
DRAFT BASIC ASSESSMENT REPORT

THE PROPOSED CONSTRUCTION OF 1.19km of NEW ROAD FROM NEW JUNCTION OF D4409 AND D4416 AND ENDS AT A PROPOSED LOCATION ON THE R531 (P194)

Bushbuckridge Local Municipality, Mpumalanga

DARDLEA Ref. No: TBD

REVISION: BAR001

PREPARED FOR:

Mpumalanga Department of Public Works, Roads & Transport

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DATED:

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PROJECT DETAILS

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Project Title	Pre-application phase for the proposed construction of 1.19km of new road from new junction of D4409 and D4416 and ends at a proposed location on the R531 (P194)
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Applicant Representative	Mr Ngonidzashe Chimusoro
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ABBREVIATIONS

BAR	- Basic Assessment Report
CLO	- Community Liaison Officer
DWS	- Department of Water and Sanitation
EA	- Environmental Authorisation
EAP	- Environmental Assessment Practitioner
ECO	- Environmental Control Officer
EDM	- Ehlanzeni District Municipality
EMPr	- Environmental Management Program
DARDLEA	- Mpumalanga Department of Rural Development, Land and Environmental Affairs
DPWRT	- Mpumalanga Department of Public Works, Roads and Transport
IDP	- Integrated Development Plan
MTPA	- Mpumalanga Tourism and Parks Agency
NEMA	- National Environmental Management Act, 1998
NWA	- National Water Act, 1998
OHSA	- Occupational Health and Safety Act, 1993
PPE	- Personal Protective Equipment
PPP	- Public Participation Process
PSDF	- Provincial Spatial Development Framework
SABS	- South African Bureau of Standards
SEA	- Strategic Environmental Assessment
SPLUMA	- Spatial Planning and Land Use Management
SUDS	- Sustainable Urban Drainage System
WSUDS	- Water Sensitive Urban Design System

1 INTRODUCTION

1.1 Background Information

The Department of Public Works, Roads and Transport (**DPWRT**), the Applicant, commenced with the upgrading, along with associated activities, of the rural access road D4407 between Hluvukani and Timbavati (7.82km) and road D4416 between Timbavati and road P194/1 near Welverdiend (3.37km) in the Bohlabela region of the Mpumalanga Province. This was without first obtaining the required Environmental Authorisation (EA) from the Mpumalanga Department of Agriculture, Rural Development & Environmental Affairs (DARDLEA).

An application in terms of S24G of the National Environmental Management Act, 1998 (Act No. 107 of 1998) was submitted in August 2020.

After consultation with SANRAL during construction regarding the position of the intersection, it was discovered that the current existing position of the intersection (D4416 and R531) does not conform to SANRAL standards and must be moved. Therefore, a new wayleave application has been submitted on 19 June 2020 considering the distances between the existing intersection and the college entrance.

The new road deviation and intersection has not commenced therefore a new BAR process is being undertaken for this section.

The start of the section under review in this report, is at the junction of D4409 and D4416 and ends at a proposed location on the R531 (P194). It is proposed that the original designed alignment be changed to accommodate the new position of the intersection.

The Environmental Management Programme (EMPr) will be prepared as part of the EIA process to provide specific environmental guidance to the relevant engineers and Contractors for the construction and rehabilitation, and where required closure, of the road and associated activities about their responsibilities in terms of responsible environmental management.

An EMPr was drafted in accordance with Section 19 of the EIA Regulations published in Government Notice No. R. 982 of 4th December 2014 (as amended) (EIA Regulations). Section 19 should be read in conjunction with Section 24N of the National Environmental Management Act, 1998 (Act 107 of 1998), as amended and hereby referred to as 'NEMA' throughout this document.

The report forms part of a pre-application phase. No formal application has been submitted to date.

1.2 Applicant Details Information

Details of the Applicant and responsible contact person are provided for in Table 1.

Table 1 Details of Applicant

Applicant Name:	Mpumalanga Department of Public Works Roads and Transport
Contact Person	Mr Ngonidzashe Chimusoro
Position in company	Director in Construction
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1.3 Environmental Assessment Practitioner

NCC Environmental Services (Pty) Ltd (**NCC**) was appointed to undertake the required Environmental Authorization (EA) process incorporating the required Environmental Impact Assessment (EIA) and, Environmental Management Programme (EMPr) processes.

Details and expertise of the Environmental Assessment Practitioner (EAP) who prepared the EIA Report is provided in Table 2 **Details of the EAP**

and Curriculum Vitae is appended in Error! Reference source not found.

Table 2 Details of the EAP

EAP:	Nicholas Gates
Company:	NCC Environmental Services (Pty) Ltd
Qualifications:	B Soc Sci (EGS)
Experience:	12 years
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2 POLICY AND LEGISLATIVE CONTEXT

This chapter provides an overview of the policy and legislative context within which the new road deviation and associated infrastructure is being operated. It identifies environmental legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process which may be applicable or have relevance to the project.

