DRAFT BASIC ASSESSMENT REPORT

THE PROPOSED UPGRADE OF NATIONAL ROUTE 2 SECTION 34 BETWEEN VERZAMELING (KM 30.0) AND LEIDEN (KM 60.0)

Prepared for the South African National Roads Agency Soc Limited

October 2022

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Title	**THE PROPOSED UPGRADE OF NATIONAL ROUTE 2 SECTION 34 BETWEEN VERZAMELING (KM30.0) AND LEIDEN (KM 60.0)**
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Reason for Circulation
• Document submitted for comments

Nature of Comments Required
• Any inaccurate observations

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ACRONYMS

BID	Background Information Document
CV	Curriculum Vitae
DFFE	Department of Forestry, Fisheries and the Environment
EAP	Environmental Assessment Practitioner
EAPASA	Environmental Assessment Practitioner Association of SA
EMPr	Environmental Management Programme
I&APs	Interested and Affected Parties
IBA	Important Bird Area(s)
IRR	Internal Rate of Return
PPP	Public Participation Process
NEMA	National Environmental Management Act
NEM:AQA	National Environmental Management: Air Quality Act
NFEPA	National Freshwater Ecosystem Priority Area
PLO	Project Liaison Officer
SANRAL	South African National Roads Agency Soc Limited

1. DETAILS OF EAP AND EXPERTISE

This report was prepared by Dr Josephine Bothma from Chameleon Environmental.

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a. The qualifications of the EAP

Dr Josephine Bothma has a PhD in Environmental Management. Please find a CV of the EAP and proof of qualifications included in Appendix A.

b. Summary of the EAP's past experience

The Environmental Assessment Practitioner (EAP) has the appropriate skills and experience to undertake the required studies for the proposed project. Dr Bothma has:

- Experience in environmental studies for linear project and borrow pits and quarries.
- The EAP is registered as an Environmental Assessment Practitioner with EAPASA with registration number 2019/246.
- Proven ability to timeously produce thorough, readable and informative documents.
- Adequate recording and reporting systems to ensure the preservation of all data gathered.
- A good working knowledge of all relevant and applicable policies, legislation, guidelines, norms and standards.
- The EAP does not have any links to engineering firms, construction companies, or financial institutions, and would be able sign the required declarations of independence to be submitted to the relevant environmental authorities.

Dr Bothma has a PhD in Environmental Management with extensive experience in the environmental field. Dr Bothma is a founder member of Chameleon Environmental since August 2006, a specialist environmental consulting company based in Pretoria, South Africa but operates nationwide. The company provides a broad range of environmental consulting services to the public and private sectors.

She has:

» Thirty-two (32) years' experience in the environmental field
» Twenty-two (22) years' experience in Project Management
» Project management of large environmental assessment and environmental management projects.

2. LOCATION OF THE ACTIVITY

The project is located on National Route 2 section 34 between Verzameling (km 30.0) and Leiden (km 60.0). This project consists of a total length of approximately 30 km and is situated in the province of Mpumalanga within both the Msukaligwa Local Municipality and the Mkhondo Local Municipality in the Gert Sibande District Municipality. A locality plan is included as Appendix B.

The coordinates for the project are the following:

	Latitude (S):		Longitude (E):	
• Starting point of the activity (km 30.0)	26°	51'11.86"	30°	32'29.46"
• Middle point of the activity (km 45.0)	26°	47'11.12"	30°	24'47.80"
• End point of the activity (km 60.0)	26°	43'53.90"	30°	17'08.51"

Please see locality plan of the project attached as Appendix B.

3. DESCRIPTION OF THE SCOPE OF THE PROPOSED ACTIVITY

It is the intention of the South African National Roads Agency Soc Ltd (SANRAL) to improve the National Road N2 Section 34 between Verzameling (km 30.0) and Leiden (Km 60.0) and, Mpumalanga Province. The scope of works will include the following:

- Widening of the existing road reserve as to facilitate the improvement from a 2-lane single carriageway to a 4-lane divided dual carriageway (2 lanes in each direction).
- Existing accesses to the N2 will be consolidated and intersections made safer.
- Increasing the road reserve width from 38m to 62m with associated land acquisition.
- Replacement, widening and/or capacity improvement of bridges, major and minor culverts.
- Stockpile areas and vegetation clearance outside road reserve in excess of one hectare.

The N2 section 34 will be upgraded to a four (4) lane divided dual carriageway road. The required cross-section allows for the construction of a new carriageway next to the existing road. During the first stage of construction, traffic remains on the existing roadway. After completion of the new carriageway, two-way traffic can be diverted onto the new carriageway. While traffic is diverted onto the new carriageway, the existing road section can be re-constructed as the second carriageway.

3.1 Technical Details

The existing carriageway mainly consists of 2 x 3.7m wide lanes, one in each direction. Auxiliary lanes are introduced intermittently yet remains less than 400m long in all cases. The

surfaced shoulder is generally 0.1m wide and increases to between 2.0m and 3.0m over short distances.

The road will be upgraded to the following:

A 4-lane dual carriageway (2 lanes in each direction) with a wide grass median.

- 2 x 3,7m inner lanes,
- 2 x 3.7m outer lanes,
- 2 x 1.0m inner shoulders,
- 2 x 2,5m outer shoulders,
- Median of 8.6 m,
- 2.5% Camber,
- 1:2 cut and fill slopes,
- 0.8 m V-drain and guardrails, where required,
- 2 x 0,5m V-drain in cut conditions and 5.5m unlined drain in shallow cuts.

The following existing structures will either be demolished and replaced or upgraded on the project:

Table 1: Existing structures on project

Existing Bridge / Major Culvert	Bridge / Culvert Type	Action Required at Existing Structure	Km Distance	Final Description / configuration	Area outside existing road reserve
C09	6 x 1.2 m diameter concrete pipes	Structure to be demolished and replaced	km 38.363	Major Culvert: 5 x 2.4 m (W) x 2.4 m (H)	316 m²
C08	5 x 1.2 m diameter concrete pipes	Structure to be demolished and replaced	km 43.540	Major Culvert: 5 x 3.0 m (W) x 2.4 m (H)	466 m²
C07	8 x 1.2 m diameter concrete pipes	Structure to be demolished and replaced	km 47.759	Major Culvert: 5 x 3.0 m (W) x 2.4 m (H)	368 m²
B2492	2 x 15.5 m spans	Structure to be demolished and replaced	km 48.570	Bridge: 12.90 m – 12.40 m – 12.90 m (Hydraulic opening: 3 x 12.00 m)	1 597 m²
NC2	3 x 0.6 m diameter concrete pipes	Structure to be demolished and replaced	km 49.198	Major Culvert: 3 x 2.8 m (W) x 2.1 m (H)	160 m²

Existing Bridge / Major Culvert	Bridge / Culvert Type	Action Required at Existing Structure	Km Distance	Final Description / configuration	Area outside existing road reserve
C06	5 x 1.2 m diameter concrete pipes	Structure to be demolished and replaced	km 53.670	Major Culvert: 5 x 1.8 m (W) x 1.8 m (H)	223 m²
C05	2 x 1.8 m (W) x 1.8 m (H) box type culvert	Structure to be demolished and replaced	km 54.670	Major Culvert: 3 x 3.0 m (W) x 3.0 m (H)	261 m²
B2491	2 x 8.1 m spans	Structure to be demolished and replaced	km 58.190	Bridge: 12.90 m – 3 x 12.40 m – 12.90 m (Hydraulic opening: 5 x 12.00 m)	674 m²
C04	5 x 1.2 m diameter concrete pipes	Structure to be demolished and replaced	km 58.452	Major Culvert: 3 x 2.8 m (W) x 2.1 m (H)	291 m²

The following table provides a list of the intersections that will be required on the project:

Table 2: Intersections required

Intersection Nr.	km Distance	LHS/RHS	Future Interchange Location	Type
1	30.614	Both	No	Farm Access
2	31.541	LHS	Yes (km 31.920)	Split Butterfly
3	31.914	RHS	Yes (km 31.920)	Split Butterfly
4	32.987	Both	No	Farm Access
5	36.954	Both	Yes (km 39.890)	Major Road Crossing
6	39.600 – 42.900	Both	Yes	Panbult Interchange
7	43.692	Both	No	Farm Access
8	45.333	Both	No	Farm Access
9	48.060	Both	No	Farm Access
10	50.190	Both	Yes (Km 50.190)	Farm Access
11	53.124	Both	No	Farm Access
12	56.220	Both	No	Farm Access

The water uses (crossing streams/rivers or within 500m of a wetland) will be applied for at the Department of Water and Sanitation in accordance with the National Water Act, (Act No. 36 of 1998).

3.2 Facilities and Construction Activities

A list of possible facilities and construction activities associated with the project are summarised in Tables 3 and 4.

Table 3: Construction Facilities

REFERENCE	FACILITIES
Construction site camp	Access Roads
	Offices and site laboratory
	Storage Tanks
	Topsoil stockpiles
	Work shops
	Wash bays
	Laydown areas
	Store rooms
	Fuel storage facilities
	Cement silos
	Batching plants
	Temporary spoil stockpile
	Toilets and sanitation
	Oil traps
	Oil recycling facilities
	Storage of hazardous materials (oil, paint etc)
	Storage of gas
	Refuelling area
	Site security post
Pre-cast yard	Batching plant
	Cement Silos
	Settlement ponds
	Concrete washing facilities
	Curing areas
	Workshops

Table 4: List of Construction Activities

No	CONSTRUCTION ACTIVITIES
1	Earthworks: Excavation
2	Earthworks: Blasting
3	Cleaning and grubbing and bulldozing activities
4	Concrete work
5	Construction and use of temporary access roads
6	Construction employment (appoint labourers)
7	Control of weeds and invasive species
8	Spoil material generation and management
9	Domestic solid waste collection and disposal
10	Locate spoil disposal sites

No	CONSTRUCTION ACTIVITIES
11	Explosive magazines (to be determined)
12	Handling and disposal of contaminated water
13	Handling, storage and disposal of hazardous material
14	Horticultural activities
15	Parking bay for trucks
16	Lighting activities
17	Managing construction site (labourers)
18	Managing spoil dump sites
19	Managing topsoil stockpiles
20	Mixing of concrete
21	Ongoing consultation with affected parties
22	Overhead work and signalling
23	Painting
24	Provision and operation of water washing and toilet facilities
25	Refuelling of construction vehicles and machinery
26	Slope stabilisation and erosion control
27	Construction solid waste collection and disposal
28	Storage and disposal of empty containers
29	Topsoil stripping
30	Transportation of hazardous substances
31	Transportation of spoil material
32	Use of electricity generators
33	Welding

a. Construction Materials

The following construction materials could be required by the Project:

- Gravel material
- Cement
- Structural Steel
- Reinforcement Steel
- Sand
- Bituminous material/asphalt
- Paints and chemicals, mineral products
- Fixtures and fittings

The construction material such as cement, structural steel, reinforcement steel, rock bolts and paints will be procured directly from sources. The fine and coarse aggregate required for the preparation of concrete is planned to be made available from suitable quarry sites located and/or spoil from excavations.

b. Rock Quarries and Borrow Pits

A survey to identify suitable quarry and borrow pit locations was undertaken. The aim of the survey was to identify sites which could potentially provide the quantity and quality of aggregates required at a location as close to the major project components as possible, in order to reduce transportation costs and minimise environmental impacts. A separate environmental study was undertaken for the quarry and borrow pit sites and submitted to the Department of Mineral Resources and Energy for approval.

c. Crushing Plants

A crushing plant is planned at the identified quarry sites, with a spoils area at the quarry.

3.3 Additional Project Infrastructure

a. Site Camps

The final location of the construction camp sites, including offices during the construction phase, will be determined by the Contractor that is appointed for the construction of the road by the applicant (South African National Roads Agency Soc Limited), following the tender process. The appointed contractor usually identifies land that is already disturbed or makes use of an old farm house. However, it is acknowledged that should any listed activity be triggered in terms of the EIA Regulations, 2014, as amended, in the setting up of the construction camp site, the contractor would have to undertake the necessary environmental studies before the camp site can be erected.

The following could potentially be construction camp sites, including offices during the construction phase:

- Disturbed, open land.
- On farmland.

Both options will have to be discussed with the various landowners by the appointed Contractor for the project.

It is envisioned that the staff would stay in Ermelo.

The options to have the camp sites dismantled after construction work is completed or to sign it over to the respective landowner, will also be negotiated with the Contractor and the respective landowner.

b. Electricity and Diesel Supply

The power demand is expected to be 1000 kW per day and will be supplied from two 800 kW diesel generators on site. Buried electrical cables will distribute power around the site.

Diesel fuel for generators and construction equipment will be stored in a secure area in suitable above ground steel tanks at the identified camp sites, supplied and maintained by the fuel suppliers. An adequate bund wall (110% volume) will be provided for fuel and diesel areas to accommodate any spillage or overflow of these substances. Approximately 600,000 tonnes of diesel are expected to be supplied over the three years of operation.

c. Concrete Batching and Mixing Plants

At this stage the location and number of concrete batching and mixing plants and stores and workshops for the project is unknown. It is envisaged that there will be construction facilities at various sections along the alignment and that each of these sections will include a concrete batching and mixing plant, main stores and a workshop.

d. Excavators, Motor Graders and Road Rollers

Various excavators and motor graders will also be used for the construction of the road. The graders are used to create an even flat surface to lay the asphalt on. The road roller is basically a compactor which makes use of soil, gravel, and asphalt during the construction of roads. Road rollers are also used for compacting the land before the asphalt can be laid after the graders have done their work. The rollers are used to press the asphalt in place and bind the various layers of the road together.

e. Asphalt Mixing Plants

Asphalt mixing plants are machines that are used to manufacture road stone like asphalt, cement and rock stones to make the top layer of the roads. The operation of a temporary asphalt plant is exempted from applying for an Atmospheric Emission License as per NEM:AQA, 2004 Section 23 Notice 201. The definition of a temporary asphalt plant is the following: “An asphalt plant that is used for the sole purposes of supplying asphalt for a specific road paving contract not exceeding a period of 24 months”. New and existing temporary asphalt plants must comply with the standards and limits as noted in Notice 201.

f. Forklift Truck and Wheel Loader

Forklift truck is a powered industrial vehicle that can be used to pick an object on or below the ground level and raised to move the object. Wheel loaders are also known as front-end loaders. It is a machine that is used to move a pile of material from the ground and load it onto a dump truck. It consists of front mounted square wide bucket joined to the end of two arms used to scoop up materials from the ground without spreading it out.

g. Water Supply and Sewage Treatment

The appointed Contractor will be responsible to source water for the project. It is presumed that potable water will initially be supplied by road from Municipal water. Water could also be sourced from existing boreholes, fountains and farm dams in close proximity to the project

site. The necessary permits will be obtained by the appointed Contractor for any new abstractions.

Water for use in construction processes (eg concrete production) and dust control will be sourced from existing boreholes and farm dams.

Firefighting water will be held in tanks to provide a sustained flow rate of 250 000 litres per hour, for up to four hours.

During the construction stage, sewage will be treated using portable chemical treatment units on the construction site and at the site camps. The potable toilets will be serviced regularly by a reputable service provider (at least once a week).

