i) of the National Water Act, 1998 (Act No. 36 of 1998) for water use activities related to the proposed upgrade for SANRAL as a designated applicant. A Risk Assessment Matrix (RAM) is to be compiled by a South African Council of Natural and Scientific Professions (SACNASP) Registered Wetland Ecologist to determine the risk category of the proposed road improvements on the wetlands occurring within the 500m radius of the proposed road improvements. Therefore, a Wetland/Aquatic Impact Assessment be undertaken.

The presence of heritage and paleontological resources will be confirmed by an Archaeological and Palaeontological Impact Assessment, respectively.

Crop farming and pastoral practises were not observed along the study area, however, an Agricultural Compliance Statement/Agricultural Impact Assessment will be undertaken to confirm the impacts on any potentially high soil / agricultural resources. The study area falls within urban or peri-urban areas, therefore, the EAP suggests low sensitivity rating during the site verification assessment.

Several specialist studies have been identified to evaluate the potential improvement of the N18 on the receiving biophysical and socio-economic environment by the DFFE Screening Tool.

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LIST OF ACRONYMS

C-Plan	Conservation Plan
CBA	Critical Biodiversity Area
CR	Critically Endangered
DFFE	Department of Forestry, Fisheries and the Environment
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
ESA	Ecological Support Area
FEPA	Freshwater Ecosystem Priority Area
NPAES	National Protected Areas Expansion Strategy
NMT	Non-Motorised Transport
RAM	Risk Assessment Matrix
SANRAL	South African National Roads Agency Limited
SAHRA	South African Heritage Resource Agency
SACNASP	South African Council for Natural and Scientific Professions
ZC	Zitholele Consulting

1 INTRODUCTION

Zitholele Consulting (Pty) Ltd (Zitholele) was appointed by Experts on the Go Consulting Engineers, on behalf of SANRAL, to provide Environmental Services i.e. a Basic Assessment for the proposed improvement of three sections along the N18, i.e. Section 3 from km 30.0 to km 48.6, Section 5 from km 38.0 to km 42.0 and Section 6 from km 25.0 to km 38.20, in North West Province. Section 3 falls within the Naledi Local Municipality, of the Dr Ruth Segomotsi Mompati District Municipality. Section 5 occurs within the Ratlou Local Municipality of the Ngaka Modiri Molema District Municipality and Section 6 occurs within the Mahikeng Local Municipality, which also occurs in the Ngaka Modiri Molema District Municipality.

The N18 route serves as a mobility corridor and provides a continuous network to accommodate non-local and long-distance traffic through the North West Province into the Northern Cape. The N18 route also provides regional accessibility for the north-south strip of scattered developments and settlements along the N18 corridor in the North West province.

2 PROJECT BACKGROUND

The South African National Roads Agency SOC Limited plans to upgrade three sections of the N18 highway from Vryburg to Mahikeng, North West Province. The project aims to enhance community development, improve safety for vehicles and pedestrians, and upgrade transportation infrastructure by adding Non-Motorized Transport (NMT) and public transport facilities. Key improvements include access management, safety enhancements like fencing and walls, and geometric improvements at intersections.

There are three sections along the N18 that will be upgraded, as follows:

- N18, Section 3 from km30.0 to km48.6
- N18, Section 5 from km38.0 to km42.0
- N18, Section 6 from km25.0 to km38.2

Each section currently consists of a two-lane road with narrow shoulders, flat terrain, and mixed land use. Specific upgrades include pedestrian crossings, public transport provisions, sidewalks, and traffic calming measures. Construction will adhere to SANRAL standards, focusing on widening without altering vertical alignment. Ancillary features such as road markings, signs, guardrails, and fencing will be installed as needed. Materials will primarily come from local quarries due to unsuitable local borrow pits.

A Basic Assessment Process will be undertaken for the proposed road improvements for the N18-Section 3, N18-Section 5 and N18-Section 6 as there are listed activities of Listing Notice 1 and 3 of the Environmental Impact Assessment Regulations of 2017 (as amended) that will be triggered for the proposed improvements.

While some of the proposed road improvements will occur within the SANRAL road reserve, there will be some areas where new properties will be acquired for a new road reserve.

(a) N18 Section 3 from km30.0 to km48.6 existing road conditions:

The following applies to the existing road conditions along N18, Section 3:

- Two-lane single carriageway road with 3.5m lanes
- Surfaced shoulder widths <1m wide
- Edge beams
- No climbing lanes provided throughout the sections
- Flat terrain and road profile
- No major structures
- Existing Huhudi township occurs adjacent to the road
- Two new townships (potentially 8000 stands) are proposed in the area

(b) N18 Section 5 from km38.0 to km42.0 existing road conditions:

The following applies to the existing road conditions along N18, Section 5:

- Two-lane single carriageway road with 3.5m lanes
- Surfaced shoulder widths <1m wide
- Edge beams
- No climbing lanes provided throughout the sections
- Flat terrain and road profile
- One bridge crossing over a river – Used by cars and pedestrians
- Land use is mixed

(c) N18 Section 6 from km25.0 to km38.2 existing road conditions:

The following applies to the existing road conditions along N18, Section 6:

- Two-lane single carriageway road with 3.5m lanes
- Surfaced shoulder widths <1m wide
- Edge beams
- No climbing lanes provided throughout the sections
- Flat terrain and road profile
- No major structures
- Land use is mixed

The project aims to address several key objectives, including community development, enhancing safety for both vehicular traffic and pedestrians along the N18, and improving transportation infrastructure by providing Non-Motorized Transport (NMT) and public transport facilities. Additionally, the project focuses on access management, and includes provisions for fencing and brick wall construction to further enhance safety and delineate boundaries effectively.

3 DESCRIPTION OF PROPOSED DEVELOPMENT

3.1 Project Location

3.1.1 N18, Section 3 (km 30.00 and end at km 48.60)

The N18-Section 3 occurs within Wards 3, 4, 5, 6, and 8 of the Naledi Local Municipality of the Dr. Ruth Segomotsi Mompati District Municipality in the Northwest Province. This section is crossed by numerous local access routes, to small towns and settlements such as Huhudi and Tiger Kloof, along the N18.

Refer to the locality of the N18 – Section 3 in Figure 1. Refer to Figure 2 for the proposed intersections and accesses to be upgraded.