2.1 Applicable Listed Activities

In accordance with Section 24(5) of the National Environmental Management Act (No. 107 of 1998) (NEMA), and the Environmental Impact Assessment (EIA) Regulations (GNR 982), as amended, the proposed construction of 1.19km of new road from new junction of D4409 and D4416 and ends at a proposed location on the R531 (p194) requires an Environmental Authorisation (EA) from the Competent Authority (CA). Figure 1 provides a broad overview of the Basic Assessment Process (BAR).

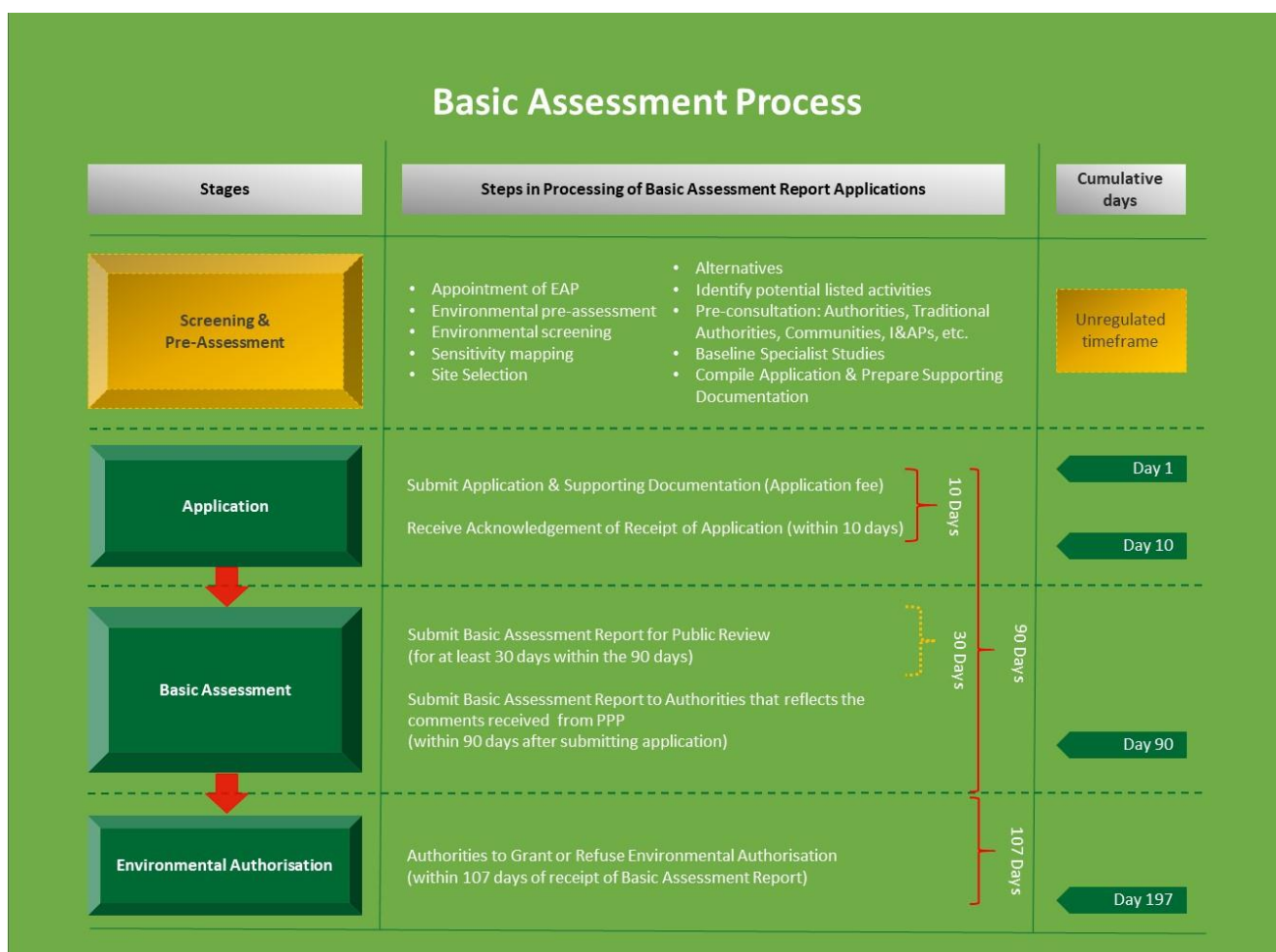


Figure 1: BAR Process

According to section 2, subsections 1, 2 & 3 of NEMA, all organs of state must apply certain principles set out in the Act when taking decisions that may significantly affect the environment. The key principles of this Act include that all “actions” approved must be economically, socially, and environmentally sustainable.

It further states that “*environmental management must place people and their needs at the forefront of its concern*” and that their collective interests must be served equitably.

The identified Listed Activities in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), for which EA is being applied for is listed in.

Table 3: Listed activity in terms of GNR 983 Listing Notice 1 of 2014 (amended)

Activity No(s):	The relevant Basic Assessment Activity(ies) in writing as per Listing Notice 1 (GN No. R. 983)	Description of the activity
12	The development of— (ii) Infrastructure or structures with a physical footprint of 100 square metres or more. where such development occurs— (a) within a watercourse;	Construction of a nominal number of pipe culverts within watercourse. It is estimated that 4 pipe culverts will be required.
19	The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse	The infilling, removal and moving of material into water resources for the construction of pipe culvert to ensure flow of water.