4. LISTED ACTIVITIES

The following listed activities are applicable to this project:

Table 5: Listed activities applicable to project

<table>
<tr><th>Listed activity triggered</th><th>Reason</th></tr>
<tr><td>GN R. 983, Item 12 (as amended):

The development of ii). infrastructure of structures with a physical footprint of 100 square metres or more;</td><td>The following structures extend beyond the current road reserve:
<table>
<tr><th>Existing Bridge / Major Culvert</th><th>Bridge / Culvert Type</th><th>Action Required at Existing Structure</th><th>Km Distance</th><th>Final Description / configuration</th><th>Area outside existing road reserve</th></tr>
<tr><td>C09</td><td>6 x 1.2 m diameter concrete pipes</td><td>Structure to be demolished and replaced</td><td>km 38.363</td><td>Major Culvert: 5 x 2.4 m (W) x 2.4 m (H)</td><td>316 m²</td></tr>
<tr><td>C08</td><td>5 x 1.2 m diameter concrete pipes</td><td>Structure to be demolished and replaced</td><td>km 43.540</td><td>Major Culvert: 5 x 3.0 m (W) x 2.4 m (H)</td><td>466 m²</td></tr>
<tr><td>C07</td><td>8 x 1.2 m diameter concrete pipes</td><td>Structure to be demolished and replaced</td><td>km 47.759</td><td>Major Culvert: 5 x 3.0 m (W) x 2.4 m (H)</td><td>368 m²</td></tr>
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<tr><td>NC2</td><td>3 x 0.6 m diameter concrete pipes</td><td>Structure to be demolished and replaced</td><td>km 49.198</td><td>Major Culvert: 3 x 2.8 m (W) x 2.1 m (H)</td><td>160 m²</td></tr>
<tr><td>C06</td><td>5 x 1.2 m</td><td>Structure to be demolished</td><td>km 53.670</td><td>Major Culvert: 5 x 1.8 m (W) x 1.8 m (H)</td><td>223 m²</td></tr>
</table></td></tr>
</table>

		diameter concrete pipes	and replaced			
	C05	2 x 1.8 m (W) x 1.8 m (H) box type culvert	Structure to be demolished and replaced	km 54.670	Major Culvert: 3 x 3.0 m (W) x 3.0 m (H)	261 m²
	B2491	2 x 8.1 m spans	Structure to be demolished and replaced	km 58.190	Bridge: 12.90 m – 3 x 12.40 m – 12.90 m (Hydraulic opening: 5 x 12.00 m)	674 m²
	C04	5 x 1.2 m diameter concrete pipes	Structure to be demolished and replaced	km 58.452	Major Culvert: 3 x 2.8 m (W) x 2.1 m (H)	291 m²

GN R. 983, Item 19 (as amended): The infilling or depositing of any material of more than 10 cubic metres into, or removal or moving of soil from a watercourse.	The material that will be required for infilling or depositing will be more than 10 m^2 for the project.
GN R. 983, as amended in GN R. 327: Item 24 (as amended) The development of a road (ii) with a reserve wider that 13.5 m or where no reserve exists where the road is wider than 8 m	The road reserve will be approximately 62 m wide.
GN R. 983, as amended in GN R. 327: Item 31 (as amended) The decommissioning of existing facilities, structures or infrastructure for (i) Any development and related	The following structures will be demolished and replaced:

Existing Bridge / Major Culvert	**Bridge / Culvert Type**	**Action Required at Existing Structure**	**Km Distance**	**Final Description / configuration**
C09	6 x 1.2 m diameter concrete pipes	Structure to be demolished and replaced	km 38.363	Major Culvert: 5 x 2.4 m (W) x 2.4 m (H)

operation activity or activities listed in this Notice	C08	5 x 1.2 m diameter concrete pipes	Structure to be demolished and replaced	km 43.540	Major Culvert: 5 x 3.0 m (W) x 2.4 m (H)	
	C07	8 x 1.2 m diameter concrete pipes	Structure to be demolished and replaced	km 47.759	Major Culvert: 5 x 3.0 m (W) x 2.4 m (H)	
	B2492	2 x 15.5 m spans	Structure to be demolished and replaced	km 48.570	Bridge: 12.90 m – 12.40 m – 12.90 m (Hydraulic opening: 3 x 12.00 m)	
	NC2	3 x 0.6 m diameter concrete pipes	Structure to be demolished and replaced	km 49.198	Major Culvert: 3 x 2.8 m (W) x 2.1 m (H)	
	C06	5 x 1.2 m diameter concrete pipes	Structure to be demolished and replaced	km 53.670	Major Culvert: 5 x 1.8 m (W) x 1.8 m (H)	
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	C04	5 x 1.2 m diameter concrete pipes	Structure to be demolished and replaced	km 58.452	Major Culvert: 3 x 2.8 m (W) x 2.1 m (H)	

GN R. 983, as amended in GN R. 327: Item 48 (as amended)

The expansion of infrastructure or

The following structures will be expanded by more than 100sq m:

Existing Bridge / Major Culvert	**Bridge / Culvert Type**	**Action Required at Existing Structure**	**Km Distance**	**Area outside existing road reserve**
C09		Structure to be		316 m^2

structures where the physical footprint is expanded by 100 sq m or more (a) Inside a watercourse			6 x 1.2 m diameter concrete pipes	demolished and replaced	km 38.363	
		C08	5 x 1.2 m diameter concrete pipes	Structure to be demolished and replaced	km 43.540	466 m²
		C07	8 x 1.2 m diameter concrete pipes	Structure to be demolished and replaced	km 47.759	368 m²
		B2492	2 x 15.5 m spans	Structure to be demolished and replaced	km 48.570	1 597 m²
		NC2	3 x 0.6 m diameter concrete pipes	Structure to be demolished and replaced	km 49.198	160 m²
		C06	5 x 1.2 m diameter concrete pipes	Structure to be demolished and replaced	km 53.670	223 m²
		C05	2 x 1.8 m (W) x 1.8 m (H) box type culvert	Structure to be demolished and replaced	km 54.670	261 m²
		B2491	2 x 8.1 m spans	Structure to be demolished and replaced	km 58.190	674 m²
		C04	5 x 1.2 m diameter concrete pipes	Structure to be demolished and replaced	km 58.452	291 m²

GN R. 983, Item 56 (as amended): The widening of a road by more than 6 m where the existing reserve is wider than 13.5 m	The road will be widened by approximately 17m and the reserve is wider than 13.5m.

5. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

The following legislation, policies and/or guidelines are applicable to the application:

Table 6: Legislation, policies and/or guidelines are applicable to the application

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
EIA Regulations 2014 as amended **GN R. 983 as amended in GN R. 327** Activities 12, 19, 24, 31, 48 and 56	Listed activities triggered in terms of the EIA Regulations, 2014 as amended	Department of Environment al Affairs	4 December 2014
Department of Environmental Affairs Departmental Guidelines under www.environment.gov.za	Guidance with regard to the execution of the Environmental Impact Assessment process	Department of Environmental Affairs	2010
National Environmental Management Act, 1998 (Act No. 107 of 1998) The National Environmental Management Act, 1998 (Act No. 107 of 1998): [NEMA] was enacted in November 1998. NEMA provides for cooperative governance by establishing principles for decision-making on matters affected the environment, institutions that will promote co-operative governance and procedures for coordinating environmental functions,	General objectives of Integrated Environmental Management as set out in section 23 of NEMA taken into account	The National Department of Environmental Affairs	1998

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
public participation and sustainable development.			
National Environmental Management: Biodiversity Act (Act No. 10 of 2004) Red data and protected species listed.	Ecological study Red data and protected species listed in the Act will need to be assessed	Department of Agriculture, Forestry and Fisheries (permit application, if necessary)	2004
The National Water Act (Act No. 36 of 1998) for water uses as defined in section 21 (c) and section 21 (i). The application for a General Authorisation or Water Use License (WUL) in terms of the National Water Act, 1998.	Aquatic Study Stream crossings and application of a general authorization or WUL at the Department of Water and Sanitation	Department of Water and Sanitation	2016
National Heritage Resource Act 1999 (Act No. 25 of 1999) and **KwaZulu-Natal Heritage Act (Act 4 of 2008) Standards and Regulations** **South African Heritage Resources Agency (SAHRA) Minimum Standards;** **Association of Southern African Professional Archaeologists (ASAPA) Constitution and Code of Ethics;** **Anthropological Association of Southern Africa Constitution and Code of Ethics.**	Construction of road, or other linear form of development or barrier exceeding 300m in length Construction of bridge or similar structure exceeding 50m in length Development exceeding 5000 sq m required approval from SAHRA. Heritage and Palaeontological study	South African Heritage Resources Agency (SAHRA)	1999

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
International Best Practise and Guidelines ICOMOS Standards (Guidance on Heritage Impact Assessments for Cultural World Heritage Properties); and The UNESCO Convention In terms of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) comment will be obtained from SAHRA. Permits will be obtained if necessary. Concerning the Protection of the World Cultural and Natural Heritage (1972).			
Regulation 15 of the Conservation Act of Agricultural Resources Act, 1983 (Act 43 of 1983)	Ecological study Alien vegetation identification on site	Department of Agriculture	1983
The Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983).	Land capability and Agricultural Potential Study	Department of Agriculture	1983

6. NEED AND DESIRABILITY OF PROJECT

The following provide a motivation for the need and desirability of the activity:

1. Is the activity permitted in terms of the property's existing land use rights?	YES x	NO	Please explain
The project is undertaken in terms of the South African National Roads Agency Soc Limited (SANRAL's) mandate in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The declaration of the N2 as a national road under section 40(1) of the Act creates the land use right within the declared road reserve.			

2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES x	NO	Please explain
The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The N2 is a national road and falls within the jurisdiction of the SANRAL and the development is not bound by the Municipality's PSDF in order to continue.			
(b) Urban edge / Edge of Built environment for the area	YES x	NO	Please explain
The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The N2 is a national road and falls within the jurisdiction of the SANRAL and the development is not bound by the Municipality's urban edge in order to continue as it is not a residential development or municipal road development.			
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES x	NO	Please explain
The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The N2 is a national road and falls within the jurisdiction of the SANRAL and the development is not bound by the Municipality's IDP in order to continue as it is not a residential development or municipal roads development.			
(d) Approved Structure Plan of the Municipality	YES x	NO	Please explain
The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The N2 is a national road and falls within the jurisdiction of the SANRAL and the development is not bound by the Municipality's approved structure plan in order to continue as it is not a residential development or municipal roads development.			
(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	YES	NO x	Please explain
The approval of this application will not compromise the integrity of the existing environmental management priorities for the area and it can it be justified in terms of sustainability considerations. No significant long term impact is foreseen as a result of the project.			

(f) Any other Plans (e.g. Guide Plan)	YES	NO x	Please explain
No significant long term impact is foreseen as a result of the project.			
3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	YES x	NO	Please explain
The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The N2 is a national road and falls within the jurisdiction of the SANRAL. The development is not bound by the Municipality's approved SDF in order to continue as it is not a residential development or municipal roads development.			
4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	YES x	NO	Please explain
The area is in dire need of this project and it is a societal priority as numerous accidents occur on the N2 in this area every year with associated loss of lives.			
5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development?	YES x	NO	Please explain
The contractor, once appointed through the tender process with SANRAL, will decide on the water, sewage and waste disposal services during the time of construction. The relevant contractor will negotiate with the relevant local Municipality for provision of these services.			
6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)?	YES x	NO	Please explain
The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The N2 is a national road and falls within the jurisdiction of the SANRAL. The development is not bound by the Municipality's infrastructure planning in order to continue.			
7. Is this project part of a national programme to address an issue of national concern or importance?	YES x	NO	Please explain
The upgrade of the N2/34 is part of the wider N2 corridor upgrades between the KZN border and Camden which in turn forms part of the strategic route upgrades between Gauteng and Richards Bay and Durban harbours.			

8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	YES x	NO	Please explain
The N2 is an existing national road and will be widened in terms of SANRAL's mandate in terms of the South African National Roads Agency Limited and National Roads Act, 1998.			
9. Is the development the best practicable environmental option for this land/site?	YES x	NO	Please explain
The upgrade of the N2 will be conducted within the N2 road reserve. The potential impacts related to the activity were assessed together with specialist engineering and environmental input and the best practicable environmental option and mitigation measures recommended in the report.			
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES x	NO	Please explain
The benefits of the proposed development will outweigh the negative impacts as the local communities and road users are in dire need of this project as a result of the severe safety risk if the N2 is not upgraded with associated loss of lives. The N2 will, therefore, be upgraded with a low impact to the environment but a high positive impact to the community and traveling public.			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	YES	NO x	Please explain
The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The N2 is a national road and falls within the jurisdiction of the SANRAL. This development will therefore not set a precedent for similar activities as it is not bound by the Municipality's infrastructure planning in order to continue.			
12. Will any person's rights be negatively affected by the proposed activity/ies?	YES	NO x	Please explain
It is not foreseen that any person's rights will be negatively affected by the proposed activity as no community displacement will take place. A public participation process was followed and the comments and concerns taken into account during the environmental process.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	YES	NO x	Please explain
The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The N2 is a national road and falls within the jurisdiction of the SANRAL and the development is not bound by the Municipality's urban edge in order to continue as it is not a residential development or municipal road development.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	YES	NO x	Please explain
This project is not included in any of the SIP projects.			

15. What will the benefits be to society in general and to the local communities?	Please explain

The upgrade of the N2 offer several benefits to society in general, including:

- Decrease accidents due to decreasing possibility of head-on collisions;
- Safer driving conditions for the road users as the one-way will provide opportunities to pass heavy vehicles.
- With the upgrade of the road, less maintenance on vehicles are anticipated;
- Improved traffic flow, particularly during peak periods;
- Reduced congestion;
- Improved drainage and other services.

The following community involvement goals will form part of the construction works:

- Minimum of 30% of the Final Contract Value by the end of the contract to Targeted Enterprises in the form of subcontracting works;
- Minimum of 8% of the Final Contract Value by the end of the contract to Targeted Labour; and
- An amount still to be determined will also be allocated for a Community Development (CD) type project within the main contract. The CD component to be executed by CIDB 1 to 4 Targeted Enterprise contractors, utilising labour enhanced construction methods.

16. Any other need and desirability considerations related to the proposed activity?	Please explain

- Employment opportunities for the local residents during construction.
- Less accidents and associated loss of lives.
- Improved drainage and other services.
- Drainage channels will be improved.

17. How does the project fit into the National Development Plan for 2030?	Please explain

The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa. The N2 is a national road and falls within the jurisdiction of the SANRAL in terms of the South African National Roads Agency Limited and National Roads Act, 1998.

18. Description of how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.

The following general objectives of integrated environmental management have been taken into account:

a) Identified, predicted and evaluated the actual and potential impact on the environment as a result of the upgrade of the N2 as well as the socio-economic conditions and cultural heritage,

b) Investigated alternatives and options for mitigation of activities, with a view to minimizing negative impacts.

c) Maximizing benefits to the environment as a result of the upgrade of the N2;

d) Ensured that the effects of activities on the environment received adequate consideration before actions are taken in connection with them;

e) Ensured adequate and appropriate opportunity for public participation in decisions that may affect the environment;

f) Ensured the consideration of environmental attributes in management and decision-making which may have a significant effect on the environment; and

g) Identified and employed the modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in section 2 of the NEMA.

19. Description of how the principles of environmental management as set out in section 2 of NEMA have been taken into account.

The following have been taken into account:

- Identified all potential activities and associated environmental risks associated with the proposed project;
- Consideration of all relevant ecological, social and economic factors in development;
- Minimised adverse environmental impacts, pollution or degradation of the environment;
- Avoiding or minimising the disturbance to ecosystems;
- That pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;
- That the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied;
- That waste is avoided, or where it cannot be altogether avoided, minimised and re-used or recycled where possible and otherwise disposed of in a responsible manner;
- That the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;
- That the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;
- That a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions;
- That negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.
- Promotion of community participation through an extensive and open public participation process with I&APs;
- Delivery of high quality information to government and other decision-makers in order to enable them to make informed decisions regarding the project and avoid unnecessary project delays.