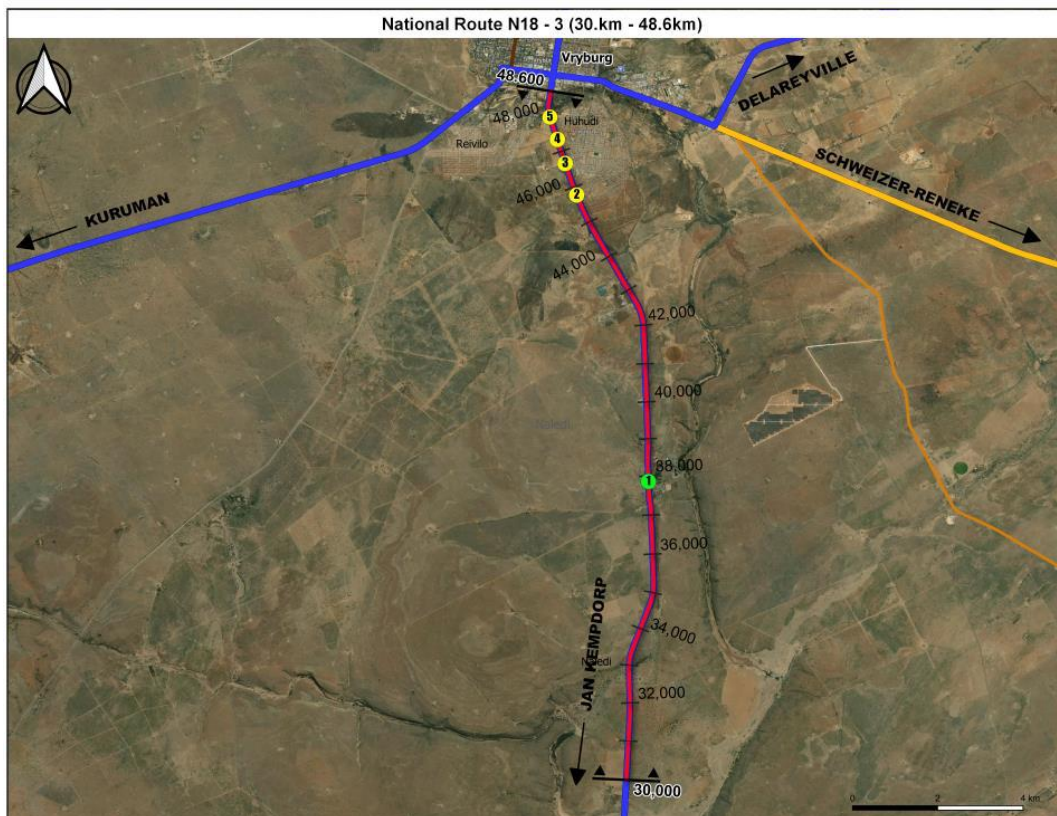


Figure 1: Locality Map of the N18 – Section 3

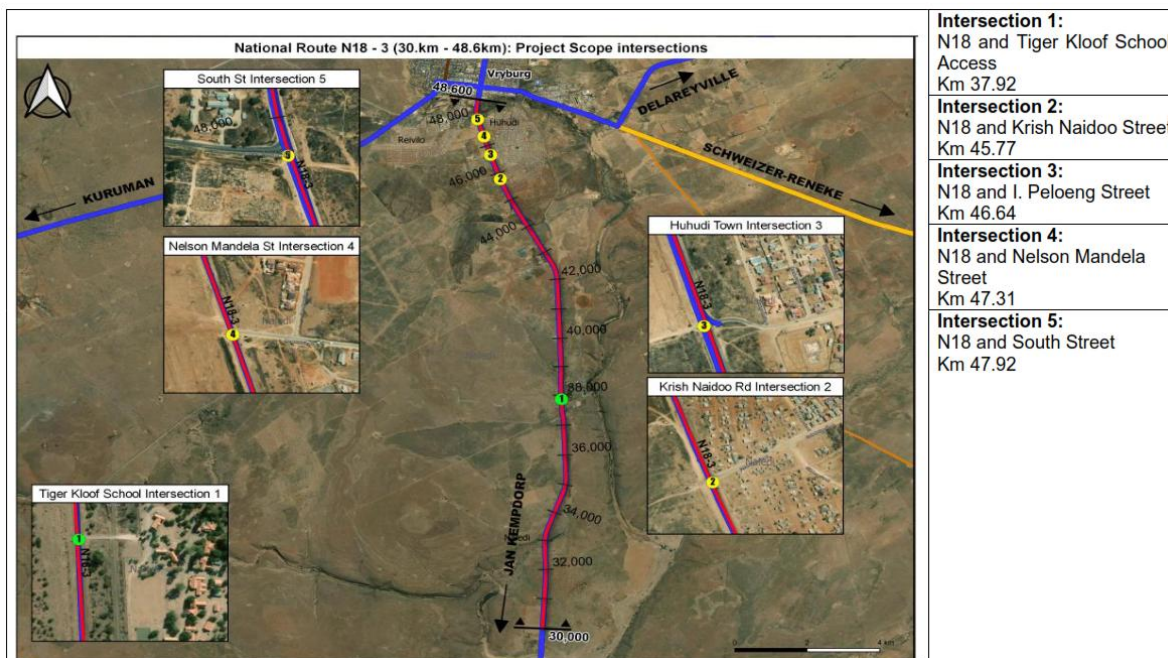


Figure 2: Locality Map of the N18 – Section 3 Intersections and Accesses

3.1.2 N18, Section 5 (km 38.00 and end at km 42.0)

The N18-Section 5 occurs within Wards 5 and 13 of the Ratlou Local Municipality of the Ngaka Modiri Molema District Municipality in the Northwest Province. This section is crossed by numerous local access routes, to small towns and settlements such as Setlagole, Thutlwane, Shaleng and Motlhokaditse, along the N18.

Refer to the locality of the N18 – Section 5 in Figure 3. Refer to Figure 4 for the proposed intersections to be upgraded.