Table 4: Listed activity in terms of GNR 985 Listing Notice 3 of 2014 (amended)

Activity No(s):	The relevant Basic Assessment Activity (ies) in writing as per Listing Notice 3 (GN No. R. 985)	Description of the activity
4.	The development of a road wider than 4 metres with a reserve less than 13,5 metres. f. Mpumalanga i. Outside urban areas: (gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve, excluding disturbed areas, where such areas comprise indigenous vegetation	The proposed road is two 3.7 m lanes and a 3 m shoulder on both sides, of which only 0.6 m is surfaced. This equates to 7.4m of road and a reserve of less than 13.4m
14	The development of— (ii) infrastructure or structures with a physical footprint of 10 square metres or more; where such development occurs— (a) within a watercourse; f. Mpumalanga i. Outside urban areas: (hh) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve, where such areas comprise indigenous vegetation; or	Construction of a nominal number of pipe culverts within watercourse It is estimated that 4 pipe culverts will be required.

2.2 Other Relevant Legislation and/or Guidelines

The following is a broad list of environmental legislation compiled for guidance to assess how environmental laws are applicable to the DPWRT:

2.1.1 National and Provincial Legislation and Regulations

- The Constitution of the Republic of South Africa (Act 108 of 1996)
- Environment Conservation Act (Act 73 of 1989)
- National Environmental Management Act (Act 107 of 1998) (as amended)
- NEMA EIA Regulations, 2014 (as amended)
- National Road Traffic Act (Act 93 of 1996)
- National Road Traffic Regulations 2000 (as amended)
- National Environmental Management: Waste Management Act (Act 59 of 2008)
- White Paper on Integrated Pollution and Waste Management for South Africa
- The White Paper on Environmental Management Policy for South Africa
- National Environmental Management: Air Quality Act (Act 39 of 2004)
- National Water Act (Act 36 of 1998)
- Water Services Act (Act 108 1997)
- Hazardous Substances Act (Act 15 of 1973)
- Mineral and Petroleum Resources Development Act (Act 28 of 2002)
- National Forest Act (Act 84 of 1998)
- National Veld and Forest Fire Act of 1998 (Act No. 101 of 1998)
- National Environmental Management: Protected Areas Act (Act 57 of 2003)
- Mountain Catchment Areas Act (Act 63 of 1970)
- National Environmental Management: Biodiversity Act (Act 10 of 2004)
- Alien and Invasive Species Regulations, 2014
- White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity
- Animals Protection Act of 1962 (Act No. 71 of 1962)
- Agricultural Pests Act of 1983 (Act No. 36 of 1983)
- Conservation of Agricultural Resources Act (Act 43 of 1983)
- National Heritage Resources Act (Act 25 of 1999)
- World Heritage Convention Act, 1999
- National Health Act (Act 61 of 2003)
- Health Act (Act 63 of 1977)

- Occupational Health and Safety Act (Act 85 of 1993)
- National Dust Control Regulations, 2013
- Noise Control Regulations GN R 154 in GG No. 13717 of 10 January 1992 (published in terms of Section 25 of the Environment Conservation Act 73 of 1989)
- Hazardous Substances Act (Act 15 of 1973)
- Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act (Act 36 of 1947)
- Mpumalanga Nature Conservation Act (MNCA) Act 10 of 1998

2.1.2 Other Documentation

- Mpumalanga Biodiversity Conservation Plan (MBCP)
- Mpumalanga Tourism and Parks Agency Act
- National Biodiversity Assessment (NBA) & National Vegetation Map
- National Freshwater Ecosystem Priority Area (NEFPA) Assessment

3 BIOPHYSICAL DESCRIPTION OF THE SITE

3.1 Location

The new road deviation and intersection project is in the Ehlanzeni District Municipality of the Mpumalanga Province and is roughly 70 km north of Hazyview in the Bushbuckridge Local Municipality and forms part of a larger road upgrading project. See Figure 1 & 2.

The new road deviation, D4416, starts at the intersection with D4409 and ends at P194/1 with a total length of 1.19 km.

Table 5: GPS positions for the Road

ACTIVITY - TIMBAVATI ROAD ROAD NEW DEVIATION		
Point	Latitude (S)	Longitude (E)
Start	24°33'34.80"S	31°19'49.15"E
Middle	24°33'25.95"S	31°19'46.52"E
Finish	24°33'14.04"S	31°19'36.90"E