7. DETAILS OF PUBLIC PARTICIPATION PROCESS FOLLOWED

A public participation process was undertaken in accordance with the EIA Regulations, 2014, as amended.

The public participation and communication process aims to identify issues in order to maximise the social and environmental benefits, and to minimise the social and environmental costs of the proposed project.

Interested and affected parties (I&APs) were consulted and afforded the opportunity to participate. The I&APs were informed and involved in the project from the outset in order to promote participation and transparency.

The aim of this public participation process is to achieve the following broad goals:

- Identification of all key I&APs and stakeholders;
- The active involvement of all I&APs with respect to decision making;
- An exchange of information relevant to the proposed project through Background Information Documents (BID), consultations and newspaper advertisements.
- The development of an understanding with regards to the broader project objectives and goals and knowledge of the project; and
- The identification of issues and concerns with regards to all potential alternatives associated with the proposed development.

The following approach was followed in undertaking the public participation process:

a. Identification of and Consultation with I&APs

The first step in the public participation process was to identify the key I&APs. A list of the registered I&APs is attached as Appendix D.

b. Advertising

In accordance with the EIA Regulations, 2014, as amended an advertisement was placed requesting I&APs to register their interest in the project. An advertisement was placed in the Highveld Tribune of 26 April 2022. A copy of the advertisement is included in Appendix D.

c. Site Notice

Site notifications in English in A2 format requesting comments or objections were placed on site on 28 April 2022, at the Ermelo Public Library at Cnr Kerk & Taute St, Ermelo and at the Mkhondo Public Library, Piet Retief Street, Mkhondo. Photographs of the site notices are included in Appendix G.

d. Notification Letter and Background Information Document

Notification letters about the project and a Background Information Document were sent out to the particular Ward Councillors, Government Departments that would be relevant to this project and the affected landowners are included in Appendix D.

e. Focus Group Meetings

Focus group meeting were held with the respective affected landowners along the route. The attendance registers and minutes of the meetings are attached in Appendix D.

f. Comments and Response Report

A comments and response report was drafted that included all the issues raised by the Interested and/or Affected Parties as well as the responses to the issues raised. The Comments and Response report is included in Appendix D.

g. Local Authority Involvement

Letters were forwarded to the Msukalingwa Local Municipality, Mkhondo Local Municipality and the Gert Sibande District Municipality. The letters are included in Appendix D.

h. Review of Draft Basic Assessment Report

The Draft Basic Assessment Report will be made available to the public for review and comment, within an allocated 30-day period.

7.1 Summary of issues raised by I&APs

Table 7: Summary of Issues raised by I&APs

Interested and Affected Parties	**Date** **Comments** **Received**	**Issues raised**	**EAPs response to issues as** **mandated by the applicant**	**Section and Paragraph Reference in This report where the Issues and or Responses were incorporated.**
AFFECTED PARTIES				
Landowner/s				
The South African National Roads Agency Soc Limited	No comments received	No issues raised	No response necessary	None required
Lawful Occupier/s of the Land				
There are no lawful occupiers of the N2 road reserve	No comments received	No issues raised	No response necessary	None required
Landowners or Lawful Occupiers on Adjacent Properties				
Mr Hans Gerkin Portion 0 of the farm Ernstdraai 536 and Portion 0 of the farm Basel 313	Meeting 7 December 2021	a) Mr Gerken stated that he does not object to the proposed land acquisition and access plan. b) Bridge between two portions of the farm became inadequate after Department of Water Affairs increased the	a) Access to the smaller portion will be provided by means of a farm intersection. The advantages of the auxiliary turning lanes in the intersection were explained further. b) It is not a SANRAL road, so	Appendix D - PPP

		river flow. Construction of a new bridge was promised but never implemented. c) The Amsterdam Road (at Panbult) is in a bad state, but important to local farmers. Attempts to maintain the road by the farmers are inadequate.	they will most likely not agree to extending the contract to that road. Local farmers should request the main contractor during construction to work on improving it in good faith.	
Mr Carl Creydt Portion 0 of the farm Springbokkraal 434	Meeting 17 November 2021	a) Mr Creydt stated that he does not object to the proposed land acquisition and access plan. b) Mr Creydt expressed concern that residents of the nearby RDP town may start accessing the property through the farm intersection proposed to provide access to said property. It was enquired if SANRAL can formalize access on paper but not construct the intersection. c) Concerns were raised about the K53 ruled prohibiting the use of tractors on the highway, as tractors are important for farmers in conducting business, such as collecting timber directly from the plantation to the rail loading zone, as trucks cannot collect from the field. d) Mr Creydt stated he has other properties alongside the N2, further east.	a) It is not possible to provide an alternative access to the northern portion of the property through a right of way which extends to the next intersection located west of his property because of the existence of a railway servitude which would have to be crossed. It was promised to enquire from SANRAL the possibility of granting the landowner's wishes to not construct the intersection. b) A formal enquiry will be made to SANRAL for a formal response to concerned farmers, but it is generally understood that this is a farming area. It is also stated that the N2 upgrade makes provision for a 2.5m shoulder which can be utilized by slow-moving vehicles. c) Those properties will be addressed in later sections of the project.	Appendix D - PPP

Mr. Ralf Paul Portion 1 of the farm Springbokkraal 434	Meeting 17 November 2021	a) Mr Paul Stated that he does not object to the proposed land acquisition and access plan. b) Mr Paul stated that he has a building and land inside Portion 10 of the farm Springbokkraal 434, next to Iswepe Timber Factory, which can be used by the contractor during construction. It has been used by a previous contractor working on a different project.	a) Mr Boonstra agreed to note the information for consideration by the implementation contractor.	Appendix D - PPP
Exxaro Ms Igna Dougal Ms Karen Mare Ms Joyse Roelofse Portion 2 of the farm Rietvlei 310	Meeting 18 January 2022 at 11:00	a) Ms Dougal stated that Exxaro acquired the property recently and has not yet mined in it. The property is located to the east of Sheepmore village. b) Ms Mare asked whether fencing will be restored after the acquisition of the required area and whether alternative access to the N2 will be provided. c) Ms Dougal expressed a concern that the three families that stay on the property will suffer as a result of their direct access to the N2 being closed, and shared a screen to highlight the wetland that is creating those access difficulties. d) Ms Dougal stated that there are mining rights on the property; access agreements will have to be signed before access is granted for public	a) Mr Skhosana stated that the area required will be used for road reserve widening. b) Mr Skhosana confirmed that the property will be fenced off with a fence of the same type and standard or better. He also stated that access will also be provided. c) Mr Boonstra stated that access to the property will be provided through the Sheepmore major intersection, located just west of the property, and back routes. Direct access to the N2 will not be allowed or provided since the N2 will be a high mobility road (speed of 120km/h). d) Mr Skhosana requested Exxaro to sign a consent form and email it to KBK Engineers. He explained that a consent form is not a contract but a	Appendix D - PPP

		participation and other purposes. e) Ms Mare agreed to have the consent form signed by a suitably delegated person in the company and sent back to KBK. f) Ms Dougal confirmed that there are no graves in the area to be acquired. g) Ms Dougal confirmed that the property's type and zoning are 'agricultural'. h) Ms Dougal stated that Eskom intends to construct a power line in the vicinity and promised to make the layout information to Mr Skhosana so that it is verified that this work does not impact on the N2 improvements.	confirmation that the layout and impact were explained to the property owner or representative and an opportunity was granted for them to express their concerns which should be documented on the form.	
Mr. Hans Filter Portion 0 of the farm Valschvlei 352	Meeting 17 November 2021	a) Mr Filter stated that he does not object to the proposed land acquisition and access plan. b) He requested that he be informed 6 months before construction commences so that he can adjust his planting activities on the area to be acquired. c) Mr Filter also raised concerns that tractors are not allowed on the highway according to the K53 rules of the road. Tractors are used to collect timber directly from the plantation to the railway siding, and using tractors for	a) Mr Boonstra stated that it is generally accepted that the area in question is a farm area, however the concern will be escalated to SANRAL for a response to all concerned farmers. b) Mr Skhosana stated that the N2 upgrade also makes provision for a 2.5m paved shoulder in each direction for use by slow-moving vehicles; this will help the course of local farming activities. c) Mr Boonsta agreed to present this request to SANRAL for approval/decision, although this request does not impact	Appendix D - PPP

		transport avoids a double handling operation as trucks cannot access the plantation fields. d) Mr Filter commented that he alone yields about 200 tractor loads of timber per month that end up at the Iswepe railway siding, and these use and cross the N2 at Iswepe, thus the total combined daily and monthly tractor traffic caused by all farmers is significant. This traffic will make use of the proposed split butterfly intersections adjacent to Iswepe railway siding. e) Mr Filter and his son Johan Filter requested that a 450m gravel road be provided from the existing gravel road on the RHS of the new N2 at Km 42,820 (the position where Mr Filter and others currently cross) to the position of the new N2 intersection at Km 42,300 which provides access to the TWK Silos, to ensure that slow-moving fire-fighting machines and other local farming traffic is kept away from the N2 for this stretch of the N2.	on the land acquisition matters. If granted, a gravel road without any right of way will be constructed by the contractor during construction. d) Mr Skhosana prompted Mr Filter to provide the information required to populate the property report and confirmed that there are no graves in the area to be acquired.	
Mr. Heinz Johannes Mr. HWO Johannes(son) Portion 0 of the farm Springbokfontein 317	Meeting 17 November 2021	a) Mr Heinz Johannes stated that he does not object to the proposed land acquisition and access plan. b) He stated that some farmers have cattle and asked if	a) Mr Skhosana stated that on occasion SANRAL has provided underpasses where warranted and where possible and safe in terms of the road	Appendix D - PPP

		SANRAL is willing to provide underpasses for cattle c) Mr Johannes raised concerns that tractors are not allowed on the highway according to the K53 rules of the road. Tractors are used to collect timber directly from the plantation to the railway siding, and using tractors for transport avoids a double handling operation as trucks cannot access the plantation fields.	vertical alignment. b) Mr Skhosana and Dr Bothma stated that it is generally accepted that the area in question is a farm area, however this concern will be escalated to SANRAL for a response to all concerned farmers. c) Mr Skhosana stated that the N2 upgrade also makes provision for a 2.5m paved shoulder in each direction for the use of slow-moving vehicles; this will help the course of local farming activities. d) Mr Skhosana stated that the area hatched in green means that access road will be constructed without acquiring land. e) Mr Skhosana prompted Mr Johannes to provide the information required to populate the property report and confirmed that there are no graves in the area to be acquired.	
Mr. Heinz Johannes Mr. HWO Johannes(son) Portion 1 of the farm Kiel 315	Meeting 17 November 2021	a) Mr Johannes stated that he does not object to the proposed land acquisition and access plan. b) He expressed a concern about tractors not being allowed on the highway according to K53 rules of the road.	a) Mr Skhosana and Dr Bothma stated that it is generally accepted that the area in question is a farm area, however this concern will be escalated to SANRAL for a response to all concerned farmers. b) Mr Skhosana stated that the N2 upgrade also makes	Appendix D - PPP

			provision for a 2.5m paved shoulder in each direction for use by slow-moving vehicles; this will help the course of local farming activities. c) Mr Skhosana stated that the area hatched in green means that access road will be constructed without acquiring land. d) Mr Skhosana prompted Mr Johannes to provide the information required to populate the property report and confirmed that there are no graves in the area to be acquired.	
Mr. Johannes Stapelberg Portion 0 of the farm 766 Portion 7 of the farm Alkmaar 320 Portion 6 of the farm Alkmaar 320	Meeting 17 November 2021	a) Mr Stapelberg stated that he does not object to the proposed land acquisition and access plan for the three properties apart from portion 7 of the farm Alkmaar as he does not like the position where access is provided of access through an intersection; the area has steep slopes that will make the use of the access impossible. b) Mr Stapelberg requested that a right of way be registered, and access road be provided within portion 0 of the farm 766 to provide access to the adjacent portion 7 of the farm Alkmaar. c) Mr Stapelberg stated that he has a double story house very	a) Mr Boonstra agreed to investigate the possibility of granting this request(b). b) Mr Boonstra stated that SANRAL has a 60m building line restriction (from the centre of a national road)(c). c) Mr Boonstra agreed to have a right of way registered to provide access to both the southern and western parts of the Snyakaza community through the farm intersection which provides access to this property(e). d) Mr Skhosana prompted Mr Stapelberg to provide the information required to populate the property reports and confirmed that there are no graves in the areas to be acquired.	Appendix D - PPP

		close to the road reserve at the north-western corner of this property. d) Mr Stapelberg requested that an electrified 1.8m high game fence in front of the three properties be restored. e) Mr Stapelberg stated that there is a community (Snyakaza Communal Property Association) which resides in the south of the property portion 6 of the farm Alkmaar 320 that uses the existing road (which parts this property in two) to access the N2. He requested for the current access enjoyed by this community (including JJ Timber) to be maintained and not taken away. He mentioned that he is willing to allow a right of way right through his property to make this request a reality. School buses also use this access road. f) He stated that another portion of this community resides in the west of his property and has direct access to the N2. g) He stated that he has a gentlemen's agreement with the western community that they will make use of a portion of his farm while he makes use of a portion of their farm (portions are of similar sizes).		