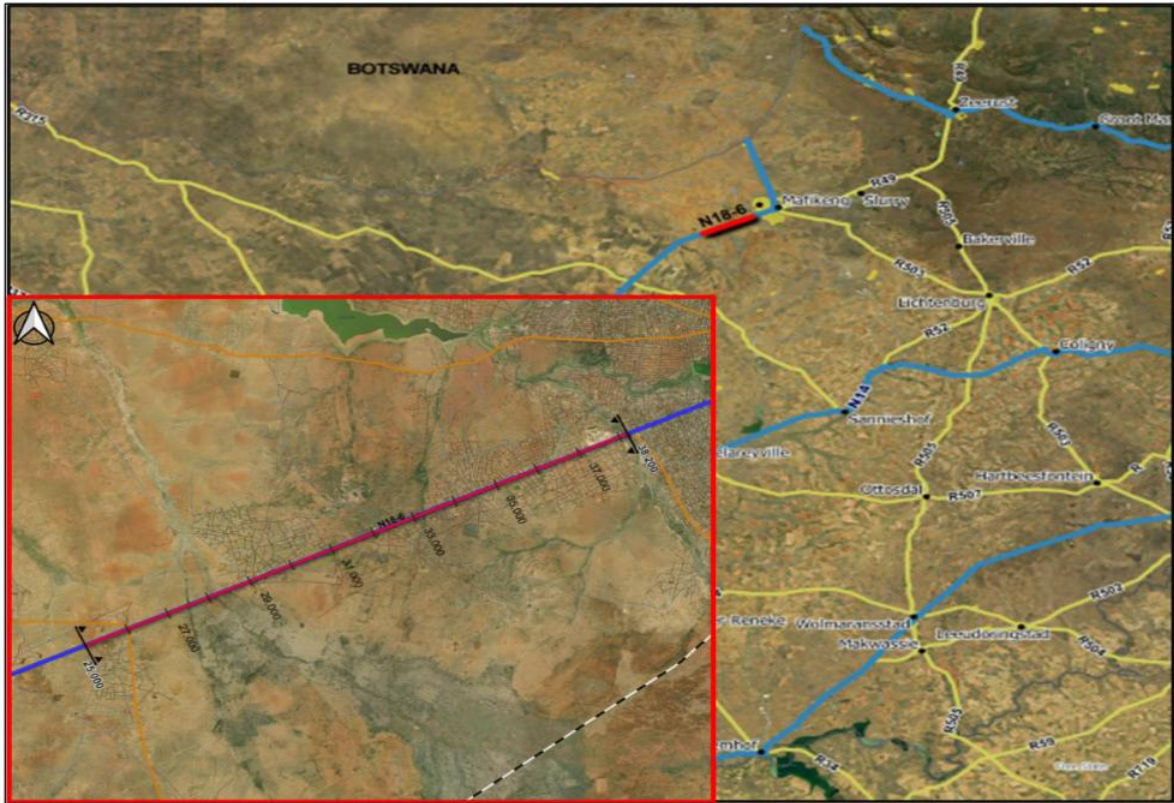


Figure 3: Locality Map of the N18 – Section 5

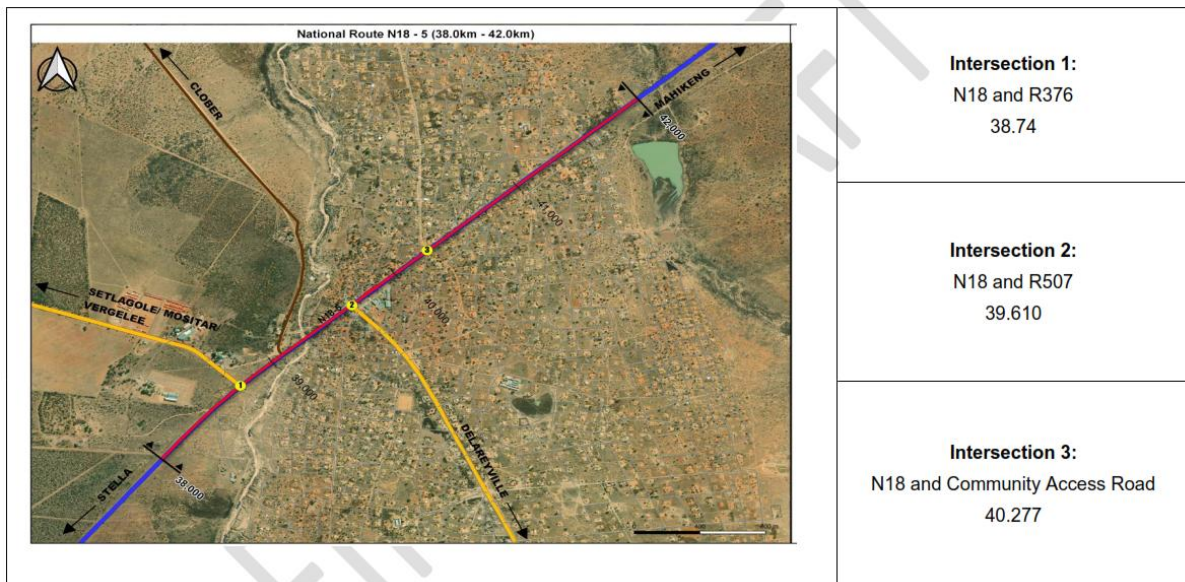


Figure 4: Locality Map of the N18 – Section 5 Intersections

3.1.3 N18, Section 6 (km 25.00 and end at km 38.20)

The N18-Section 6 occurs within Wards 1, 22, 26 and 34 of the Mafikeng Local Municipality of the Ngaka Modiri Molema District Municipality in the Northwest Province. This section is crossed by numerous local access routes, to small towns and settlements such as Magogoe, Matsoseng, Kwamukubung, Ratau and Madibe, along the N18.

Refer to the locality of the N18 – Section 6 in Figure 5. Refer to Figure 6 for the proposed intersections to be upgraded.



Figure 5: Locality Map of the N18 – Section 6

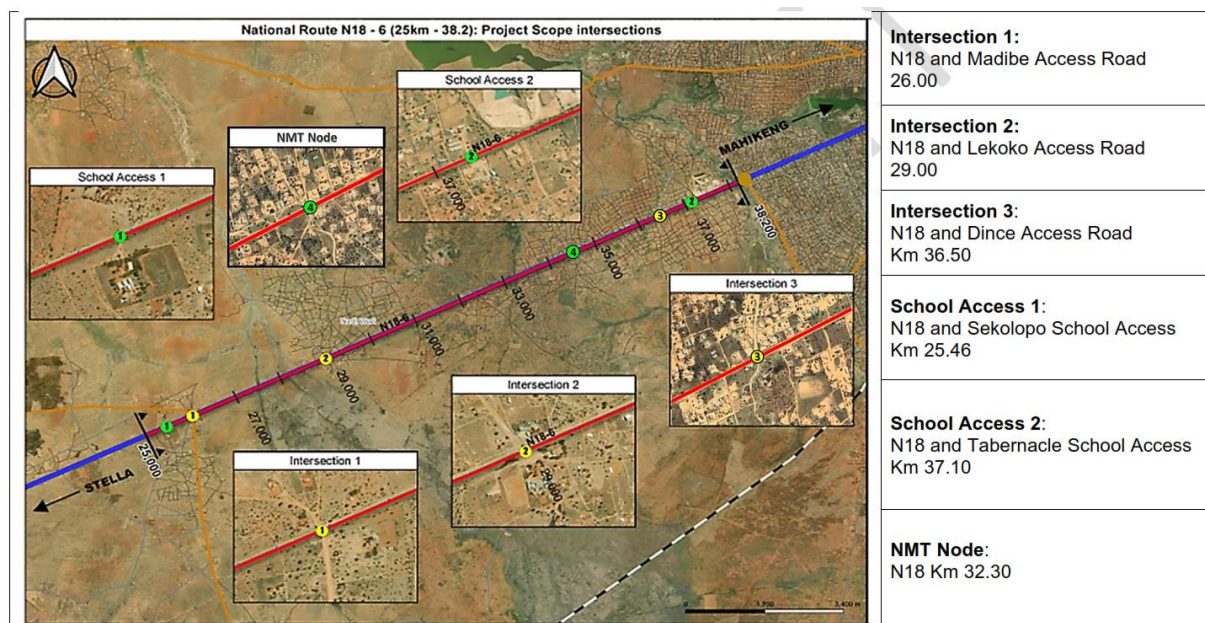


Figure 6: Locality Map of the N18 – Section 6 Intersections and Accesses

3.2 Project Descriptions

3.2.1 N18, Section 3 (km 30.00 and end at km 48.60)

The following intersections will be upgraded:

- Tiger Kloof School Intersection with N18
- Krish Naidoo Intersection with N18
- I. Peloeng Intersection with N18
- Nelson Mandela Intersection with N18
- South Street Intersection with N18

In addition to the above, there will be the following improvements:

- Provision for pedestrian crossings
- Provision for public transport facilities
- Culverts will be upgraded/extended in situ to accommodate the intersection upgrades
- Provision for sidewalks along intersections
- Provision of traffic calming (e.g. rumble strips, reduction of speed, road signage)

3.2.2 N18, Section 5 (km 38.00 and end at km 42.0)

The following intersections were identified for upgrading, in order to improve pedestrian and motorist safety along the N18-5.

- Existing 3-way intersection with road R376 (N18-5 km 38.74)
- Existing 3-way intersection with gravel access road leading to the Setlagole Police Station (N18-5 km 39.10). It was subsequently decided to close this intersection due to substandard intersection spacing.

- Existing bridge along the N18 at km 39.189. A new walkway is proposed on the existing bridge, with no geometric changes.
- Existing 3-way intersection with road R507 (N18-5 km 39.66)
- Existing 4-way intersection with community access roads (N18-5 km 40.28)

To accommodate the proposed intersection upgrades and allow for stormwater drainage, the existing culverts will be upgraded.

In addition to the above, there will be the following:

- Provision for pedestrian crossings
- Provision for public transport facilities
- Provision for sidewalks along intersections
- Provision of traffic calming (e.g. rumble strips, reduction of speed, road signage)

There are illegal businesses operating within the SANRAL road reserve on the N18 – Section 5. SANRAL intends to compensate these illegal traders and close off the road reserve by the installation of appropriate fencing.

3.2.3 N18, Section 6 (km 25.00 and end at km 38.20)

The following intersections will be upgraded:

- Intersection 1: N18 and Madibe access road at km26.0
- Intersection 2: N18 and Lekoko access road at km 29.0
- Intersection 3: N18 and Dince access road at km36.50
- School access 1 at N18 and Sekolopo School Access at km 25.46
- School access 2 at N18 and Tabernacle School Access at km 37.10
- NMT node at km32.20

For the final recommended cross section of the road, the following options are proposed:

- The approach to each of the intersections are designed with a single carriageway one lane in each direction cross section. The lane width will be increased from 3.5m to 3.7m on each approach.
- At the intersections lane widths will be as per the SANRAL standard for a Class 1 T-junction or intersection. This will include 3.7m wide lanes in the through direction, 3.5 wide dedicated turning lanes and a 5m wide slip lane into the joining roads.
- A surfaced paved shoulder of 3.0 meters will be provided on each side of the road to allow for emergencies and safe manoeuvring.
- 1.5m side sidewalks will be provided on one side of the carriageway except for at the intersections where sidewalks on both sides will be provided.
- Bus/Taxi stops, designed to SANRAL's standards are provided at the intersections. The width of the bus bay is 3.5m.
- 2.5m wide gravel shoulders will be provided on the joining access roads.

Some accesses will be closed off as access off a National Road is not allowed. A brick wall may be installed to close off the accesses along the N18. Some accesses that are not compliant will remain open.

In addition to the above, there will be the following:

- Provision for pedestrian crossings
- Provision for public transport facilities.
- Provision for sidewalks along intersections

4 DFFE SCREENING TOOL REQUIREMENTS

In terms of GN R 960 (promulgated on 5 July 2019) and Regulation 16(1)(b)(v) of the 2014

EIA Regulations (as amended), the submission of a Screening Report generated from the DFFE's national web based environmental screening tool (<https://screening.environment.gov.za>) is compulsory for the submission of applications in terms of Regulation 19 and 21 of the 2014 EIA Regulations.

The screening tool assessments were undertaken for the project study area. the Screening Tool Reports for the proposed road improvements for the following was generated:

- N18-Section 3
- N18-Section 5
- N18-Section 6

The results of the screening tool assessments for the various themes are presented in Tables 1-3.

Table 1: Themes identified by the DFFE Screening Tool for N18-Section 3

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture Theme		X		
Animal Species Theme			X	
Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme	X			
Civil Aviation Theme		X		
Defense Theme				X
Paleontology Theme	X			
Plant Species Theme				X
Terrestrial Biodiversity Theme	X			

Table 2: Themes identified by the DFFE Screening Tool for N18-Section 5

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture Theme		X		
Animal Species Theme				X
Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme				X
Civil Aviation Theme		X		
Defense Theme				X
Paleontology Theme			X	
Plant Species Theme				X
Terrestrial Biodiversity Theme	X			

Table 3: Themes identified by the DFFE Screening Tool for N18-Section 6

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture Theme		X		
Animal Species Theme				X
Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme				X
Civil Aviation Theme		X		
Defense Theme				X
Paleontology Theme		X		
Plant Species Theme				X
Terrestrial Biodiversity Theme	X			

5 SPECIALIST ASSESSMENT IDENTIFICATION

According to the Screening Tool Report, the following Specialist Assessments were identified and recommended to be undertaken as part of the environmental process for N18-Section 3:

- Agricultural Impact Assessment
- Landscape/Visual Impact Assessment
- Archaeological and Cultural Heritage Impact Assessment
- Palaeontology Impact Assessment
- Terrestrial Biodiversity Impact Assessment
- Aquatic Biodiversity Impact Assessment
- Noise Impact Assessment
- Traffic Impact Assessment
- Geotechnical Assessment
- Socio-Economic Assessment
- Ambient Air Quality Assessment
- Plant Species Assessment
- Animal Species Assessment

According to the Screening Tool Report, the following Specialist Assessments were identified and recommended to be undertaken as part of the environmental process for N18-Section 5:

- Agricultural Impact Assessment
- Landscape/Visual Impact Assessment
- Archaeological and Cultural Heritage Impact Assessment
- Palaeontology Impact Assessment
- Terrestrial Biodiversity Impact Assessment
- Aquatic Biodiversity Impact Assessment
- Noise Impact Assessment
- Traffic Impact Assessment
- Geotechnical Assessment
- Socio-Economic Assessment
- Ambient Air Quality Assessment
- Plant Species Assessment
- Animal Species Assessment