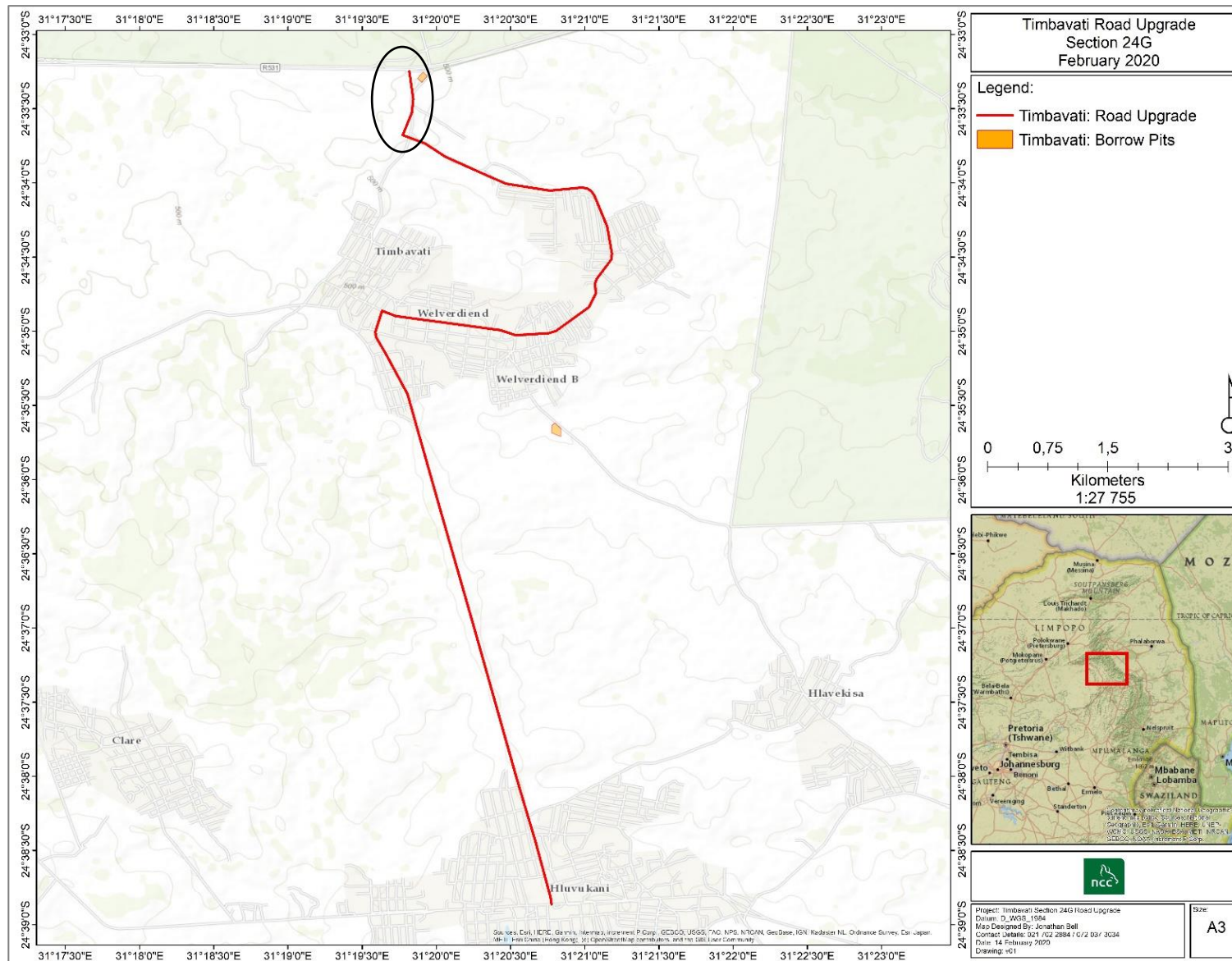


Figure 2: Site Locality Map (Overall project view – relevant section to the north)



Figure 3: Site Locality Map (Aerial Photograph)

3.2 Size of the Project Area

D4416 starts in Welverdiend (intersection with D4409) and ends at P194/1 with a total length of 1.19 km. The cross section proposed for the new road deviation design of the road is two 3.7 m lanes and a 3m shoulder on both sides, of which 0.6 m is surfaced, as indicated in Figure 4. This proposal is in line with the design standard and the 3 m shoulder will provide some recovery area to protect the main road lanes from damages due to vehicles entering and exiting the main road.