Snyakaza Ms Florence Zwane (Chairperson of CPA) Ms Thandazile Ngotheni (Daughter) Portion 1 of the farm Alkmaar 320	Meeting 17 November 2021	a) Ms Zwane stated that she does not object to the land acquisition but it is important for SANRAL to arrange a briefing meeting with the CPA and all members so that they can all be briefed and have their questions answered. b) Ms Zwane stated that she cannot solely make a definite decision for the CPA without consultation. c) Ms Zwane provided the hard copies of the CPA registration documents for verification.	a) Mr Skhosana stated that Ms Zwane's concerns will be noted. b) Mr Skhosana also stated that the Department of Agriculture, Land Reform and Rural Development does not favour a situation where the representatives of SANRAL hold meetings with the CPA in its absence. They prefer to be the ones arranging those meetings and inviting the representatives of SANRAL. He stated that the department will be informed. c) Mr Skhosana explained that the area to be acquired will be used to widen the N2 road reserve. d) Mr Skhosana also explained that access to the Snyakaza community will be provided through a right of way running through the eastern neighbouring farm (Portion 6 of the farm Alkmaar 320) which belongs to Mr. Johannes Stapelberg, to the intersection with the N2. e) Mr Skhosana promised to send through by WhatsApp to Ms Ngotheni the final adjusted diagram which shows how access will be provided. f) Mr Skhosana prompted Ms Zwane to provide the information required to populate the property report	Appendix D - PPP

			and confirmed that there are no graves in the area to be acquired.	
Mondi Mr. Joe Coetzer Portion 0 of the farm Driepan 432 Portion 1 of the farm Driepan 432 Portion 0 of the farm Zoar 356 Portion 0 of the farm Sluis 354	Meeting 5 November 2021	a) Mr Coetzer concurred with the layout and mentioned that safe access is a priority to the business of Mondi SA(b). b) Mr Coetzer asked why the road reserve is not widened to the eastern side. c) Mr Coetzer confirmed that this property contains Sluis village with many occupants, that there are no affected graves and if there were they would be picked up in the Mondi GIS system used to mark graves, borehole, etc, and that other property information will be included in the forms that Mr Skhosana will provide. d) Mr Coetzer stated that the northern access was used as an entrance while the southern one an exit for trucks so that they do not have to make a U-turn. e) Mr Bothma requested Mr Coetzer to inform Chameleon Environmental of any specific environmental issues in the area. Informal settlements can	a) Mr Skhosana stated that Portion 0 of the farm Sluis 354 is the most impacted Mondi SA property. b) Mr Boonstra explained that access will be provided through a major staged intersection, as shown in the displayed layout, which can accommodate a truck with a length of up to 25m in the median; this will make right turns easier and safer. c) Mr Boonstra stated that the area for future interchange development will be acquired by SANRAL but Mondi SA can purchase leasing arrangement with SANRAL while the area is not yet developed. d) Mr Boonstra stated that the railway on the eastern side is strategically kept to one side as far as possible because switching sides will complicate the accommodation of traffic for the contractor during construction(b). e) Mr Skhosana explained that access to the	Appendix D - PPP

		become a problem when omitted in the public participation process.	property Portion 0 of the farm Zoar 356 will be provided through a right of way connected to the major staged intersection which falls under Portion 0 of the farm Driepan 432. f) Mr Boonstra explained that access to Portion 1 of the farm Driepan 432 will be provided through a farm intersection as shown. g) He also stated that when trees are cleared to provide access roads these will be compensated for. h) Mr Boonstra explained that access to Portion 0 of the farm Driepan 432 will be provided through a safe Split butterfly intersection which is of an order higher than a farm T-juntion in that it provides a safe painted island separation for right turning fleet for safe speed reduction and safe speed acquisition. i) Mr Boonstra stated that the existing access north of the new formalized access will be closed. Mondi should keep in mind the effect that will have on the operational side of the business.	

			j) Mr Boonstra stated that there is another farm intersection adjacent to Portion 1 of the farm Driepan 432. Mondi can possibly utilize this as an entrance and then use the Split butterfly intersection adjacent to Portion 0 of the farm Driepan 432 as the exit.	
NTE Mr. William Aherin Mr. Peter Willson Portion 16 of the farm Driepan 432	Meeting 4 November 2021	a) Mr Willson stated that there is no objection to the acquisition and indicated that he will b retiring in December 2021. Mr Aherin will be the responsible representative. b) Mr Willson stated that a NTE owned 150mm water pipeline runs inside the SANRAL N2 road reserve (underground) for about 9km on the eastern side of the existing N2. c) Mr Aherin stated that there are drawings and a wayleave (obtained by NTE from the relevant authority) that can be made available to Mr Skhosana. d) Mr Willson stated that the pipeline has air valves and markers along its route; the markers will be upgraded soon.	a) Mr Skhosana stated that only a small portion of the NTE property will be acquired for future interchange development and access will not be affected and will remain as is. b) Mr Skhosana displayed a layout drawing and ascertained that the pipeline runs from km 30.0 to km 31.04 of Project B while the rest of it falls under Project C. c) Mr Skhosana requested Mr Aherin to email the drawings, with, coordinates, and a wayleave, so that the pipeline can be included in the services drawings and be preserved during construction. d) Dr Bothma stated that fortunately the road widening is on the	

			opposite side of the pipeline. e) Mr Skhosana prompted Mr Willson to confirm that the property is zoned as residential, that there are no graves affected, that a small portion of a clear Vu fence is affected, and that there are 27 houses with families residing in the property. f) Mr Willson promised to have the consent form signed by the authorized person.	
Transnet Mr. Zuko Mdingi (National Disposals Manager) Mr Kwezi Sitlhangu (Acting Regional Disposals Manager) Portion 1 of the farm Sluis 354 Portion 7 of the farm Valschvlei 352 Portion 3 of the farm Basel 313 Portion 5 of the farm Springbokfontein 317 Portion 1 of the farm Ernstdraai 316 Portion 4 of the farm Ernstdraai 316 Portion 3 of the farm Ernstdraai 316 Portion 9 of the farm Alkmaar 320	Meeting 31 January 2022 at 10:00	a) Dr Bothma asked who the Transnet contact person of environmental matters will be. b) Mr Skhosana enquired about the process to be followed for SANRAL to acquire the required road reserve and access area from Transnet. He also enquired about whether the process for acquiring from “Transnet Core Business Properties” differs from that of acquiring from “Transnet Non-Core Business Properties”. c) Mr Mdingi stated that he cannot confirm which of the affected Transnet properties are core and which are non-core.	a) Mr Mdingi confirmed that he will be the contact person for all correspondence related to this project, and he will involve relevant persons in his department as the need arises. b) Mr Mdingi stated that the layout and its effects on Transnet properties was explained clearly. He further explained that SANRAL or his agent should apply for acquisition of the required area whether from core or non-core business properties, that if SANRAL’s agent (KBK or PropSol) submits the application it should be accompanied by a power	

			of attorney from SANRAL to certify that SANRAL gives consent. The application should be addressed to the CEO of Transnet and sent or emailed to Mr Mdingi. The road design layout should be included in the application. Transnet will undertake the internal time consuming consultation process to ascertain the impact before granting approval. If Transnet Freight Rail (TFR) is affected, the consultation process may take longer as TFR manages the rail activity. It may take approx. 6 months to acquire from non-core properties; this may however be delayed by the consultation process. It may take approx. 12 months to acquire from core properties. The re-zoning and environmental processes may add another approx. 8 to 12 months resulting in a process as long as 18 to 24 months. It is important that the application is made as early as possible because of these likely delays. Transnet is not	

			likely to grant early occupation to SANRAL for fear that the application may be rejected. There is a likelihood of rejection because Transnet uses these properties for strategic expansion of the business. At certain areas where the contractor needs to encroach into Transnet property during construction, the relevant property manager can be contacted to arrange a temporary occupation permission. c) It was agreed that Mr Skhosana would send to Mr Mdingi the list of affected Transnet properties to obtain confirmation on whether they really belong to Transnet and whether they are core or non-core, before a formal application is sent.	
Municipal Councillors				
Councillor BI Jiyane Ward 11 Msukaligwa Local Municipality	30 July 2021 By e-mail	Cllr Jiyane verbally acknowledged the receipt of the written notice. By telephone he wanted to know how communication was conducted with communities.	It was explained to Cllr Jiyane that communication with the communities within his ward was to be done by Mpumalanga Shared Cervices Board.	Appendix D - PPP

Municipality				
Mr SI Malaza Acting Municipal Manager Msukaligwa Local Municipality	30 July 2021 by e-mail	Mr Malaza's PA acknowledged receipt of the written notification. No comments submitted.	No response necessary	Appendix D - PPP
Mr CA Habile Municipal Manager Gert Sibande District Municipality	No comments received	No issues raised	No response necessary	Appendix D - PPP
Organs of State				
Ms. Makhanana Senwana Director: Tenure Reform Implementation Mpumalanga Provincial Shared Services Centre Department of Agriculture, Land Reform & Rural Development	By e-mail: 28 July 2021	I am responsible for the CPAs in the Provincial office, however, your request has been sent to the District for assistance as they deal with the CPAs directly. Note that your request is getting attention, it takes time if the office has not yet met with the particular CPAs as we are having more than 400 CPAs with only 2 officials per District, they have to locate them as they are not established by our Directorate. I have copied the Deputy Director responsible in the District Mr Sebitso Thoka, you may communicate with him directly. Hope you find the above in order.	Thank you for the information provided.	Appendix D - PPP
Mr. Gilbert Masuku Department of Public Works, Roads and Infrastructure	Meeting 9 September 2021	a) Mr Masuku enquired about why this section of the N2 is called 34. b) Mr Masuku indicated that the property is being used	The answers are provided by Mr martin Boonstra and Mr Steve Skhosana of KBK Engineers. a) Mr Boonstra explained that SANRAL names sections of	Appendix D - PPP

Portion 2 of the farm Camden Power Station 329 IT		as a military base for SANDF. One family occupies the southern portion of the property and accesses the N2 through the access road which runs parallel to the Eskom conveyor belt which also runs through the property. The existing access is also being used for fire breaks maintenance. It is important for this family to be granted continued access to the N2. He indicated that the conveyor belt and wetlands on the western side of the family home act as boundaries and will make the western access impossible. c) Mr Masuku indicated that there are currently no good relations between the department and the eastern neighbour which may make traversing through his property difficult.	national roads in accordance with uniformity starting from section 1 and onwards. b) Mr Skhosana stated that the eastern access will be considered. c) Mr Boonstra indicated that SANRAL and SANRAL's service providers will handle the matter as SANRAL has the option to expropriate in the case of non-compliant land owners.	
Transnet represented by Mr Japhta Maboko and Mr Josaiah Rikhotso Portion 9 of the farm Buhrmansvallei 298	By meeting 7 May 2021	a) Mr Maboko stated that KBK must do a deed search to obtain all the above-mentioned required information. Some parts of Transnet servitude may belong to TFR (Transnet Freight Rail). Mr Rikhotso will assist with further	Information provided by Mr Martin Boonstra of KBK Engineers. Mr Skhosana explains how the widening of the road will affect Transnet property and they need assistance with formation as to an access road. Does it belong to Transnet still? Can Transnet give	Appendix D - PPP

		information. SANRAL must make an offer. b) Mr Maboko stated that KBK must perform ground work to find answers.	permission? Does Transnet still own a servitude containing this formation? If so SANRAL also needs to acquire from it a small portion for road reserve. a) Mr Boonstra stated that KBK has already done a deed search and obtained the surveyor general information but could not find the requested information. Mr Boonstra requested for Transnet to indicate whether or not the areas belong to Transnet; KBK will provide diagrams. b) Mr Skhosana agreed to take the process further with the assistance of Mr Rikhotso as suggested.	
Mr Hannes van Heerden Nick Bailey Department of Water and Sanitation	4 December 2020, 8 February 2021 by e-mail	We have 3 pipe lines crossing the N2 in Section A. The crossing occurs at -26.637114, 30.142032. I am forwarding this email to our Area Manager, Mr. M.M. Sethosa as well as Mr Vermaak, our Civil Technician, who can assist you with plans, protection specifications, dimensions, etc. for the relevant section. Please note however, that authorisation for works on or near the pipe lines need to be approved by our Head Office as the lines are of critical importance to the supply of electricity to the country.	Find hereby attached plans and letter for the request of existing services. At this stage we concentrate on the section N2-34 between Leiden (km 59.0) and Camden (km 87.4). This section is referred to as Section A. (From Mr Mias van der Merwe, KBK Engineers).	Appendix D - PPP

		The majority of the drawings/information are only available for pipeline no. 4, please see the attachments. Attachments 60940 and 60986 are for pipeline no. 3. All of the pipelines should be encased in concrete, however this cannot be guaranteed, especially for pipeline no.'s 1 and 2. Note pipeline no. 4 is in a concrete culvert and is not encased. The encasement should be for the full width of the road reserve i.e. 49m. However, at the time of constructing pipeline no.'s 1 and 2 it is likely that the road reserve was narrower. Only drawing 82811 for pipeline no. 4 indicates pipe levels, there are no levels for pipeline no.'s 1 to 3. Regardless of what the drawings indicate, the road authority must use suitable ground penetrating radar to locate the pipelines. You can search for further drawings on the link below. You need to be connected to the server to search.		
Ms Zandile Dlamini Environmental Officer Inkomati-Usuthu Catchement Management Agency	No comments received	No issues raised	No response necessary	Appendix D - PPP
Ms Portia Chawane Environmental Officer Vaal Catchement Management Agency	25 July 2021 By e-mail	Reference is made to the attached Vaal Catchment Notification Upgrade of the N2 National Route and locality plan. The notification letter indicated that "the water	The application will be made on the e-wulaas system.	Appendix D - PPP

		uses (crossing streams/rivers or within 500m of a wetland) will be applied for at the Department of Water and Sanitation in accordance with the National Water Act, (Act No. 36 of 1998)(NWA)".You are kindly advise to apply for a water use authorisation online through e-wulaas for Section 21 of NWA water uses applicable to the proposed project.		
Ms Khumbelo Malele Mr Johan Eksteen Mpumalanga Tourism and Parks Agency	30 July 2021 by e-mail	Me Malele acknowledged receipt of the notification and requested that all documentation requiring response needed to be sent via hard copy to Mr Eksteen and/or Me Mnisi	Hard copies of the documents will be sent.	Appendix D - PPP
Me Cindy Mbuyane Mpumalanga Department of Economic Development, Environmental & Tourism Directorate: Environmental Impact Management	No comments received	Me Mbuyane confirmed receipt of the written notification. No issues or comments	No response necessary	Appendix D - PPP
Mr Skhalele Njoni Acting Chief Director Mpumalanga Province Shared Services Centre Mpumalanga Department of Agriculture, Land Reform and Rural	22 July 2021 By e-mail	Mr Njoni acknowledged receipt of the written notice.	No response necessary	Appendix D - PPP
Ms Sharon van der Merwe Property Specialist Mondi (Pty) Ltd	29 July 2021	Me van der Merwe placed on record the following items: • Reducing or avoiding any loss of commercial timber • Reducing or avoiding any loss of conservation areas (e.g.	1. You are registered as an I&AP on both the roads project and the Water Use License/General Authorisation applications.	Appendix D - PPP Measures addressed in EMPr.