According to the Screening Tool Report, the following Specialist Assessments were identified and recommended to be undertaken as part of the environmental process for N18-Section 6:

- Agricultural Impact Assessment
- Landscape/Visual Impact Assessment
- Archaeological and Cultural Heritage Impact Assessment
- Palaeontology Impact Assessment
- Terrestrial Biodiversity Impact Assessment
- Aquatic Biodiversity Impact Assessment
- Noise Impact Assessment
- Traffic Impact Assessment
- Geotechnical Assessment
- Socio-Economic Assessment
- Ambient Air Quality Assessment
- Plant Species Assessment
- Animal Species Assessment

In accordance with the Procedures for the Assessment and Minimum Criteria for Reporting on identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of NEMA, this Site Sensitivity Verification Report (SSRVR) has essentially been compiled to provide a rationale for the Specialist Studies undertaken as part of the Basic Assessment Process.

6 SITE SENSITIVITY VERIFICATION METHODOLOGY

The EAP team undertook a site visit along the study area for N18-Section 3, N18-Section 5 and N18-Section 6, on 4 June 2024. Refer to the site photos in Photoplates 1 to 3. The site findings were compared to the findings of the various themes of the Screening Tool Report.

6.1 Desktop Analysis

The study area is situated in the North West Province, of South Africa. The sections that are proposed for upgrade fall within the Naledi Local Municipality, Ratlou Local Municipality and Mahikeng Local Municipality.

According to the web-based Screening Tool Report by the DFFE, the wetlands and aquatic sensitivity analysis for the N18 – Section 3 indicates low sensitivity for most of the study area, with the exception of areas along the study area falling within the Ecological Support Area (ESA) 1, ESA 2, rivers, and wetlands of the Eastern Kalahari Bushveld Bioregion (Seep), which exhibit very high sensitivity. In some areas along the proposed intersection upgrades, there are wetlands/drainage lines located close to the study area.

Section 5 along the N18 similarly shows low sensitivity for some sections along the route, with very high sensitivity identified for the areas falling within the Critical Biodiversity Area (CBA) 1, CBA 2, ESA 1, ESA 2, Freshwater Ecosystem Priority Area (FEPA) Subcatchment, rivers, and wetlands i.e. Eastern Kalahari Bushveld Bioregion (Valley-bottom).

In Section 6 along the N18, there are some areas having low sensitivity in terms of the wetland/aquatic features. However, here are also some areas falling within the ESA 1, ESA 2, rivers and there are various valley bottom wetlands and seep wetlands of the Dry Highveld Grassland, as well as valley bottom wetlands of the Eastern Kalahari Bushveld bioregions, which demonstrate very high sensitivity that occur within Section 6. These findings highlight critical areas of concern for conservation and management strategies in the studied regions.

Along the N18, Section 3 this sections falls within an area of very high terrestrial biodiversity, as majority of the areas for improvement, occurs within CBA 2, ESA 1, ESA 2, and the National Protected Area Expansion Strategy (NPAES). These areas show very high sensitivity.

Along the N18, Section 5, according to Terrestrial Biodiversity features present, there are some areas having low sensitivity, with very high sensitivity identified for the FEPA Subcatchment.

In Section 6, along the N18, the terrestrial biodiversity features generally show low sensitivity, however, the areas falling within the CBA 2, ESA 1, NPAES, and the Endangered Western Highveld Sandy Grassland exhibit very high sensitivity.

According to the Screening Tool Report, N18 - Section 3 has a high sensitivity theme for agriculture, as there are some areas falling within features consisting annual crop cultivation/plant pastures rotation.

The DFFE Screening Tool Report, 2024 indicates that N18 – Section 5 falls within the land capability area of moderate – high. However, there were no cultivated areas observed during the site visit. The Screening Tool Report did not identify an Agricultural Assessment as a Specialist Study to be undertaken for N18 – Section 5.

As per the DFFE Screening Tool Report, N18 - Section 6 falls within a moderate to high agricultural sensitivity area. The Screening Tool Report further adds that the agricultural sensitivity is high, due to annual crop cultivation/plant pastures rotation and subsistence farming. During the site visit, there were no observations of cultivation and pastures along the sections of the proposed intersection upgrades. The Screening Tool Report did not identify an Agricultural Assessment as a Specialist Study to be undertaken for N18 – Section 6.

In terms of the archaeological and cultural heritage theme, (DFFE Screening Tool Report, 2024), Section 3 falls within a high and very high archaeological sensitivity area. Section 5 occurs within a low sensitivity area and Section 6 occurs within a very high sensitivity area. According to the National Heritage Resources Act, 1999 (Act No. 25 of 1999), Section 38 (Heritage Impact Assessments) application to the South African Heritage Resources Agency (SAHRA) is required when the proposed development triggers a) the construction of a road, or other similar form of linear development exceeding 300m in length. As the intersection upgrades will be more than 300m in length, an Archaeological and Cultural Heritage Impact Assessment / Exemption form undertaking an HIA, will be undertaken for the N18 – Sections 3, 5 and 6 road improvements.

According to the palaeontological theme, (DFFE Screening Tool Report, 2024) Section 3 occurs within a very high, high and medium palaeontological sensitive area. Section 5 occurs in a medium palaeontological sensitive area and Section 6 occurs in a low, medium and high palaeontological sensitive area. The Palaeontologist will determine if a Palaeontological Impact Assessment or an exemption from undertaking a Palaeontological Impact Assessment would be required, by generating the fossil sensitivity map. This map will determine the different levels of the estimated palaeontological sensitivity, as this is an important step forward in the proactive management of palaeontological and geological heritage resources. The map will guide and assist developers, heritage officers and practitioners in screening paleontologically sensitive areas at the earliest stages of the development cycle.

6.2 Site Assessment

The EAP team undertook a site visit along the study area on 04 June 2024.

Based on site observations and information from the Design Engineers, the presence of illegal businesses is noted along the N18 – Section 5 SANRAL road reserve. Upgrading sections of this route will likely impact these illegal businesses, as the installation of barriers (such as walls) will

hinder their operations. Furthermore, the residents have created illegal accesses off the N18. Barriers will be placed along the N18 to close of the illegal accesses. SANRAL will compensate these illegal businesses as part of a separate process.

There will be closure/relocation of some the access roads along the N18 that do not meet spacing requirements. This will be dealt with as part of a separate process i.e. the Access Management Plan to be addressed by the Design Engineers. The Access Management Plan will inform the specific accesses to be closed, and the long-term solution for road users to access the N18, safely.