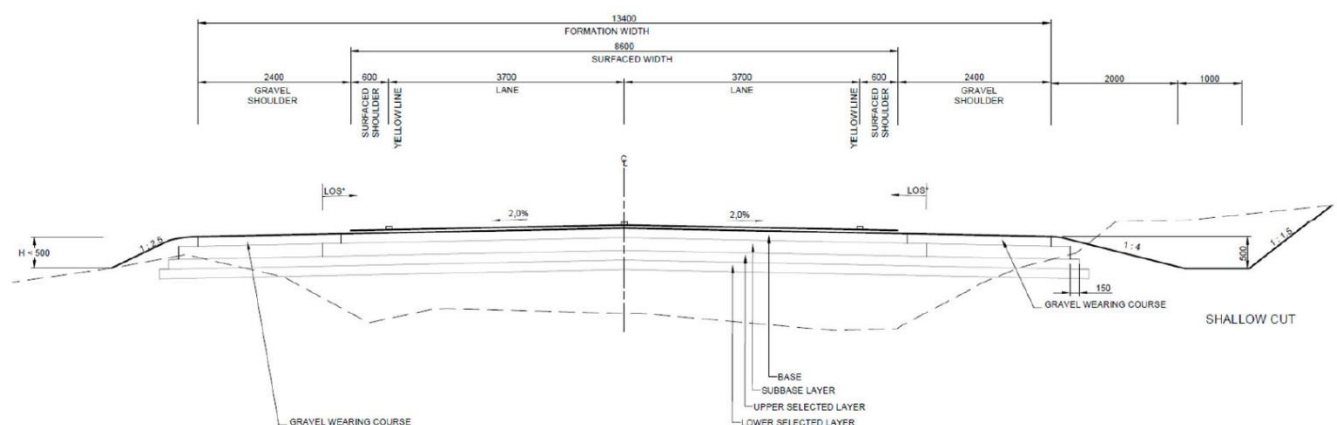


Figure 4: Proposed typical cross section.

3.3 Sites Surrounding the Property

The new road deviation travels undisturbed farm area north east of Welverdiend. The D4407 ends at a T-junction in Timbavati at the D4409.

To the north of the road is the SA Wildlife College and where the intended intersection is proposed.

The areas to the south and west are farming areas.

The following infrastructure is located along the route in the area:

- Provincial roads.
- Agricultural fields and gardens.



Figure 5:R521 with proposed intersection location (p194/1) (E.Roux, 2021)



Figure 6: Road deviation of D4416 and overview of surrounds (E.Roux, 2021)

3.4 Topography

The topography of the terrain is flat with a maximum slope of approximately 5% and an average slope of around 1.5%.

3.5 Climate

The project is situated in the lowveld region of Mpumalanga which has a subtropical climate strongly influenced by proximity to the Indian Ocean. It is in a summer rainfall region with rains season normally lasting from October to March. The average mean annual precipitation for the Ehlanzeni district varies between 750 and 860 mm (DWAf 2000) with winter rainfall considered rare (Robin, 2017). In terms of temperature, historically there has been a strong seasonality between the winter and summer months. The cooler winter season ranges between May and August with the warmer summer months occurring between December and February. The coolest and hottest months have historically been June and February respectively with records showing a very moderate temperature variation between winter and summer months (Robin, 2017).

3.6 Freshwater Resources

The Timbavati Road Deviation falls within the Olifants Water Management Area (Area no. 2) and the Inkomati-Usuthu Water Management Area (Area no. 3) based on the 2012 Water Management Areas by the Department of Water and Sanitation and is represented by two quaternary catchments, namely B73E and X40C, respectively.

3.7 Vegetation Resources

The main vegetation type present in the study area forms part of the Savanna Biome. Savannas occupy 60% of sub-Saharan Africa. They are typified by the coexistence of woody plants and grasses, with the relative (and wide-ranging) proportions of each being influenced predominantly by water availability, fire, nutrients, herbivory, and people (Bexster & Getz, 2005).

The savanna of the Mpumalanga Province has the largest cover of any other biome in the province and can be attributed to the large extent of the Kruger National Park that makes up a greater part of one the provinces conserved areas (Ferrar & Lotter, 2007).

Tall shrubland with few trees to moderately dense low woodland on the deep sandy uplands with *Terminalia sericea*, *Combretum zeyheri* and *C. apiculatum* and ground layer including *Pogonarthria squarrosa*, *Tricholaena monachne* and *Eragrostis rigidior*. Dense thicket to open savanna in the bottomlands with *Senegalia nigrescens*, *Dichrostachys cinerea*, *Grewia bicolor* in the woody layer. The dense herbaceous layer contains the dominant *Digitaria eriantha*, *Panicum maximum* and *Aristida congesta* on fine-textured soils, while brackish bottomlands support *Sporobolus nitens*, *Urochloa*

mosambicensis and *Chloris virgata*. At seep lines, where convex topography changes to concave, a dense fringe of *Terminalia sericea* occurs, with *Eragrostis gummiflua* in the undergrowth.

3.8 Socio-Economic Context

The rural settlements of Timbavati, Welverdiend, and Hluvukani are in the Bushbuckridge Local Municipality of the Ehlanzeni District Municipality. According to the BLM IDP the poverty rate sits at 63.5% in 2017 which is an increase from the 56.8% in 2015. The Bushbuckridge Local municipality's households' income is relatively low ranked in the province as its sitting at number 13 as per department of finance 2011 report.

Currently settlements are accessible via gravel roads and there is call for the improvement of the road network which largely revolves around the better integration of the surrounding settlements with the identified Municipal Development Nodes and to provide for better access to safe and ease of passage.

4 PROJECT DESCRIPTION

The proposed intersection and section of road that needs to be re-aligned is at the end of the project P194/1. The complete project comprises of the upgrading of roads D4407, D4409 and D4416. D4407 start in Hluvukani up to Timbavati with a total length of 7.82 km, where it intersects with D4409.

The project comprising of a road upgrade from D4407 between Hluvukani and Timbavati (7.82km) and road D4416 between Timbavati and road P194/1 near Welverdiend (3.37km) commenced without obtaining the required Environmental Authorisation (EA) from the Mpumalanga Department of Agriculture, Rural Development & Environmental Affairs (DARDLEA).