		• HCVs, ASIs, NB species, NB ecosystems, ecological integrity, ecological connectivity) • Ensuring the project proponent implements Duty of Care around containing all project activities, as well as relevant requirements as per the CoA / EMP. Mondi's preliminary comments are as follows: • It is noted that an Application for a Water Use Licence and/or General Authorisation will be applied for in terms of the National Water Act (Act 36 of 1998). Please register Mondi South Africa (Pty) Ltd as an Interested and Affected Party in this Application. • Please advise on where water required for construction activities will be sourced, as well as the anticipated quantity. • Mondi South Africa (Pty) Ltd. request the following detail to be included in the Draft Basic Assessment Report, as well as the associated Environmental Management Programme (EMPr) which is to be made available for public review, specific to the project: − Stormwater Management Plan;	2. The sourcing of water on the project is usually a requirement from the appointed contractor. The project will be subjected to an open tender by SANRAL in order to appoint a contractor on the project. The contractor will be required in terms of the contract documentation to source water for the project. The contractor will be required to comply with the Water Act in this regard and apply for a WUL/GA if required. 3. The management of storm water on a road is included in the design of the road and the bridges by the appointed consulting engineers to the project. Information regarding the management of storms water will be included in the BAR for the project. 4. The possible pollution by waste will be assessed in the BAR and the management of waste for general and hazardous waste will be included in the EMPr for the project. 5. Possible spills will be assessed in the BAR and the contingency of spills will be included in the EMPr for the project. 6. Mitigation measures with regard to the prevention of fires at the construction camp	

		− Waste Management Plan, inclusive of general and hazardous waste management; − Spill Contingency Plan; − Fire Management Plan, including risk management, especially with regards to Mondi South Africa (Pty) Ltd.'s landholdings; − Alien Invasive Plant Monitoring Plan; − Traffic Management Plan; − Dust Management Plan; and − Emergency Response Procedure Plan. • Detail on the location and size of the construction site camp is required. • Detail on the anticipated duration of construction is required, as well as estimated construction start timeframes, pending tender award. • Detail on how access to Mondi South Africa (Pty) Ltd.'s landholdings will be controlled. • Under no circumstances are Mondi South Africa (Pty) Ltd.'s landholdings to be used as construction thoroughfare access routes. • Under no circumstances are Mondi South Africa (Pty) Ltd.'s plantations landholdings to be utilised as temporary	site will be included in the EMPr for the project. 7. Mitigation measures with regard to the monitoring and management of alien vegetation on the project will be included in the EMPr for the project. 8. The consulting engineers to the project will compile a traffic management plan for the project that will be included in the BAR. 9. Mitigation measures with regard to dust control on the project will be included in the EMPr for the project. 10. An Emergency Response Procedure plan is usually required in terms of the safety conditions that the contractor on site must comply with. However, mitigation measures will be included in the EMPr for major emergencies pertaining to the environment for instance major spills. 11. Recommendations will be included in the BAR pertaining to possible locations for the construction site camp on disturbed land. However, once the contractor is appointed, he/she will be required to source the location for the construction camp and any area that is chosen will be	

		materials or laydown areas during construction. • Under no circumstances is cement to be mixed on any permeable surface. This is a very specific issue and can be assessed when we receive the draft Basic Assessment report. • Detail on the number of ablutions facilities that will be made available to construction staff and at what ratio is required. Further, reassurance is required that a reputable service provider will collect and dispose of ablution waste at a licensed facility. Waste management is covered under above list of plans required by us. These are very specific issues and can be assessed when we receive the draft Basic Assessment report. • During construction topsoil will require stripping. Please advise where the stripped topsoil will be stockpiled, as well as detail its end-use. • An assurance that progressive rehabilitation will occur along the entire alignment is required. i.e. rehabilitation of affected areas will occur as soon as construction is complete in a specific area	subject to the approval of the relevant landowner. 12. The detail on the duration of construction will be included in the BAR. The possible commencement date is very difficult to provide as it will depend on the duration of the land acquisition process, environmental process and tender process for the project. 13. The appointed contractor will be responsible for the management of the staff on the project. This will include access to any land that is beyond SANRAL'S road reserve, including Mondi's land. However, the unlawful access to Mondi's land by any person that is not part of the staff is beyond the contractor's control. 14. Any access route that will be used by the appointed contractor will be subject to the approval by the landowner. If the landowner would need to make use of an access road that is on Mondi's land, approval will need to obtained from Mondi before the access road can be used. 15. Areas will be included in the BAR for possible use by the appointed contractor for temporary laydown areas on disturbed land during construction. Any land that the	

		and not at the end of the project. • An acknowledgment from both the Applicant and Contractor of the Polluter-Pays Principle and Duty of Care in terms of the National Environmental Management Act (Act No. 107 of 1998). • Post-construction, please advise how the new road reserve will be managed by SANRAL. We reserve the right to submit further comments once we have received and reviewed the Draft Basic Assessment Report.	contractor will use will be subject to landowner's consent in any event. 16. Mitigation measures for the mixing of cement will be included in the EMPr for the project. 17. Detail on the management of sewage at the construction camp and at the road site will be included in the EMPr for the project. This will include the number of ablutions facilities that will be made available to construction staff and at what ratio is required and reputable service providers. 18. Mitigation measures with regard to topsoil stripping and storage will be included in the EMPr for the project. The topsoil will be used for the rehabilitation of the road site following the construction phase. The topsoil will be spread onto the road reserve or any area that was disturbed and will be hydroseeded. 19. The rehabilitation of the project will be in terms of the contract with the contractor which usually includes progressive rehabilitation. 20. The appointed contractor will be obliged to comply with all the laws during construction including the NEMA Act. The Polluter-Pays and Duty of Care principles are included in	

			NEMA. The appointed contractor will also appoint his own environmental officer who will assist in this regard. 21. The appointed contractor will be subject to a one year defects liability period on the project following the rehabilitation of the site. Thereafter, the SANRAL has routine road maintenance that is conducted by appointed contractors on all their roads on the entire national road network. There will also be contractors appointed to conduct routine road maintenance on these roads following the rehabilitation of the site. Please also be assured that there will be checks and balances in place during the construction phase in order to ensure that the contractor complies with the environmental authorisations, permits and approved EMPr for the project. Over and above the environmental officer that will be appointed by the contractor, an independent environmental auditor will be appointed on the site that will conduct audits that will be submitted to the National Department of Forestry, Fisheries and the Environment for approval.	
Services				

Dark Africa Fibre Mr Charles Rohmann Mr Lourens Maritz	13 July 2020	Information on how it could possibly affect the fibre was forwarded to KBK Engineers.	Plans of the project were forwarded by KBK Engineers.	None required.
Communities				
Thandanani Khululekani Vereniging vir Gemeenskaplike Eiendom Represented by Mr Mr Moss Mtshali Portion 0/12 of the farm Weltevreden 289	Meeting 2 October 2020	a) Mr. Mtshali indicated that he represents the community and not Mr. David Ngwenya; b) Mr. Mtshali had no objection to the proposed changes, access proposal and land acquisition requirements; c) Mr. Mtshali requested that fencing be provided along the N2 and also for other access roads. d) Mr Mtshali also indicated that there is a maize field affected by the proposed widening to the road reserve. e) Mr. Moss Mtshali indicated that there are no graves, houses, dams, bore holes, land claims, mining rights or other improvements on the affected land. He indicated that he will communicate the details of the meeting to the rest of the Community.	Answer provided by Mr Martin Boonstra of KBK Engineers: a) Mr. Boonstra indicated that future communication will be with him. b) Mr. Boonstra indicated that the Roodewal Road will be closed and relocated to a safer location. Mr. Boonstra explained that with the changes proposed the Overvaal and Roodewal T-junctions will be aligned into one intersection, with stagged crossing for trucks, at a safer location. An additional Farm Access will also be provided on the Eastern side of the Farm. This access will also provide access to other adjacent properties. Mr. Moss Mtshali requested that fencing be provided along the N2 and also for other access roads. c) Mr. Boonstra noted that this will be accommodated during construction; d) Mr. Boonstra indicated that losses associated with this should be compensated for during the acquisition process; e) Mr Boonstra thanked him for	Appendix D - PPP

			the information provided.	
Machobeni Communal Prop Association Represented by Dr D Dladla and Mr B Nkosi	Meeting 1 October 2020	a) Both Mr. D. Dladla & Mr. B. Nkosi approved of the relocation proposal; Mr. D. Dladla indicated that the proposed acquisition will affect approximately 9 houses located in close proximity of the existing road reserve. Small vegetable gardens may also be affected by the land acquisition process. These structures of the houses consist of either Zink, Mud or Brick. Both Mr. D. Dladla & Mr. B. Nkosi, indicated that Mr. Dladla represents the occupants of these houses; b) There are many houses located on this property spread out over the area. With the relocation of the access, internal roads must be provided/re-instated to take all access of these houses to the new consolidated access point on the N2. Mr. Boonstra took note of this request and will look into the planning of such roads; c) Mr. D. Dladla also requested that preference should be given to the employment of local people during the construction phase of the project. Mr. Boonstra indicated that a Project Liaison	Information provided by Mr Martin Boonstra of KBK Engineers. a) Mr. Boonstra indicated that the access to the property will be relocated to the Amersfoort Intersection. b) Mr. Boonstra took note of this request and will look into the planning of such roads; c) Mr. Boonstra indicated that a Project Liaison Committee (PLC), consisting of leaders of the local community, will be established to facilitate the employment of local people during construction; d) Mr. Boonstra indicated that currently it is not anticipated that the road will be tolled. e) Thank you for the support of the project.	Appendix D - PPP

		Committee (PLC), consisting of leaders of the local community, will be established to facilitate the employment of local people during construction; d) Mr. Dladla enquired if the route will be tolled. e) Mr. Dladla had no objection the proposed changes, access proposal and land acquisition requirements. He indicated that there are no graves, no land claims, no mining rights and no other improvements on the affected land.		
Mr Mr P Nhlapho Representative of Mpisikazi Communal Association Lawful occupiers of land Mavieriestad 321-IT Portion 0/5 of the farm Mavieriestad 321 Portion 7 of the farm Mavieriestad 321 Portion 0/2 of the farm Mavieriestad 321 Portion 11 of the farm Mavieriestad 321 Portion 8 of the farm Mavieriestad 321 Portion 0/4 of the farm Mavieriestad 321	Meeting 13 October 2020	Portion 0/2 of the farm Mavieriestad 321: a) The Ndlangamandla family lives close to service road to the North of the N2. The house, a face brick house, may be affected by the service road. b) There may be a borrow pit that is affected by the project proposal; c) Mr. Nhlapo had no objection the proposed changes, access proposal and land acquisition requirements. He indicated that there are no graves, no land claims, no mining rights and no other improvements on the affected land; Portion 0/4 of the farm	Answers provided my Mr Martin Boonstra of KBK Engineers. Portion 0/2 of the farm Mavieriestad 321: a) KBK reviewed the design and can confirm that the house referred to by Mr. Nhlapo is not affected by the Service Road alignment. b) The borrow pit will not be affected. c) Thank you for the support and information provided. Portion 0/4 of the farm Mavieriestad 321:	Appendix D - PPP

		Mavieriestad 321: a. The Occupant on this property is Mr. Mandla Yende. b. Mr. Nhlapo requested that the Service Road not be fenced on this property; c. Mr. Nhlapo had no objection the proposed changes, access proposal and land acquisition requirements. He indicated that there are no graves, no land claims, no mining rights and no other improvements on the affected land; Portion 0/5 of the farm Mavieriestad 321: a. There is approximately 30ha of maize being cultivated on this property. d. Mr. Nhlapo had no objection the proposed changes, access proposal and land acquisition requirements. He indicated that there are no graves, no land claims, no mining rights and no other improvements on the affected land; Portion 7 of the farm Mavieriestad 321: a. There is maize being cultivated on this property. b. Mr. Nhlapo had no objection the proposed changes,	a. Mr. Yende's homestead is not affected by this road development; b. The service road will not be fenced. c. Thank you for the support and information provided. Portion 0/5 of the farm Mavieriestad 321: a. The maize fields are not affected by the project. b. Thank you for the support and information provided. Portion 7 of the farm Mavieriestad 321: a. The maize fields are not affected by the project.	

		access proposal and land acquisition requirements. He indicated that there are no graves, no land claims, no mining rights and no other improvements on the affected land; Portion 8 of the farm Mavieriestad 321: a. There is approximately 40ha of Maize being cultivated on this property. b. There are bluegum trees that will be affected. These Bluegum trees are used by the occupants for own use and for minor subsistence farming. Mr. Nhlapo requested that wood of trees removed during construction must be left on the property for use by the Occupant; c. The Motha family lives close to service road to the South of the N2. The house, may be affected by the service road. d. Mr. Nhlapo had no objection the proposed changes, access proposal and land acquisition requirements. He indicated that there are no graves, no land claims, no mining rights and no other improvements on the affected land;	b. Thank you for the support and information provided. Portion 8 of the farm Mavieriestad 321: a. Maize fields not affected by the project proposal; b. The bluegum trees will be left to the occupants. c. KBK reviewed the design and can confirm that the Motha family house is not affected by the service road alignment. d. Thank you for the information. e. It will be instated as agreed.	

		e. Mr. Nhlapo requested that the service road be fenced and gates to be provided to maintain access across the service road. Gates also to be provided on all property boundaries where service road traverse over more than one property. Portion 11 of the farm Mavieriestad 321: The affected land is utilized for grazing; a. Mr. Nhlapo requested that the service road be fenced and gates to be provided to maintain access across the service road. Gates also to be provided on all property boundaries where service road traverse over more than one property; b. Mr. Nhlapo had no objection the proposed changes, access proposal and land acquisition requirements. He indicated that there are no graves, no land claims, no mining rights and no other improvements on the affected land;	Portion 8 of the farm Mavieriestad 321: a. It will be instated as agreed. b. Thank you for the information.	
Mr Z Nkosi and Mr Isaac Ndinisa Representative of Bambanani Sakhasizwe Property Association Lawful occupiers of land Farm Twyfelaar 298-IT	Meeting 2 October 2020	a) Mr. Ndinisa indicated that approximately 8 homesteads with associated gardens and a bore hole are affected by the proposed acquisition;	Answers provided by Mr Martin Boonstra of KBK Engineers. a) Mr. Boonstra indicated that it will be taken into	Appendix D - PPP

		b) Mr. I Ndinisa requested that the proposed boundaries of the new road reserve and the land required be staked by SANRAL before they further engage with them. Staking will be required to properly communicate the required area; c) Mr. Ndinisa enquired how the occupants affected by the road development will be compensated for their houses. d) Mr. Ndinisa had no objection the proposed changes, access proposal and land acquisition requirements. He indicated that there are no graves, no land claims, no mining rights and no other improvements on the affected land.	account during the land acquisition process. b) Mr. Boonstra noted that SANRAL will only acquire and pay for the portion of land required for the road infrastructure; c) Mr. Boonstra indicated that SANRAL prefer to engage with the Leaders of the Community to identify suitable land for the relocation of the affected homeowners. Once land has been identified SANRAL will most probably reconstruct replacement houses on these new stands. The houses to be constructed will relate to the quality and size of the houses that will be replaced. Another option is to compensate the owner financially to obtain his own replacement property and construct his own house. This is however not preferred by SANRAL due to various reasons; d) Mr. Boonstra indicated how the access to their farm will be amended to. He also explained the changes of access to the Mpisikazi Communal Association's property and	

			how it will affect the access to their property.	

7.2 The Environmental Attributes Associated with Alternatives

The environmental attributes described below include socio-economic, social, heritage, cultural, geographical, physical and biological aspects.

7.2.1 Baseline Environment

a. Topography

The topography is that of slight to moderately undulating plains, with some low hills and pan depressions scattered throughout the landscape. Rocky outcrops (koppies) and rocky ridges are rare in the region, with none occurring within the study area. Valleys, in which small streams flow or wetlands are found, tend to be shallow, flat and broad. The general first impression of the landscape is that of flat, open homogenous grasslands and farmlands, with few distinctive features such as koppies.

From Leiden to Camden the N2 route is relatively flat and tends to only climb from around 1600m above sea level to around 1660m above sea level. The route does however, have higher points along the way with elevations of 1 737m and 1 723m, which is approximately and area in the middle of the route (Flori Scientific Services, 2022).

b. Geology and Soils

The soils of the region and study area are predominantly red to yellow, sandy soils occurring on shales and sandstones of the Madzaringwe Formation (Karoo Supergroup). Soil types (Land types) are predominantly Bb and Ba types (Mucina & Rutherford, 2006). Approximately the northern 20% of the linear study area is within Rand Highveld Grassland. However, there is little distinctive difference between the veldtypes across the study area. The study area is more characteristic of Eastern Highveld Grassland, not just in terms of vegetation but soils as well.

The geology and soils of Rand Highveld Grassland areas are characterised by quartzite ridges of the Witwatersrand Supergroup and the Pretoria Group as well as the Selons River Formation of the Rooiberg Group (last two are of the Transvaal Supergroup), supporting soils of various quality (shallow Glenrosa and Mispah forms especially on rocky ridges), typical of Ba, Bc, Bb and Ib land types (Mucina & Rutherford, 2006) (Flori Scientific Services, 2022).

c. Climate

The study area is situated within the higher rainfall regions of South Africa (601mm – 800mm per annum). Summer rainfall with a mean annual precipitation (MAP) of between 600mm+ is common in the region of the Mpumalanga Highveld's moist grasslands. Frost is fairly common during the cold winter months of June to August, with early morning mist being a common occurrence.