The affected landowners will be contacted regarding the potential closure of the accesses by the Engineering Team. Access to their respective properties during the construction period will be obtained from existing formalised access to their properties through the existing road network.

This Site Sensitivity Verification Report has used the information collected by the EAP, to confirm or dispute (as may be applicable) the environmental sensitivity ratings identified by the National Screening Tool (see Tables 1-3). A copy of the Screening Report is attached as Appendix B of the Site Sensitivity Verification Report. The Specialist Assessments/Theme and sensitivity ratings identified by the Screening Tool are summarised in Tables 4-6.

The areas where the upgrade and construction activities have been proposed, were visited by the team and onsite observations and conditions were recorded. The observations from the on-site assessment are summarised in Photoplates 1, 2 and 3 for N18 Sections 3, 5 and 6, respectively.

N18- Section 3



N18 and South Street intersection at Km 47.92 to be upgraded.



Intersection of N18 and Nelson Mandela Street at Km 47.31 to be upgraded.



Intersection of N18 and Nelson Mandela Street at Km 47.31 to be upgraded. Vegetation to be removed as part of the intersection upgrade. The type of vegetation and the presence of a wetland is to be determined by a SACNASP registered Ecologists (Terrestrial and Aquatic/Wetland).



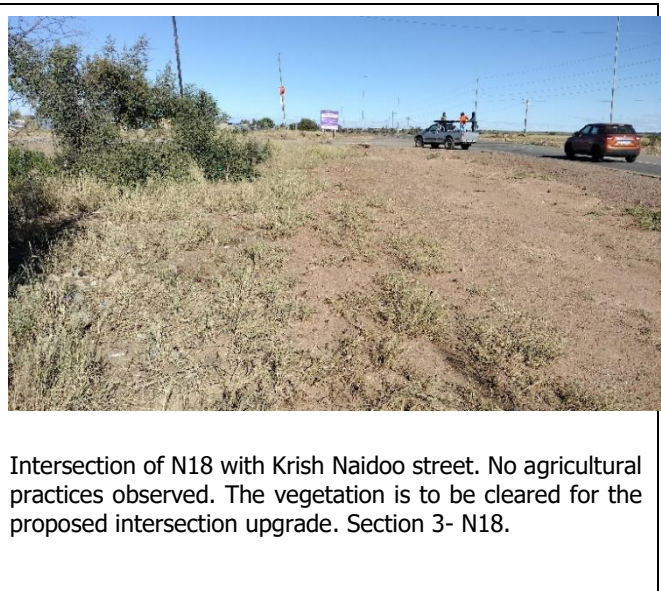
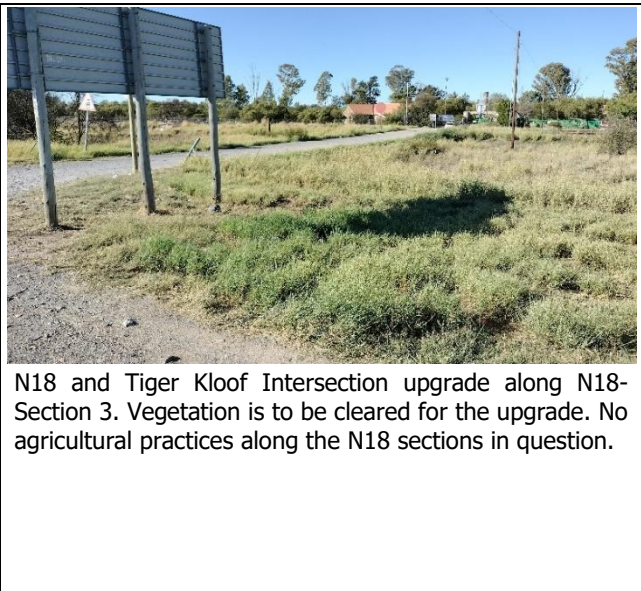
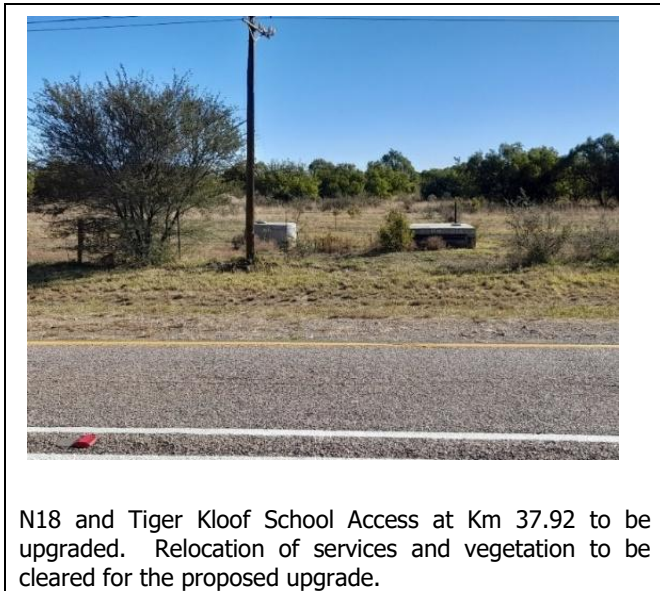
Intersection of N18 and Krish Naidoo Street at Km 45.77 to be upgraded.



Intersection of N18 and Krish Naidoo Street to be upgraded. Huhudi Settlement near the above intersection.



N18 and Tiger Kloof School Access at Km 37.92 to be upgraded.



Photoplate 1: N18 – Section 3 Road Improvements

N18- Section 5		
		
<p>There are illegal businesses operating within the SANRAL road reserve on the N18 – Section 5. SANRAL intends to compensate these illegal traders and close off the road reserve by the installation of appropriate fencing.</p>	<p>Pedestrian pathway along N18-Section 5 to be established along the existing bridge (note there will be no structural/geometric changes to the bridge). Road markings will be placed for safe pedestrian passage on the existing bridge.</p>	<p>N18, Section 5 at R376 intersection (km 38.74) to be upgraded.</p>
		
<p>Vegetation to be removed as part of the proposed upgrade to the N18 – Section 5 at the R376 intersection. Acacia sp. are present within the road reserve to be upgraded.</p>	<p>Existing pipe culvert located at N18 – Section 5 at R376 intersection to be upgraded in situ. Stormwater from this culvert drains into a drainage line.</p>	<p>Intersection at N18 and R376 to be upgraded at Km 38.74 along N18 – Section 5. A drainage line occurs at the culvert that is to be upgraded, in situ.</p>



N18 – Section 5 - N18 and community access road to be upgraded at Km 40.277. No sensitive vegetation along the intersection. The area is transformed.



Intersection to be upgraded along the N18 – Section 5. There are many illegal traders along the road which will affect the upgrade.