An application in terms of S24G of the National Environmental Management Act, 1998 (Act No. 107 of 1998) was submitted in August 2020. The Section 24G process is still in progress.

The newly aligned section, D4416, starts in Welverdiend (intersects with D4409) and ends at P194/1 with a total length of 1.19 km.

Road D4407 between Hluvukani and Timbavati is 7.82km, road D4409 at Welverdiend is 6.88km, and the road for this document purpose, road D4416/2 between Welverdiend and road P194/1, is 1.19km in length. It also includes the clearing of portions of vegetation, the installation of new culvert/s, and the construction of new road section.

The following activities were recommended and adopted:

- (i) Design speed of 80 km/h for rural road sections and a design speed of 60 km/h for urban road sections.
- (ii) Pavement construction methods
- (iii) Geometric alignment upgrades:
 - Remain within existing road reserve and removed unnecessary kinks and S-curves from horizontal alignment.
 - Raise the road levels above the NGL for rural sections but remained at NGL for urban sections.
 - Improve vertical alignment to comply with the minimum guidelines where necessary.
 - Provide minimum longitudinal gradient of 0.5%.
 - Improve horizontal alignment of road D4416/2 by removing current hairpin bend, two alternatives were proposed.
- (iv) Registration process of a new road reserve in certain sections.
- (v) Increase road safety:
- (vi) Drainage measures:
 - Replace and add additional nominal culverts.

- Provide pipe culvert system for Timbavati/Welverdiend urban area.
 - New drainage structure at water course to be constructed in the form of cast in-situ box culverts.
- (vii) Additional works:
- Move, repair, and add fencing along the road reserve to provide access control onto the main road.
 - Road Signs, including directional signs at larger junctions.
 - Road centreline marking and yellow edge marking.

The project the following activities are necessary for the construction of the new section.

- Clearing and Grubbing.
- Fencing.
- Culvert installations.
- Cut to spoil.
- Cut to fill.
- Roadbed construction.
- Selected layer construction.

5 REGIONAL PLANNING CONTEXT

5.1 Provincial Spatial Development Framework (PSDF)

The PSDF references the Mpumalanga Infrastructure Master Plan which proposes several development principles which provide guidance and direction in terms of infrastructure investment in the province.

The Principles include:

Principle 1: Balance economic growth and social upliftment

Following a balanced investment approach which focuses on both infrastructure investment to promote economic growth, and investment to enhance social upliftment.

Principle 2: Respond to regional differences in development potential.

Infrastructure Investment to respond to the locational factors and economic drivers of the province and take into consideration regional differences in terms of development potential.

Principle 3: Recognise the roles and responsibilities of stakeholders.

Recognising the roles and responsibilities of all stakeholders and facilitating the functional integration and alignment of infrastructure investment between these.

Principle 4: Build on existing initiatives.

Building on existing initiatives as a priority to support the successful implementation thereof.

Principle 5: Preserve existing assets.

Sufficiently allocating funding towards maintenance and preservation of existing assets (infrastructure) as part of a broader infrastructure life-cycle approach.

Principle 6: Align investment with available resources.

Aligning infrastructure investment in Mpumalanga Province with the availability of resources in the Province.

Principle 7: Build a heritage

Promoting investment in image building assets for the Province.

The PSDF includes the Comprehensive Rural Development Programme (CRDP) for which the objectives are to eradicate poverty and food insecurity through efficient use of natural resources to build vibrant, equitable and sustainable rural communities.

Included in the Projects and Provincial output of CRDP is the need for the improvement of rural services to support livelihoods.

The upgrading of existing roads is in line with the PSDF in that it speaks to the theme of connectivity, corridor functionality and optimisation of existing infrastructure. (MSDF, April 2019)

5.2 Urban edge / Edge of Built Environment for the area

The area sits within a Rural Intervention Area part of the strategic objectives is to create functional Rural Economic Nodes by rural restructuring and linkage of rural economies. This is guided by Spatial Development Strategies and Programmes which include:

- Rural infrastructure development and upgrading:
 - Upgrade and maintenance of roads. Majority of the roads in the rural landscape are gravel and poorly maintained roads. For most of the projects centred in these areas to work there will be a need to upgrade these roads. Upgrade and maintenance of these roads will also help in unlocking other economic opportunities that lie in the rural space e.g., tourism. (Spatial Development Strategies)
- Development of road and transport plans that are the focus on upgrading and maintaining rural roads. The development of these plans is crucial to the success of most projects that happen in rural areas. (Programme)

MPSDF, April 2019

5.3 Integrated Development Plan of the Local Municipality

The activity is in line with the Bushbuckridge Local Municipality IDP which in turn aligns with the Ehlanzeni District Transport Plan which envisages improving the road links network to enable access to service points.