The climate of the study area is similar to that of the close by town of Ermelo. Ermelo receives on average about 625mm of rainfall per year, with most rainfall occurring during summertime. The average midday temperatures for Ermelo range from 15,8°C in June, to 24.1°C in January. The region is the coldest during June/July with average night temperatures of around 0,2°C. The study area is situated within the Cold Interior Climatic Zone of the country (Flori Scientific Services, 2022).

d. Land cover

The landcover or land use along the length of the study area is predominantly that of plantations in the south / southeast and farming in the north / northwest. The main forms of farming are dryland maize cultivation and cattle, where the open grassland fields are intensely grazed. Opencast coal mining has become another major land use in the north / northwest of the study area. However, most of the land is either cultivated or grazed and does not constitute true, natural open and pristine grasslands anymore. Numerous plantations occur in the area which are mainly eucalypts (gum trees) and pine trees. The plantations are totally transformed grasslands. It must also be kept in mind that the road reserve area is regularly mowed and as such tends to acquire certain characteristics of that of a lawn. No pristine grassland areas are found in the study area.

The areas mostly remaining as natural are the wetlands, pans, streams and moist grasslands, where it is usually too wet for maize production. However, even these areas are not pristine and are frequented and negatively impacted upon by farmers ploughing through them, cattle and other livestock. The level of urbanisation in the area is scattered and low-density (Flori Scientific Services, 2022).

e. Vegetation

South Africa is divided up into nine Biomes. The study area is situated within the Grassland Biome.

The Grassland Biome can be naturally subdivided into dry and moist grassland regions. Grassland veld types with a rainfall of 600mm+ per annum tend to be dominated by sour, andropogonoid grasses. While in vel dtypes with an average rainfall of below 600mm per annum, the sweet chloridoid grasses tend to be more common. Dry and moist grassland types are divided primarily on the basis of rainfall, with 500-700mm being the broad boundary. Historically, such as with the classification of veld types by JPH Acocks (1952) and AB Low & AG Rebelo (1998), these grasslands have been divided into sweet grasses (sweetveld) and sour grasses (sourveld) based primarily on agricultural criteria. In high rainfall areas (moist grasslands) sour grasses tend to dominate, while in low rainfall areas the sweet grasses (which are more palatable for livestock) tend to dominate. Grasslands (like any other vegetation type) are also influenced and shaped by numerous environmental factors such as temperature, soils and altitude.

Mucina and Rutherford (eds) (2006) subdivided the Grassland Biome into four main bioregions i.e. Dry Highveld Grasslands; Drakensberg Grasslands; Meisic Highveld Grasslands; and Sub-Escarpment Grasslands. These subdivisions of the Grassland Biome are based on gradients of altitude (height above sea-level) and moisture (rainfall). Altitude has a strong

influence on climatic variables and an increase in altitude usually corresponds with an increase in rainfall and a decrease in temperature. Grassland vegetation types are dominated by a single, lower layer of grasses, with the occurrence of a middle layer of shrub and upper layer of trees being rare to absent, except in a few localised habitats such as koppies (rocky outcrops) and rocky ridges.

The study area occurs within the Mesic Highveld Grassland Bioregion of the Grassland Biome of South Africa (Flori Scientific Services, 2022).

Table 8: Vegetation classification of the study site (Flori Scientific Services, 2022)

Category Description	Classification
Biome	Grassland
Bioregion	Mesic Highveld Grassland
Vegetation Types	Eastern Highveld Grassland.

f. Vegetation of the study area

The vegetation all along the study area and in the general region is highly impacted upon. Most of the grasslands have been totally transformed from years of cultivation and plantations, and to a degree also from opencast coal mining. No pristine Eastern Highveld Grassland areas exist within or immediately adjacent to the study area.

Numerous wetlands are scattered throughout the Mpumalanga Highveld grasslands. There are a number of valley-bottom wetlands, seepage wetlands and freshwater pans present in the region. Mucina & Rutherford (2006) felt that these open bodies of freshwater wetlands were distinct enough to be classified separately in terms of veldtypes or ecosystems. This can be seen in the map on veldtypes of the study area. These Eastern Temperate Freshwater Wetlands are not in pristine condition but are all viewed as sensitive and important. The proposed project does not impact on any of these freshwater wetlands or freshwater pans (Flori Scientific Services, 2022).

g. Priority Floral Species

No Red Data species (endangered, threatened or vulnerable) were observed during field investigations. According to the SANBI database a few Red Data species have been recorded in the region of the QDS quadrants, but it is unlikely that any of these species are present in the study area (Table 3). This, however, is not to say for certain that none occur. Due to the regular cutting of the grass in the study area, as well as the grazing of free-roaming cattle and the total transformation of large areas by plantations, the species richness is low in and around the study area (Flori Scientific Services, 2022).

h. Conservation Status

According to the most recent Mpumalanga Biodiversity Sector Plan (2014), Eastern Highveld Grassland is listed as Endangered (EN). Mucina & Rutherford (2006 & 2010) also classified Eastern Highveld Grassland as endangered (EN).

No Red Data species were observed during field investigations. No Orange Data species were found within the study area corridor, but some were found in the wetter grassland areas and wetland / stream areas such as *Boophone disticha*, while others such as *Haemanthus humilis* in the drier areas (Flori Scientific Services, 2022).

No protected tree species were found in the study area during field investigations. None are expected to occur.

i. Fauna

Due to the large extent of the transformed nature of the study area the species richness will be low. Ideal habitats for most large or priority faunal species are rare to non-existent, with the exception of the pans, wetlands and streams. However, even these are under pressure with lack of adequate bufferzones and corridors and none are in a pristine condition (Flori Scientific Services, 2022).

j. Water Courses

The study area route crosses over only one main river or stream, namely the Ngwempisi River, and another small, unnamed stream. Besides the two streams there are only a few minor and small drainage lines and stormwater culverts along the study area route of the road (Flori Scientific Services, 2022).

Watercourse	Coordinates	Comments
Small, seasonal drainage line	26°49'13.66"S 30°28'48.30"E	Highly impacted on by plantations. No riparian zone. Can only be partially delineated on the west side and less so on the east side of the N2 due to planting of pine trees right in the watercourse areas.
Small, seasonal drainage line	26°48'58.99"S 30°28'16.37"E	Small, seasonal drainage line and stormwater culverts. Highly impacted on and modified.
Small, seasonal drainage line	26°48'59.17"S 30°28'16.62"E	Small, seasonal drainage line and stormwater culverts. Highly impacted on and modified. (Is basically part of the same system as 662)
Small wetland and moist grassland area	26°47'44.94"S 30°25'27.24"E	A small wetland and moist grassland area west of the N2 road. Areas both sides of road are regularly burnt mowed and even planted (afforestation). Therefore, cannot be properly delineated.

Watercourse	Coordinates	Comments
Small, seasonal drainage line	26°46'19.69"S 30°23'46.63"E	Drainage line & associated seep areas. Highly transformed and impacted on by plantations in and around watercourse.
Ngwempisi River	26°46'8.34"S 30°23'20.35"E	At time of field investigations flowing strongly. No trees and no distinctive riparian zone. Grass, with some sedges & bulrushes
Small wetland / moist grassland area	26°44'10.47"S 30°19'39.56"E	Drainage line with associated seep areas and moist grassland
Unnamed, semi-perennial stream	26°43'59.04"S 30°18'12.91"E	Small stream with low, stagnant water levels at time of field investigations in winter. Some associated wetland areas to the north but outside of study area
Wetland area	26°43'55.71"S 30°17'47.93"E	

k. Air Quality

The project occurs in rural areas and the air quality is considered good apart from the air pollution that emanates from the N2.

l. Noise

The current noise levels are high due to the presence of heavy traffic on the N2.

m. Visual

The countryside through which the N2 road passes is largely one of rural agriculture on an undulating landscape. The widening of the road will have little visual effect as the existing road will be widened.

n. Sites of Archaeological and Cultural Interests

There are no sites of archaeological or cultural interests that were identified in the area.

o. Socio-Economic Aspects

The project could have a positive impact on the regional socio-economic structure through its support of the development industry, profit generation contributing to tax revenue, employment creation and the skills development of its employees.

p. Sensitive Landscapes

The study area route crosses over only one main river or stream, namely the Ngwempisi River, and another small, unnamed stream. Besides the two streams there are only a few minor and small drainage lines and stormwater culverts along the study area route of the road (Flori Scientific Services, 2022).

Please find a sensitivity plan included in Appendix B.

q. Cumulative Impacts

The cumulative impacts associated with the upgrade of the road could be the following (based on experience with regard to other major road upgrade projects):

- Additional traffic on the local roads during construction;
- Possible time delays as a result of construction period;
- Possible influx of people searching for employment opportunities in the area during construction.

8. Possible Project Benefits

8.1 Economic Benefits

a. Short term Employment Creation

New employment opportunities will be created during the construction of the road. This includes much needed employment for existing industry, i.e. contractors (especially local Small, Medium and Micro Enterprises from the previously disadvantaged communities), consultants and suppliers.

The construction of the road could take place over several years, requiring a potentially large workforce and possible employment opportunities could be created in the project area. The benefits to the local community from employment could be dependent on the extent of local recruitment.

During the operational phase, the roads project could improve the well-being of populations in the area, and potentially improve the economy as a result of improved transport infrastructure.

b. Long Term Employment Creation

Sustainable employment opportunities will be created for industry (contractors, consultants) during operation and maintenance of the road. Periodic upgrading, maintenance and rehabilitation of the road will be conducted over the next 20 years.

c. Enhance Tourism

The road could enhance tourism through improved accessibility and a continuous route offering an improved, safer road for all road-users.

8.2 Social Benefits

a. Employment

The road could provide long and short term employment opportunities, especially employment for industry. The development could provide employment to unskilled labour in both road and associated developments especially local Small, Medium and Micro Enterprises from the previously disadvantaged communities.

b. Improve Safety

The possibility of head-on collisions will be lowered with the upgrade of the road which will be much safer for all road users, especially heavy vehicles.

c. Skills Development

With the construction of the road, skills development could occur with practical training in management and technical skills. This could also include unskilled labour training and the use of small and medium enterprises.

8.3 Transport Benefits

a. Important Transportation Link and Improved Accessibility:

The N2 serves as a development spine and the link between Richards Bay and Gauteng. Improved road networks could encourage business, industry and investment for South Africa and assist in alleviating the high unemployment in the region as a whole.

b. Relieve Traffic Congestion

Traffic congestion occurs in the pass as a result of queueing of heavy vehicles. The new alignment would alleviate these issues.

9. Possible Impacts and Risks Identified

The ***potential*** impacts associated with the project and the degree to which these impacts can be reversed or may cause irreplaceable loss of resource and can be avoided, managed or mitigated are the following:

Table 9: Potential Impacts and Risks Identified

Potential Impact	Reversed Y/N or n/a	Irreplaceable loss	Avoided, Managed, Mitigated
Dust Nuisance	Yes	No	Mitigated
Soil Erosion	Yes	Yes	Avoided, Mitigated
Loss of topsoil	Yes	No	Avoided
Noise Impact	Yes	No	Avoided, Mitigated
Water Pollution	Yes	No	Avoided, Mitigated
Visual Impact	Yes	No	Avoided, Mitigated
Clearing of protected trees	Yes	No	Mitigated
Mammals and snakes in road reserve	Yes	No	Managed, Mitigated
Uncovered heritage sites and graves	Yes	No	Managed, Mitigated
Contamination of site due to hydrocarbon spillage	Yes	No	Avoided, Managed
Emissions from heavy vehicles	Yes	No	Avoided, Managed
Infestation of weeds and alien vegetation	Yes	No	Managed, Mitigated
Possible pollution of solid waste	Yes	No	Managed, Mitigated
Possible sewage pollution	Yes	No	Managed, Mitigated
Possible pollution of fuels and gas as a result of inadequate storage	Yes	No	Managed, Mitigated
Possible pollution by cement or concrete	Yes	No	Managed, Mitigated

9.1 Methodology Used in Determining Impacts

Potential environmental impacts on the environment will be determined in terms of the following in order to determine the significance of each impact:

Nature:

A brief description of the environmental aspect being impacted upon by a particular action or activity is presented. Also:

- Probability (how likely is it that the impact will occur?)
- Magnitude (how severe will the impact be?)
- Duration (how long will the impact last?)

- Scale of the impact (what size of the area will be affected?)

Thereafter, mitigation measures will be proposed in order to reduce or eliminate negative impacts and enhance positive impacts. The impact of the proposed activity on the environment will be considered for the pre- construction, construction and operational phases. The necessary mitigation measures will be consolidated in the form of an Environmental Management Programme (EMPr).

Assessment of significance – method:

The significance of every environmental impact identified will be determined using the following approach:

In assessing the potential significance of an impact two aspects will be considered:

i) Occurrence
ii) Severity

Occurrence will be sub-divided into:

- Probability of occurrence
- Duration of occurrence

Severity will be sub-divided into:

- Magnitude (severity) of impact
- Scale/extent of impact

In order to assess each of these factors for each impact, ranking scales were employed as follows:

Probability:	Duration:
5 - Definite/don't know	5 - Permanent
4 - Highly probable	4 - Long-term*
3 - Medium probability	3 - Medium-term (5-15 years)
2 - Low probability	2 - Short-term (0-5 years)
1 – Improbable	1 - Immediate
0 – None	0 - None

Scale:	Magnitude:
5 – International	10 - Very high/don't know
4 – National	8 - High
3 – Regional	6 - Moderate
2 – Local	4 - Low
1 - Site only	2 - Minor
0 – None	0 - None

*impact ceases after operational life of the activity

Once the above factors had been ranked for each impact, the overall risk (environmental significance) of each impact will be assessed using the following formula: SP = (magnitude (M) + duration (D) + scale(S)) x probability (P). The maximum value is 100 significance

points (SP). Environmental impacts will be rated as either of High, Moderate or Low significance on the following basis:

SP greater or the same as 60 indicates high environmental significance;
SP 31 greater or the same as 59 indicates moderate environmental significance;
SP ≤ 30 indicates low environmental significance.

Risks associated with alternatives: The risks associated with the alternatives are deemed to be low.

9.2 Positive and Negative Impacts and Assessment

The following table provides the positive and negative impacts associated with the project and the impact assessment undertaken. The mitigation measures are also included in the table.