Storm water with culverts that are present near the N18 – Section 5. Intersection to be upgraded.

Photoplate 2: N18 – Section 5 Road Improvements

N18- Section 6



Vegetation to be removed along the N18-Section 6 for the upgrade to the N18-Tabernacle School Access Road.



A possible grave at 25°55'46.4"S 25°30'11.8"E (pegged with iron rods) is present at Section 6. This grave was identified by the Tribal Authority having jurisdiction in this area. This possible grave is located within the N18 and Lekoko Access Road km29.00 intersection.



N18 - Section 6 intersection to be upgraded.



A section of the stone wall that exists near the clinic in the vicinity of the N18-Section 6 may need to be removed to allow infrastructure upgrades at the particular intersection. Age of the stone wall to be determined in terms of the National Heritage Resources Act.



Existing culvert at Tabernacle School Intersection with N18 – Section 6 to be upgraded in situ.



No agricultural practices along the N18 – Section 6 (Tabernacle School Intersection upgrade).

Photoplate 3: N18 – Section 6 Road Improvements

7 SITE SENSITIVITY VERIFICATION

This Site Sensitivity Verification Report has considered the information collected by the EAP during a desktop and site assessment, to confirm or dispute (as may be applicable) the environmental sensitivity ratings identified by the National Screening Tool (see Tables 1, 2 and 3). A copy of the Screening Report is attached as Appendix B of the Site Sensitivity Verification Report. The Specialist Assessments/Theme and sensitivity ratings identified by the Screening Tool are summarised in Tables 4 - 6, including the EAP's responses thereto.

Table 4: Specialist Assessments/themes and sensitivity ratings identified by DFFE's web-based Screening Tool

Specialist Assessment	Sensitivity Rating as per Screening Report	Sensitivity Rating as per the EAP / Specialist Verification	Response
Landscape/Visual Impact Assessment	None Provided	Low	<p>A site verification assessment was undertaken by the EAP. Refer to the photos of the site in Photoplate 1.</p> <p>The nature of the development (<i>upgrade to the intersections and establishment of site camps (temporary duration)</i>) will not alter the character, nor sense of place of the study area, as the N18 already exists. Furthermore, visual impacts will only occur during the construction period which will be of a short-term duration. With the implementation of mitigation measures (Section 7.2 of the EMP in Appendix J of the DBAR) to minimise the impacts on a limited number of sensitive receptors, occurring within the study area, the visual character of the site will not be compromised by views by these receptors. A Landscape / Visual Impact Assessment is therefore not deemed necessary.</p>
Agricultural Impact Assessment	High	Section 3, 5 and 6: Low – Disputed by Soils Specialist	A site verification assessment was undertaken by the Soils Specialist. Refer to the Soils/Agricultural

Specialist Assessment	Sensitivity Rating as per Screening Report	Sensitivity Rating as per the EAP / Specialist Verification	Response
		Refer to the detailed responses in the next column.	<p>Compliance Statement in Appendix F1 of the DBAR.</p> <p>The land capability sensitivity (DAFF, 2017) is dominated by land capabilities with “Very Low to Low” and “Low-Moderate to Moderate” with isolated areas with “Moderate High” sensitivity in the N18 Section 5 and 6. High sensitive cropping areas were identified in the N18 Section 6 within the project buffer zone; hence they are segregation to soil resources those areas. The verified baseline findings, current land uses and the calculated land capability concur with the agricultural theme to an extend in areas associated with “Very Low to Low” and Low-Moderate to Moderate” land capability sensitivity. Most areas with “Moderate High” sensitivity were disputed as these areas were transformed from natural and agricultural areas to residential and other activities or marginal mining activities land uses.</p>
Archaeological and Cultural Heritage	Very High	Refer to the detailed responses in the next column for the Specialists verification.	<p>An Archaeological and Cultural Heritage Impact Assessment is provided in Appendix H8 of the DBAR. The Screening Tool Report identified the following:</p> <p>Section 3: Cultural heritage theme is very high Archaeology theme is very high</p> <p>Section 5:</p>

Specialist Assessment	Sensitivity Rating as per Screening Report	Sensitivity Rating as per the EAP / Specialist Verification	Response
			<p>Cultural heritage theme is low Archaeology theme is low</p> <p>Section 6: Cultural heritage theme is low Archaeology theme is low</p> <p>The Specialist's site sensitivity verification assessment indicated the following:</p> <p>Section 3: Cultural heritage theme is very high – confirmed Archaeology theme is low – disputed</p> <p>Section 5: Cultural heritage theme is low – confirmed Archaeology theme is low – confirmed</p> <p>Section 6: Cultural heritage theme is high – disputed (due to the graves adjacent to the N18) Archaeology theme is low – confirmed</p>
<p>Palaeontology Impact Assessment</p>	<p>Very High</p>	<p>Refer to the detailed responses in the next column for the Specialists verification.</p>	<p>The Palaeontological Impact Assessment of the development site and is included in Appendix H9 of the DBAR.</p> <p>The Screening Tool Report identified the following:</p> <p>Section 3: Palaeontology theme is very high</p> <p>Section 5: Palaeontology theme is very medium</p> <p>Section 6: Palaeontology theme is high</p>

Specialist Assessment	Sensitivity Rating as per Screening Report	Sensitivity Rating as per the EAP / Specialist Verification	Response
			<p>The Specialist's site sensitivity verification assessment indicated the following:</p> <p>Section 3: Palaeontology theme – disputed.</p> <p>The Boomplaas Formation of the Ghaap Group (Vmg) is highly sensitive in undisturbed areas due to its stromatolitic and oolitic dolomites, which can contain significant fossil material. However, previous disturbances within the development footprint have rendered any significant fossil discoveries highly unlikely. The sensitivity is therefore rated as Moderate, and a Chance Fossil Find Protocol is proposed.</p> <p>Section 5: Palaeontology theme – disputed.</p> <p>The Goldridge Formation of the Kraaipan Group (Zgr), which consists of banded ironstone, schist, and rhyolite, also has negligible potential for fossil preservation due to its lithological characteristics. As a result, the palaeontological sensitivity is classified as Zero/Insignificant, and no mitigation measures are necessary.</p> <p>Section 6: Palaeontology theme – disputed.</p> <p>The biotite gneiss and associated lithologies of</p>