As indicated in the BLM IDP:

“Bushbuckridge Local Municipality’s roads are characterized by poor gravel roads with unclearly defined road network links due to conditions of the roads. The entire roads infrastructure has limited storm water drainages and poor maintenance strategy and results, some tarred roads have been destroyed by rains. There is also limited access to bridges to provide sufficient linkage on communities for economic engagements. The R40 road is the only provincial road which is well maintained by the Department of Roads and Transport; other provincial roads are not well maintained. The municipality has budgeted money to improve the measure economic road and roads leading to social facilities (clinics and schools).

The municipality has budgeted R110 000,000 for the 2018/19 financial year for paving of streets and maintenance of existing infrastructure.” **BLM IDP 2018-2022**

In terms of the draft Provincial Spatial Development Framework (PSDF) Development Objectives it was highlighted as:

Objective 5: Concentrate development on development corridors and nodes.

- Improve accessibility to rural towns and settlements by the development of transportation networks.
- Enhance and expand existing freight corridors and transportation nodes.
- Prioritise rural development along mobility corridors; and
- Promote the development of nodes and corridors in rural areas historically disadvantaged communities that will help provide linkages to urban areas.

5.4 Spatial Development Framework of the Local Municipality

Regarding municipal SDFs, SPLUMA section 20 provides that municipal SDFs be compiled as part of a municipality's Integrated Development Plan (IDP) in accordance with the provisions of the Municipal Systems Act, 32 of 2000, while section 21 details the content of a municipal SDF.

BLM SDF is aligned with the Ehlanzeni District Municipality (EDM) which highlights Corridor and Nodal Development as part of the key developmental drivers, in terms of Ehlanzeni the SDF prioritises the following key focus areas with regards to corridor and nodal development

- (i) Improve linkages of transport networks and roads,
- (ii) Develop transportation corridor that will form a crucial role in the Maputo corridor,
- (iii) Establishment of the R40 corridor from City of Mbombela towards Phalaborwa,
- (iv) Develop and transportation infrastructure and upgrading of roads to ensure regional, sub-regional and local connectivity.

Refer to section above Integrated Development Plan of the Local Municipality

5.5 Any other Plans

Department of Public Works, Roads & Transport Strategic Plan: 2015 – 2020 (DPWRTSP)

According to the DPWRTSP the National Development Plan (NDP) identifies infrastructure as a growth catalyst to achieve national development imperatives. By and large, Outcome 6 is focused on building an integrated and modern infrastructure network in the province by improving efficiencies, collaborations,

integrated planning, strengthening co-operations, exploring alternative infrastructure solutions, and funding mechanisms. This will in turn lead to improved services and socio-economic outcomes as mentioned in national outcomes 4 and 7.

Aligned and taking a cue from national and provincial strategic development frameworks, initiatives and directives, outcome 6 is built around six main pillars i.e., sub-outcomes mainly in the areas of: water, energy, transport, and Information and Communications Technology (ICT). The Department also supports implementation of other national outcomes e.g., 1, 2, 3, 13 and 14. In this regard, DPWRT acts as an implementing agent of infrastructure projects for several client departments, namely: Health, Education, Social Development, Culture, Sport and Recreation, Economic Development, Environment & Tourism and Department of Community Safety, Security & Liaison.

The Mpumalanga road network is a core component of the provincial infrastructure. However, the Province inherited a huge backlog in roads infrastructure as well as a large number of roads that were dilapidated and in a neglected condition. Many communities lacked access to the main road network and therefore were prohibited from full social integration with the remainder of South African society. The capital injection by government to roads infrastructure went beyond achieving world class standard infrastructure but is also linked to community development and sustainability.

More than ever, there is a need for more aggressive road rehabilitation and maintenance programmes, but this can only be effected with the entrenchment of the necessary resources (especially more of skilful personnel) operating in a policy and procedurally driven environment in order to derive utmost value for every cent invested. Rehabilitation of coal haulage routes will result in sustainable power generation and economic growth for South Africa. **(DPWRTSP, 2015)**

6 NEED AND DESIRABILITY

In terms of Section 24G(vii)(aa) of NEMA the Minister, Minister responsible for mineral resources or MEC concerned may direct the applicant to compile a report containing in which the report must include a description of the need and desirability of the activity.

The activity is in line with the Bushbuckridge Local Municipality IDP that in turn aligns with the Ehlanzeni District Transport Plan, which envisages improving the road links network to enable access to service points.

As indicated in the BLM IDP:

“Bushbuckridge Local Municipality’s roads are characterized by poor gravel roads with unclearly defined road network links due to conditions of the roads. The entire roads infrastructure has limited storm water drainages and poor maintenance strategy and results, some tarred roads are being destroyed by rains. There is also limited access to bridges to provide sufficient linkage on communities for economic engagements. The R40 road is the only provincial road which is well maintained by the Department of Roads and Transport; other provincial roads are not well maintained. The municipality has budgeted money to improve the measure economic road and roads leading to social facilities (clinics and schools). The municipality has budgeted R110 000,000 for the 2018/19 financial year for paving of streets and maintenance of existing infrastructure.”
(BLM IDP 2018-2022)

In terms of the draft Provincial Spatial Development Framework (PSDF) Development Objectives it was highlighted as:

Objective 5: Concentrate development on development corridors and nodes.