Table 10: Positive and Negative Impacts and Assessment

POTENTIAL ENVIRONMENTAL IMPACT	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION						RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION					
		M	D	S	P	TOTAL	SP		M	D	S	P	TOTAL	SP
AIR AND DUST POLLUTION														
Possible air and dust pollution	**Construction Phase**: Vegetation, stripping, stripping and stockpiling of topsoil, subsoil, overburden and spoil **Operational Phase:** Excavations, Stockpiling and Transporting of gravel material **Decommissioning Phase:** Sloping and Landscaping during rehabilitation, Replacing the topsoil and revegetating the disturbed area	6	2	2	4	40	M	• Dust will be suppressed through a watering management programme, especially during windy conditions. • Dust generated will be carefully monitored by the DEO and should be suppressed by means of watering regularly. • Access roads will be watered regularly, especially in the dry winter months and in periods of high wind. • Vegetation will not be unnecessary stripped. • Domestic fires will be prohibited on site. • Heavy vehicle will be serviced regularly to ensure emission control. • All heavy vehicles, excavators and generators used on site will be in good working condition and will be serviced regularly.	2	2	3	1	8	L

POTENTIAL ENVIRONMENTAL IMPACT	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION						RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION					
		M	D	S	P	TOTAL	SP		M	D	S	P	TOTAL	SP
								• Should a vehicle have a break down, it will be serviced immediately.						
SOIL EROSION														
Possible soil erosion	**Construction Phase**: Vegetation, stripping, stripping and stockpiling of topsoil, subsoil, overburden and spoil **Operational Phase:** Excavations, Stockpiling and Transporting of gravel material **Decommissioning Phase:** Sloping and Landscaping during rehabilitation, Replacing the topsoil and revegetating the disturbed area	4	2	2	2	16	L	• Topsoil will be removed over the section to be widened and stored in a perimeter berm. The height of the topsoil berm will not exceed 3m. • The topsoil berm will be inspected for erosion daily. • Minimal amounts of topsoil shall be lost due to erosion, either by wind or water. This can be facilitated through the grassing of topsoil stockpiles. • Condition of soil in walk or drive areas should be checked daily for erosion. • Access road condition will be checked daily. • If erosion is noted at walk and drive areas, access road or topsoil berms, the erosion channel will be fixed by placing cut vegetation, sandbags or rocks within the erosion channel and the cause of the erosion will be	2	2	2	2	12	L

POTENTIAL ENVIRONMENTAL IMPACT	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION						RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION					
		M	D	S	P	TOTAL	SP		M	D	S	P	TOTAL	SP
								mitigated through the creation of runoff channels.						
NOISE														
Possible Noise Impact	**Construction Phase**: Vegetation, stripping, stripping and stockpiling of topsoil, subsoil, overburden and spoil **Operational Phase:** Excavations, Stockpiling and Transporting of gravel material **Decommissioning Phase:** Sloping and Landscaping during rehabilitation, Replacing the topsoil and revegetating the disturbed area	6	2	2	5	50	M	• The working hours shall be limited to between 07:00 hrs and 18:00 hrs on weekdays, and 07:00 hrs and 16:00 hrs on Saturdays, or as per contract documentation. • Vehicles must be driven at a moderate speed (50 kph) on private roads. • Noise generated from heavy vehicles shall only be carried out during normal working hours. • Extended working hours will be in accordance with contract documentation. • SANRAL shall be obligated to maintain vehicles used at the site in a good condition; • SANRAL will be obliged to ensure that all personnel on site apply occupational health and safety requirements with respect to hearing protection.	2	2	2	5	30	L

POTENTIAL ENVIRONMENTAL IMPACT	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION						RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION					
		M	D	S	P	TOTAL	SP		M	D	S	P	TOTAL	SP
VISUAL														
Possible visual impacts	**Construction Phase**: Vegetation, stripping, stripping and stockpiling of topsoil, subsoil, overburden and spoil **Operational Phase:** Excavations, Stockpiling and Transporting of gravel material **Decommissioning Phase:** Sloping and Landscaping during rehabilitation, Replacing the topsoil and revegetating the disturbed area	2	2	2	3	18	L	• Where areas are going to be disturbed through the destruction of vegetation, use appropriate indigenous and endemic plants to replace screening vegetation lost. • If practically possible, locate construction camps in areas that are already disturbed or where it isn't necessary to remove established vegetation. • Keep the construction sites and camps neat, clean and organised (i.e. no littering) in order to portray a tidy appearance. • In visually sensitive areas screen the construction camp and lay-down yards by enclosing the entire area with a dark green or black shade cloth of no less than 2 m height. • Maintain natural vegetation where possible. • Rehabilitate disturbed areas as soon as practically possible after construction. This should be done to restrict extended periods of exposed soil.	2	2	2	2	12	L

POTENTIAL ENVIRONMENTAL IMPACT	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION						RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION					
		M	D	S	P	TOTAL	SP		M	D	S	P	TOTAL	SP
								• Utilise existing screening features such as dense vegetation stands or topographical features to place the construction camps and lay-down yards out of the view of sensitive visual receptors. • Where vegetation clearance must be done for safety reasons, this should be kept to a minimum. • Hydro-seeding must be undertaken as soon as possible after rehabilitation has commenced. • The success of hydro-seeding must be monitored over a period of 1 year and be repeated in areas of low success.						
AQUATIC AND TERRESTRIAL ECOLOGY														
Possible impacts on terrestrial ecology	**Construction Phase**: Vegetation, stripping, stripping and stockpiling of topsoil, subsoil, overburden and spoil **Operational Phase:** Excavations, Stockpiling and Transporting of gravel material **Decommissioning Phase:** Sloping and Landscaping during	6	2	2	4	40	M	• No protected trees will be removed or destroyed. • The footprint of the project is small in relation to the area and mostly within an already disturbed and altered environment. • Three main rivers will be crossed along with a few small semi-perennial streams and drainage lines. The long-term impact of the upgrade of the	4	2	2	2	16	L

POTENTIAL ENVIRONMENTAL IMPACT	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION						RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION					
		M	D	S	P	TOTAL	SP		M	D	S	P	TOTAL	SP
	rehabilitation, Replacing the topsoil and revegetating the disturbed area							actual watercourse crossings is a positive impact, because it will improve water flow, remove blockages, stabilise stream banks, reduce existing erosion of stream banks and riparian areas. • Minimal riparian vegetation will be lost (need to be removed) as the project involves the upgrade and not totally new crossings. The upgrade will also not include little to no need to remove trees and other riparian vegetation. • Any temporary storage, lay-down areas or accommodation facilities to be setup in existing built-up areas or disturbed areas. No temporary storage areas, laydown areas or site offices are allowed within a **100m** of the edge of any river, stream or distinctive drainage line. • No temporary storage areas, laydown areas or site offices are allowed within a **100m** of the edge of any river, stream or distinctive drainage line. That is, a **100m buffer zone** (no-go zone) for these sites are required along all watercourses. • Ensure small footprint during construction phase						

POTENTIAL ENVIRONMENTAL IMPACT	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION						RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION					
		M	D	S	P	TOTAL	SP		M	D	S	P	TOTAL	SP
								• An Erosion Plan to be implemented and monitored during the construction phase, especially in the area of watercourses and steep gradients along escarpment edges. The erosion potential is moderate to low. This also to further reduce the potential of siltation of small watercourses. The plan need only be basic, but needs to be monitored. • All hazardous materials must be stored appropriately to prevent these contaminants from entering the water environment; • All excess materials brought onto site for construction to be removed after construction and their removal seen as part of the construction phase. • No open trenches or mounds of soils to be left. • Rehabilitation plan for disturbed areas to be compiled and implemented as part of the construction phase. • The most important recommendations arising from the study is the need for 100m buffer zones around watercourses in which no temporary						

POTENTIAL ENVIRONMENTAL IMPACT	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION						RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION					
		M	D	S	P	TOTAL	SP		M	D	S	P	TOTAL	SP
								laydown areas, site offices or campsites may be set up. • An independent ECO is recommended to monitor operations and ensure that recommended mitigating measures, including buffer zones, are implemented and adhered to.						
HYDROCARBON SPILLAGES														
Hydrocarbon spillage	**Construction Phase**: Vegetation, stripping, stripping and stockpiling of topsoil, subsoil, overburden and spoil **Operational Phase:** Excavations, Stockpiling and Transporting of gravel material **Decommissioning Phase:** Sloping and Landscaping during rehabilitation, Replacing the topsoil and revegetating the disturbed area	6	3	2	3	27	L	• All heavy vehicles, excavators and generators used for the project will be in good working condition. • A drip tray will be available to place underneath heavy vehicles while the vehicles are parked at night. • Should a vehicle have a break down, it will be serviced immediately. If soil contamination with diesel and oils occurred, the spill will be cleared up promptly. If the spill is small, it will be cleaned with a spill kit. if the spill is large, a spill clean-up company will be used to clean-up the spill; • Proper functioning of heavy vehicles will be ensured.	2	3	2	2	14	L

POTENTIAL ENVIRONMENTAL IMPACT	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION						RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION					
		M	D	S	P	TOTAL	SP		M	D	S	P	TOTAL	SP
ALIEN VEGETATION														
Possible alien vegetation infestation	**Construction Phase**: Vegetation, stripping, stripping and stockpiling of topsoil, subsoil, overburden and spoil **Operational Phase:** Excavations, Stockpiling and Transporting of gravel material **Decommissioning Phase:** Sloping and Landscaping during rehabilitation, Replacing the topsoil and revegetating the disturbed area	6	2	2	4	40	M	• Every 3 months casual labour will be employed to circumnavigate the site to hand pull out known alien vegetation that may have established in the disturbed area. • Casual labour will be provided with photographs of the alien vegetation that could establish.	4	2	2	2	16	L
SANITATION FACILITIES														
Provision and management of sanitation facilities	All phases	8	2	2	4	48	M	• Chemical toilet facilities shall preferably be used on site. The toilets shall be services every second week by a service provider.	4	2	2	3	24	L

POTENTIAL ENVIRONMENTAL IMPACT	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION						RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION					
		M	D	S	P	TOTAL	SP		M	D	S	P	TOTAL	SP
HERITAGE, ARCHAEOLOGICAL AND PALEONTOLOGICAL ISSUES														
Possible archaeological sites and graves to be affected	Construction phase	6	5	1	5	60	H	• If an artefact or grave on-site is uncovered, work in the immediate vicinity shall be stopped immediately and it should immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made. The Contractor shall take reasonable precautions to prevent any person from removing or damaging any such article. • The South African Heritage Resources Agency (SAHRA) shall be contacted such that an archaeological/heritage resources consultant can be appointed to record the site and excavate if necessary. Work may only resume once clearance is given in writing by the archaeologist/heritage resources consultant.	6	5	1	2	24	L
SAFETY														

POTENTIAL ENVIRONMENTAL IMPACT	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION						RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION					
		M	D	S	P	TOTAL	SP		M	D	S	P	TOTAL	SP
Safety of sloped areas and safety of employees	All phases – employees Decommissioning phase – sloped areas	6	5	1	5	60	H	• Appropriate safety clothing will be worn at all times i.e. head gear, shoes, ear plugs.	6	5	1	2	24	L

10. ALTERNATIVES CONSIDERED

Motivation for preferred site: The N2 section 34 is an existing road that will be upgraded and site alternatives are, therefore, not relevant.

The alternatives that were investigated are different design alternatives for the proposed road.

a) Preferred design alternative

A 4-lane divided dual carriageway (2-lanes per direction) with 8.6m wide grass median (30.4m).

b) Design Alternative 1

A 4-lane undivided dual carriageway with concrete median barrier (24.2m) with a 2.2m horizontal clearance on the median shoulder between the white line and the 0.8m wide concrete barrier.

c) No-go Alternative

Should the project not proceed the traffic on the N2 could experience increasingly unsafe driving conditions. This project will accommodate the predicted increase in traffic volume and avoid high driver frustration. The cost of maintenance could be very high with this alternative.

The current high volumes of heavy vehicle traffic on the N2 are a major safety and capacity concern. The volume of heavy vehicles is expected to increase significantly over the next 20 years. Traffic volumes and design principals determine that the road needs to be upgraded to ensure the safety of the traveling public. If this is not done, it is anticipated that accidents on this road will increase in future.

Please see facility illustrations in Appendix C.

10.1 Site Selection Matrix

The following table provides a site selection matrix of the alternatives considered:

Table 11: Site Selection Matrix

Criteria	Preferred Design Alternative	Design Alternative 1
Cost	R1 383 090 883 per km with a Continuously Reinforced Concrete Pavement (CRCP) pavement	R1 541 564 704 per km with a Continuously Reinforced Concrete Pavement (CRCP) pavement
Design Cost Increase	R367 634 or 20% is anticipated	R620 886 or 34% is anticipated

Accommodation of intersections	Can accommodate regular intersections and farm accesses with enough site distance	Difficult to accommodate regular intersections or farm accesses in terms of site distance
Drainage in high rainfall area	The drainage will be optimal	Median drainage can be challenging where the road is in super elevation.

10.2 Advantages and Disadvantages of Alternatives Considered

a. Preferred design alternative

In this option, A 4-lane divided dual carriageway (2-lanes per direction) with 8.6m wide grass median (30.4m).

Advantages

The advantages of the preferred alternative are the following:

- This option can accommodate regular intersections and farm accesses with enough site distance.
- This is the most cost-effective option.
- The project is situated in a high rainfall area and with this option the drainage will be optimal.
- The safety to the traveling public will be significantly improved as the traffic will be flowing optimally.
- The road could be upgraded to acceptable horizontal and vertical geometric requirements.
- This option drastically lowers the possibilities of head-on collisions.
- This option accommodates future capacity upgrades if required.
- It is anticipated that the traffic accidents that occur on this road will be reduced with this option.
- It is anticipated that the road upgrade will cater for future traffic demand and will support economic growth. This will benefit the communities in the area including local residents, motorists, the road freight industry and its customers. The upgrade of the road will, therefore, ensure safer driving conditions for the traveling public by enabling vehicles to travel more efficiently and smoothly with less congestion.
- Improved traffic flow, particularly during peak periods.
- Reduced congestion is anticipated.
- The environmental impact of the upgrade of the road is deemed to be low.

Disadvantages

The disadvantages of this alternative are the following:

- Additional material will be required for this option, considering the implied pavement and fill widening. The existing sources currently being acquired will however be

sufficient in size to address the additional material requirements. In some cases, borrow pit depth of excavation will be amended slightly.

b. Design Alternative 1

A 4-lane undivided dual carriageway with concrete median barrier (24.2m) with a 2.2m horizontal clearance on the median shoulder between the white line and the 0.8m wide concrete barrier.

Advantages

The advantages of this alternative are the following:

- Improved traffic flow, particularly during peak periods.
- Reduced congestion is anticipated.
- It is anticipated that the upgrade of the road will cater for future traffic demand and will support economic growth. This will benefit the communities in the area including local residents, motorists, the road freight industry and its customers.
- The environmental impact of the upgrade of the road is deemed to be low.

Disadvantages

The disadvantages of this alternative are the following:

- This option cannot accommodate regular intersections and farm accesses with enough site distance.
- It is not considered a safe option due to the limited site distance. A barrier is also not as safe an option as a median.
- This is the most expensive option.
- The project is situated in a high rainfall area and with this option the drainage will not be optimal due to the barrier in the middle.

10.3 Sustainable Development

It will be attempted to implement the following:

- Compact fluorescent lights will be installed in the site offices;
- All solid waste will be separated in different containers to make recycling possible;
- Where new toilets will be installed dual flush device toilets will be installed;
- Storm water will be managed and improved to reduce erosion by installing gabion boxes;
- Where new grassing is done, it will be done by using locally indigenous vegetation;
- Training of staff will be done to implement good housekeeping. This will be done during toolbox talks.
- An ECO will address the staff on good housekeeping actions.

10.4 Socio-Economic Parameters

The value of the project is approximately R1.577 billion. Employment opportunities that will accrue to previously disadvantaged individuals are the following:

a. A minimum of 30% of the Final Contract Value by the end of the contract will accrue to Targeted Enterprises;
b. A minimum of 8% of the Final Contract Value by the end of the contract will accrue to Targeted Labour; and
c. An amount still to be determined will also be allocated for a Community Development type project within the main contract. The Community Development component to be executed by CIDB 1 to 4 Targeted Enterprise contractors, utilising labour enhanced construction methods. A sub-target of 36% are to be black women owned sub-contractors and 36% are to be black youth owned sub-contractors (Note that a particular sub-contractor ownership may contribute to both the women and the youth criteria. Hence, 36% black women – and 36% black youth ownership does not imply only 29% non-woman/non-youth ownership).