Specialist Assessment	Sensitivity Rating as per Screening Report	Sensitivity Rating as per the EAP / Specialist Verification	Response
			<p>the Swazian Kraaipan Group (Zg) have realistic potential for fossil preservation due to its geological nature. Therefore the palaeontological sensitivity is classified as Zero/Insignificant.</p>
<p>Terrestrial Biodiversity Impact Assessment</p>	<p>Very High</p>	<p>Refer to the detailed responses in the next column for the Specialists verification.</p>	<p>A Terrestrial Biodiversity Impact Assessment (Floral and Faunal Assessments) of the development site was undertaken and is included in Appendix H6 and H7 of the DBAR.</p> <p>The Screening Tool Report identified the following:</p> <p>Section 3, 5 and 6: Terrestrial Biodiversity theme is very high and low.</p> <p>The Specialist's site sensitivity verification assessment indicated the following:</p> <p>Section 3: Terrestrial biodiversity theme – disputed, as the site was found to have very low sensitivity. The habitat is degraded due to historic and high current anthropogenic activities.</p> <p>Section 5: Terrestrial biodiversity theme – disputed, as the site was found to have very low sensitivity. The habitat is degraded due to historic and high current anthropogenic activities.</p> <p>Section 6: Terrestrial biodiversity theme – disputed, as the site was found to have very low to low sensitivity. The habitat is</p>

Specialist Assessment	Sensitivity Rating as per Screening Report	Sensitivity Rating as per the EAP / Specialist Verification	Response
			degraded due to historic and high current anthropogenic activities and human ingress.
Aquatic Biodiversity Impact Assessment	Very High	Refer to the detailed responses in the next column for the Specialists verification.	<p>An Aquatic Biodiversity Impact Assessment of the development site was undertaken and is included in Appendix H4 of the DBAR.</p> <p>The Screening Tool Report identified the study area to have a very high aquatic biodiversity sensitivity.</p> <p>The Site Verification Assessment was undertaken by an Aquatic Scientist with experience in Aquatic Assessments. The site sensitivity rating according to the Specialist is rated as 'low sensitivity'.</p>
Socio-Economic Assessment	None Provided	Low	<p>The Site Verification Assessment was undertaken by the EAP.</p> <p>A specialist Socioeconomic Impact Assessment is not deemed necessary, due to the limited extent and short-term duration of the proposed project. Potential socio-economic impacts have been addressed in the draft BAR, as appropriate.</p> <p>Assessment as the intersection upgrades will improve the safety needs for all road users. The impacts during the construction phase will be of a short-term duration and a limited extent.</p> <p>There will be closure/relocation of</p>

Specialist Assessment	Sensitivity Rating as per Screening Report	Sensitivity Rating as per the EAP / Specialist Verification	Response
			<p>some the access roads along the N18 that do not meet spacing requirements. This will be dealt with as part of a separate process i.e. the Access Management Plan to be addressed by the Design Engineers. The Access Management Plan will inform the specific accesses to be closed, and the long-term solution for road users to access the N18, safely.</p> <p>The affected landowners will be contacted regarding the potential closure of the accesses by the Engineering Team.</p> <p>Access to their respective properties during the construction period will be obtained through the existing road network.</p> <p>A limited number of jobs will be provided during the construction phase which will be of a short-term duration that will have a positive impact on the local community residing the local municipal area.</p> <p>Comments received during public review of the Draft Basic Assessment Report will be included in the Comments and Responses Report of the Final BAR. Comments received during the public review period will be addressed by the EAP directly with the Interested and Affected Parties (I&APs).</p>

Specialist Assessment	Sensitivity Rating as per Screening Report	Sensitivity Rating as per the EAP / Specialist Verification	Response
Traffic Impact Assessment	None provided	High by the traffic engineer	A Traffic Impact Assessment was undertaken during the Detailed Design Phase to inform the requirement for the road improvements, as well as the traffic recommendations included intersection geometric improvements, provision of sidewalks, pedestrian crossings, signage, fencing, lighting, public transport are included in the Basic Assessment Report.
Geotechnical Assessment	None provided	No foundations will be established – n/a	A Construction Materials Report was undertaken along Sections 3, 5 and 6, which tested in situ pavement layers. No foundations will be established for the road improvements. Commercial sources will be used for the road improvements. Refer to the Construction Materials Report in Appendix F6 of the DBAR.
Noise Impact Assessment	None Provided	Low	Limited noise may be generated during the construction phase that will be of a short-term duration. With the implementation of noise abatement measures, to minimise the impacts on a limited number of sensitive receptors, occurring in proximity to the site where the intersection upgrade will occur area, the significance of noise impacts will be minimised to low. A Specialist Noise Impact Assessment is therefore not deemed necessary due to the short-term duration of the construction activities and the noise mitigation

Specialist Assessment	Sensitivity Rating as per Screening Report	Sensitivity Rating as per the EAP / Specialist Verification	Response
			measures that will be implemented.
Air Quality Impact Assessment	None Provided	Low	There may be air quality impacts (<i>such as dust entrainment</i>) during the construction phase, however, with the implementation of dust suppression measures, this impact will be of low significance and of a short-term duration. Therefore, a specialist Air Quality Impact Assessment is not deemed necessary.
Plant Species Assessment	Low	Refer to the detailed responses in the next column for the Specialists verification.	A Plant Species Assessment was included with the Terrestrial Biodiversity Impact Assessment (Floral Assessment) that has been undertaken and included as Appendix H6 of the DBAR. The Specialist and the Screening Tool sensitivity rating for the plant species theme is low for Sections 3, 5 and 6.
Animal Species Assessment	Low	Refer to the detailed responses in the next column for the Specialists verification.	An Animal /Faunal Species Assessment was included with the Terrestrial Biodiversity Impact Assessment (Faunal Assessment) that has been undertaken and included as Appendix H7 of the DBAR. The Specialist and the Screening Tool sensitivity rating for the animal species theme is low for Sections 3, 5 and 6.

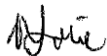
8 CONCLUSION

Based on the outcome of this Site Sensitivity Verification Report, the same specialist studies have been undertaken for N18 – Section 3, Section 5 and Section 6 as follows:

- Agricultural Site Assessment to inform an Agricultural Compliance Statement.
- Archaeological and Heritage Impact Assessment.
- Palaeontological Impact Assessment
- Terrestrial Biodiversity Impact Assessment (Floral and Faunal Assessment)
- Aquatic Compliance Statement and Risk Matrix Assessment (RAM)
- Traffic Impact Assessment (TIA). The TIA will be undertaken as part of the engineering design scope of works.
- Geotechnical Assessment. A Construction Materials Report was undertaken along Sections 3, 5 and 6, which tested in situ pavement layers. No foundations will be established for the road improvements. Commercial sources will be used for the road improvements.

As part of these studies, the Specialists gathered data relevant to identifying and assessing environmental impacts that might occur as a result of the proposed project in their particular field of expertise. They provided baseline information through their site verification assessments and have identified and assessed impacts according to predefined rating scales. The Specialists suggested ways in which negative impacts could be mitigated and benefits could be enhanced. The results of the Specialist Studies were integrated into the draft Basic Assessment Report.

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APPENDIX A: CV's of Project Team

APPENDIX B: DFFE Screening Tool Report