11. SUMMARY OF SPECIALIST REPORTS

Table 12: Summary of Specialist Reports

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X Where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
Terrestrial Ecological Assessment and Aquatic Assessment for the Improvement of National Route N2 Section 33 & 34 between KZN / Mpumalanga Provincial Border and Camden ROAD SECTION B Verzameling (km 30,0) to Leiden (km 60,0) by Flori Scientific Services, 2022	The following conclusions and recommendations were reached after desktop studies, field investigations and expert opinions of field investigators: • There are no 'No-Go' zones in the study area. • There are no 'fatal flaws'. • No priority faunal species were encountered, although some will visit the area or be present in the area. However, the nature of the project is that any disturbances will be temporary (only last during the construction phase). • No protected trees and no red data plant species were observed during field investigations. • All watercourses should be viewed as sensitive. • There are no actual areas of High Sensitivity in the study area	x	EMPr

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X Where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
	(eventhough watercourses are approached as sensitive). • Additional negative impacts arising from the activities of the project will be either temporary (during the construction phase) and/or insignificant (not measurable). This includes the potential impacts on watercourse crossings. • Some positive impacts from the project include the replacement and cleaning of culverts, pipe, etc. that will positively impact on the flow of small streams and seasonal drainage lines. • Recommended mitigating measures must be implemented. • Taking all findings into account, along with mitigating measures and proposed project activities there should be no need for a Water Use Licence Application process as there will be no significant or measurable negative impacts on the watercourses in terms of Section 21 (c) & (i) water uses. Some of the		

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X Where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
	upgrades to the culverts, bridges and stormwater pipes will have a positive impact on watercourses as these activities will reduce current impoundments and deviations of water flow from debris; broken and deteriorating infrastructure; siltation, etc. • A rating matrix was compiled which determined the total impacts to of a Risk Rating Class of Low, which qualifies the project for a General Authorisation (GA) Process, at the very most.		
Phase 1 Cultural Heritage Impact Assessment: The Improvement of National Route N2, Section B B Verzameling (km 30,0) to Leiden (km 60,0), Gert Sibande District Municipality, Mpumalanga Province by Dr J van Schalkwyk, 2022	Identified sites: • No sites, features or objects of cultural heritage significance were identified in the study areas. Impact assessment:	X (all were included)	EMPr

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X Where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
	Impact analysis of cultural heritage resources under threat of the proposed development, are based on the present understanding of the development: • As no sites, features or objects of cultural heritage significance were identified in the study areas, there would be no impact as a result of the proposed development. Reasoned opinion as to whether the proposed activity should be authorised: • From a heritage point of view it is recommended that the proposed development be allowed to continue, on condition of acceptance of the proposed mitigation measures. Conditions for inclusion in the environmental authorisation: • Should archaeological sites or graves be exposed during quarrying activities, it must immediately be reported to a		

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X Where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
	heritage practitioner so that an investigation and evaluation of the finds can be made.		

12. ENVIRONMENTAL IMPACT STATEMENT

The following presents a summary of the key findings of the environmental impact assessment:

Almost the entire study area is transformed or highly degraded and the environmental impact is deemed to be low. There are no areas of pristine grassland or habitats in the study site. No Red Data Listed (RDL) or Orange Data Listed (ODL) plants were observed in the study site. None are expected to occur.

There are no 'high' sensitive habitats present on site, with the exception of the watercourse crossings. No protected trees occur in the study area. The most important environmental impacts as a result of the upgrade of the road pertain to the possible impacts to the aquatic resources along the route. The route crosses over only one main river or stream, namely the Ngwempisi River, and another small, unnamed stream. Besides the two streams there are only a few minor and small drainage lines and stormwater culverts along the study area route of the study area. Mitigation measures are included in the EMPr to minimise the impact.

The essence of the Basic Assessment process is aimed at ensuring informed decision-making and environmental accountability, and to assist in achieving environmentally sound and sustainable development. The environmental impacts associated with the upgrade of the road are deemed to be low. No long-term environmental impact should arise.

The preferred alternative (a 4-lane divided dual carriageway (2-lanes per direction) with 8.6m wide grass median (30.4m)) is favoured for the following reasons:

- This option can accommodate regular intersections and farm accesses with enough site distance.
- This is the most cost-effective option.
- The project is situated in a high rainfall area and with this option the drainage will be optimal.
- The safety to the traveling public will be significantly improved as the traffic will be flowing optimally.
- The road could be upgraded to acceptable horizontal and vertical geometric requirements.
- This option drastically lowers the possibilities of head-on collisions.
- This option accommodates future capacity upgrades if required.
- It is anticipated that the traffic accidents that occur on this road will be reduced with this option.
- It is anticipated that the road upgrade will cater for future traffic demand and will support economic growth. This will benefit the communities in the area including local residents, motorists, the road freight industry and its customers. The upgrade of the road will, therefore, ensure safer driving conditions for the traveling public by enabling vehicles to travel more efficiently and smoothly with less congestion.
- Improved traffic flow, particularly during peak periods.
- Reduced congestion is anticipated.
- The environmental impact of the upgrade of the road is deemed to be low.

10.1 Final Site Map

Please see the final site maps included in Appendix C.

10.2 Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives

The possible negative impacts related to the project are associated with the construction phase i.e.

a. Dust Pollution
b. Soil Erosion
c. Noise Impact
d. Visual impact
e. Impact on terrestrial ecology;
f. Impact on uncovered heritage aspects
g. Contamination of site due to hydrocarbon spillage
h. Emissions from heavy vehicles
i. Water pollution

These negative impacts have a low significance and can be mitigated during the construction period.

The positive impacts associated with the project are the following:

- The safety to the traveling public will be improved.
- Improved traffic flow, particularly during peak periods;
- Reduced congestion is anticipated;
- It is anticipated that the project will cater for future traffic demand and will support economic growth. This will benefit the communities in the area including local residents, motorists, the road freight industry and its customers. The project will, therefore, ensure safer driving conditions for the traveling public by enabling vehicles to travel more efficiently and smoothly with less congestion.

13. PROPOSED IMPACT MANAGEMENT OBJECTIVES AND THE IMPACT MANAGEMENT OUTCOMES FOR INCLUSION IN THE EMPR

The following impact management measures will be implemented by SANRAL to prevent or remedy any possible pollution or degradation of the environment:

a. Possible dust and air pollution

- Dust will be suppressed through a watering management programme, especially during windy conditions.
- Dust generated will be carefully monitored by the DEO and should be suppressed by means of water regularly.

- Any temporary access roads will be watered regularly, especially in the dry winter months and in periods of high wind.
- Vegetation will not be unnecessary stripped.
- Domestic fires will be prohibited on site.
- Heavy vehicle will be serviced regularly to ensure emission control.

b. Soil Erosion

- Minimal amounts of topsoil shall be lost due to erosion, either by wind or water.
- Condition of soil in walk or drive areas should be checked daily for erosion.
- Access road conditions will be checked daily.
- If erosion is noted at walk and drive areas, access road or topsoil berms, the erosion channel will be fixed by placing cut vegetation, sandbags or rocks within the erosion channel and the cause of the erosion will be mitigated through the creation of runoff channels.

c. Possible Noise Pollution

- The working hours shall be limited to between 07:00 hrs and 18:00 hrs on weekdays, and 07:00 hrs and 17:00 hrs on Saturdays, or as per contract documentation.
- Vehicles must be driven at a moderate speed (50 kph) on private roads.
- Noise generated from the heavy vehicles on the project shall only be carried out during normal working hours.
- Extended working hours will be in accordance with contract documentation.
- SANRAL shall be obligated to maintain vehicles used at the project in a good condition;
- SANRAL will be obliged to ensure that all personnel on site apply occupational health and safety requirements with respect to hearing protection.

d. Possible Visual impact

- Where areas are going to be disturbed through the destruction of vegetation, use appropriate indigenous and endemic plants to replace screening vegetation lost.
- If practically possible, locate construction camps in areas that are already disturbed or where it isn't necessary to remove established vegetation.
- Keep the construction sites and camps neat, clean and organised (i.e. no littering) in order to portray a tidy appearance.
- In visually sensitive areas screen the construction camp and lay-down yards by enclosing the entire area with a dark green or black shade cloth of no less than 2 m height.
- Maintain natural vegetation where possible.
- Rehabilitate disturbed areas as soon as practically possible after construction. This should be done to restrict extended periods of exposed soil.
- Utilise existing screening features such as dense vegetation stands or topographical features to place the construction camps and lay-down yards out of the view of sensitive visual receptors.
- Where vegetation clearance must be done for safety reasons, this should be kept to a minimum.
- Hydro-seeding must be undertaken as soon as possible.

- The success of hydro-seeding must be monitored over a period of 1 year and be repeated in areas of low success.

e. Aquatic and Terrestrial Ecology

Construction Phase

- The footprint of the project is small in relation to the area and mostly within an already disturbed and altered environment.
- The study area route crosses over only one main river or stream, namely the Ngwempisi River, and another small, unnamed stream. Besides the two streams there are only a few minor and small drainage lines and stormwater culverts along the study area route of the study area. The long-term impact of the upgrade of the actual watercourse crossings is a positive impact, because it will improve water flow, remove blockages, stabilise stream banks, reduce existing erosion of stream banks and riparian areas.
- Minimal riparian vegetation will be lost (need to be removed) as the project involves the upgrade of crossings and not new crossings. The upgrade will also not include the need to remove trees and other riparian vegetation.
- Any temporary storage, lay-down areas or accommodation facilities to be setup in existing built-up areas or disturbed areas. No temporary storage areas, laydown areas or site offices are allowed within a 100m of the edge of any river, stream or distinctive drainage line.
- No temporary storage areas, laydown areas or site offices are allowed within a 100m of the edge of any river, stream or distinctive drainage line. That is, a 100m buffer zone (no-go zone) for these sites are required along all watercourses.
- Ensure small footprint during construction phase
- An Erosion Plan to be implemented and monitored during the construction phase, especially in the area of watercourses and steep gradients along escarpment edges. The erosion potential is moderate to low. This also to further reduce the potential of siltation of small watercourses. The plan need only be basic, but needs to be monitored.
- All hazardous materials must be stored appropriately to prevent these contaminants from entering the water environment;
- All excess materials brought onto site for construction to be removed after construction and their removal seen as part of the construction phase.
- No open trenches or mounds of soils to be left.
- Rehabilitation plan for disturbed areas to be compiled and implemented as part of the construction phase.
- No construction vehicles may drive through any streams or simply create new crossings outside of the proposed plans and EMPr conditions, which might include WUL or GA conditions. Existing roads to be used as much as possible, but these roads to be maintained during all phases of the project.
- No concrete or mounds of building sand and other materials may be stored temporary during the construction phase within 32m of any watercourses, because a heavy rainstorm can wash these materials into the watercourse.
- Temporary access roads (if any) and temporary laydown sites, site office areas, etc. need to be monitored, maintained and rehabilitated at the end of the construction phase as part of the rehabilitation process.
- An independent ECO is required for the duration of the construction phase.

- A General Authorisation (GA) is going to be required for the project. A Water Use Licence Application (WULA) process should not be required.

Operational Phase
Monitoring, rehabilitation, general maintenance may form part of the routine maintenance programme for the road.

Rehabilitation of Temporary Laydown areas
Site-specific rehabilitation plan must be compiled and implemented as part of the construction phase of the project. It may not be left until a later date or fall under the operational phase of the project.

f. Possible Impact on Uncovered Cultural or Archaeological site

- If an artefact or grave on-site is uncovered, work in the immediate vicinity shall be stopped immediately and it should immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made. The Contractor shall take reasonable precautions to prevent any person from removing or damaging any such article.
- The South African Heritage Resources Agency (SAHRA) shall be contacted such that an archaeological/heritage resources consultant can be appointed to record the site and excavate if necessary. Work may only resume once clearance is given in writing by the archaeologist/heritage resources consultant.

g. Possible contamination of site due to hydrocarbons spillage

- All heavy vehicles, excavators and generators used during construction will be in good working condition.
- A drip tray will be available to place underneath haul vehicles while the vehicles are parked at night.
- Should a vehicle have a break down, it will be serviced immediately. If soil contamination with diesel and oils occurred, the spill will be cleared up promptly. If the spill is small, it will be cleaned with a spill kit. If the spill is large, a spill clean-up company will be used to clean-up the spill;
- Proper functioning of heavy vehicles will be ensured.

h. Possible establishment and spread of alien vegetation

- Every 3 months casual labour will be employed on site to hand pull out known alien vegetation that may have established in the disturbed area.
- Casual labour will be provided with photographs of the alien vegetation that could establish.

i. Sanitation Facilities

- Chemical toilet facilities shall preferably be used on site. The toilets shall be serviced every second week by a reputable service provider.

j. Emissions from heavy vehicles

- All heavy vehicles, excavators and generators used on site will be in good working condition and will be serviced regularly.
- Should a vehicle have a break down, it will be serviced immediately.

k. Unsafe working conditions for employees

- Appropriate safety clothing will be worn at all times i.e. head gear, shoes, ear plugs.

14. ASPECTS FOR INCLUSION AS CONDITIONS OF AUTHORISATION

a. A Site Environmental Control Officer must be on site for implementation of the EMPr;
b. All activities must take place in accordance with the approved EMPr;
c. Should archaeological sites or graves be exposed during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made. Should any archaeological artefact be exposed during construction activities, construction must be stopped. Under no circumstances shall any artefact be destroyed. The area must be fenced off and a heritage practitioner must be must be contacted as soon as possible.

15. DESCRIPTION OF ANY ASSUMPTION, UNCERTAINTIES AND GAPS IN KNOWLEDGE

a. The following assumptions have been made for the purposes of this report:

- All information received from sources contributing to this project is correct;
- That SANRAL will consider the recommendations derived from this study, and
- The National Department of Forestry, Fisheries and the Environment will be the decision-making authority with regard to this application.

b. Limitations

None.

c. Knowledge Gaps

None

16. REASONED OPINION AS TO WHETHER THE PROPOSED ACTIVITY SHOULD OR SHOULD NOT BE AUTHORISED

i) Reasons why the activity should be authorized or not

The activity should be authorised by the Department of Forestry, Fisheries and the Environment as the significance of the environmental impacts identified is low while there are positive impacts that will benefit the community as a whole.

ii) Conditions that must be included in the authorisation

a. A Site Environmental Control Officer must be on site for implementation of the EMPr;
c. All activities must take place in accordance with the approved EMPr;
d. Should any archaeological artefact be exposed during construction activities, construction must be stopped. Under no circumstances shall any artefact be destroyed. The area must be fenced off and a heritage practitioner must be must be contacted as soon as possible.

17. PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED

The period for which the environmental authorisation is required is 5 years. The date on which the activity will be concluded is unclear at this stage.

18. UNDERTAKING

I, Josephine Bothma, declare that –

- I act as the independent environmental practitioner in this application.
- The information contained in the report is correct.
- All comments and inputs from stakeholders and I&APs are included in the report.
- The inputs and recommendations from specialist reports are included in the report.
- All information provided to I&APs are included in the report.
- Responses to I&APs to comments or inputs made by I&APs are included in the report.

Signature of the environmental assessment practitioner:

Chameleon Environmental

Name of company:

Date:

Commissioner of Oaths

LIST OF APPENDICES

Appendix A – CV and qualification certificate of EAP

Appendix B – Locality Plan, Sensitivity Plan

Appendix C – Facility Illustrations/site map

Appendix D – Public Participation Process

Appendix E – Specialist studies

Appendix F – Licenses/Permits received

Appendix G – Photographs

Appendix H - EMPr