- Improve accessibility to rural towns and settlements by the development of transportation networks.
- Enhance and expand existing freight corridors and transportation nodes.
- Prioritise rural development along mobility corridors; and
- Promote the development of nodes and corridors in rural areas historically disadvantaged communities that will help provide linkages to urban areas.

The construction of the road will provide opportunities in the form of temporary employment for local individuals as well as various SMME’s in the form of sub-contracts and plant hire for the duration of the project. Materials are to be sourced locally as far as possible.

In terms of the construction of the road, on completion of the road it provides for safer and ease of access for residents of the community and road users frequenting the area. This in turn has the potential to increase traffic flow between the asphalt roads leading to the villages of Hluvukani and Wilverdiend thus providing opportunities to local businesses.

QUESTIONS AS PER GUIDELINE	EAP'S RESPONSE
Securing ecological sustainable development and use of natural resources	
1. How will this development (and its separate elements/aspects) impact on the ecological integrity of the area?	<p>An ecological impact assessment was undertaken for the development. The proposed road and intersection will result in the permanent removal of indigenous vegetation and will traverse minor drainage lines resulting in temporary impeding.</p> <p>The proposed design includes mitigation measures in the form of culverts where drainage flow is impeded by the road.</p> <p>A separate Water Use Authorisation in terms of the National Water Act [NWA], 1998 (Act 36 of 1998) for water uses relating to drainage lines in the study area is being applied for.</p>
1.1. How were the following ecological integrity considerations taken into account?	
1.1.1. Threatened Ecosystems	<p>The site contains a few drainage lines and may contain some sensitive fauna species. Information was sourced from the SANBI site. Mitigation measures were provided in all specialist studies, while the EMPr guides the contractor to as and what, and where to obtain additional information should threatened ecosystems be encountered.</p>
1.1.2. Sensitive, vulnerable, highly dynamic, or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure	<p>The site contains a few minor drainage lines as identified through ground truthing. Mitigation measures were provided in all specialist studies, while the EMPr guides the contractor to as and what, and where to obtain additional information should threatened ecosystems be encountered.</p>
1.1.3. Critical Biodiversity Areas (“CBAs”) and Ecological Support Areas (“ESAs”)	<p>The area is classified as Ecological Support Area (ESA)</p>
1.1.4. Conservation targets	<p>An ecological assessment and freshwater/wetland assessment were undertaken to comply with NEM:BA. Mitigation measures are included and an EMPr was developed.</p>
1.1.5. Ecological drivers of the ecosystem	<p>Refer to Appendix E Specialist Studies.</p>
1.1.6. Environmental Management Framework	<p>The project is located in the Olifants EMF.</p> <p>The only anticipated potential conflict that may occur within this zone is between tourism and other activities. This is an infrastructure project; no conflict is foreseen if mitigation measures are adhered to.</p>
1.1.7. Spatial Development Framework	<p>Spatial Development Framework documentation for both the Local Municipality and Mpumalanga Province was utilised for the compilation of this report.</p>
1.1.8. Global and international responsibilities relating to the environment	<p>Global and international responsibilities were considered however due to the relatively small scale of the project only NEMA (as amended) formed the basis for this EIA application.</p>
1.2. How will this development disturb or enhance ecosystems and/or result in the loss or protection of biological diversity? What measures were explored to firstly avoid these negative impacts, and where these negative impacts could not be avoided altogether, what measures were explored to minimize and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	<p>Specialist studies in terms of ecology and wetlands were developed. All impacts related to biophysical, social and cultural were assessed and the impact ratings contained in this report.</p> <p>An EMPr was compiled to include mitigation measures for the proposed development.</p> <p>Rehabilitation plans will be compiled to further enhance the on-site ecosystems.</p>
1.3. How will this development pollute and/or degrade the biophysical environment? What measures were	<p>Mitigation measures were assessed within this report. Possible impacts assessed include:</p>

QUESTIONS AS PER GUIDELINE	EAP'S RESPONSE
<p>explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?</p>	<ul style="list-style-type: none"> • Loss of habitat • Loss of fauna • Loss of flora • Degradation of ecological systems • Disruption of natural corridors <p>An EMPr was compiled to include mitigation measures for the proposed development. All impacts related to biophysical, social, and cultural were assessed and the impact ratings contained in this report.</p> <p>Rehabilitation plans will be compiled to further enhance the on-site ecosystems.</p>
<p>1.4. What waste will be generated by this development? What measures were explored to firstly avoid waste, and where waste could not be avoided altogether, what measures were explored to minimise reuse and/or recycle the waste? What measures have been explored to safely treat and/or dispose of unavoidable waste?</p>	<p>Excess soil material generated during construction will be utilised around the site for levelling as far as possible.</p> <p>General domestic waste will be collected in waste receptacles and disposed of at the nearest landfill site.</p> <p>Induction training of contractors' employees, demarcation of the site, and collection of any hazardous waste which may be produced by a certified waste contractor are some mitigation measures prescribed. A full list of mitigation measures for waste is contained in the EMPr.</p>
<p>1.5. How will this development disturb or enhance landscapes and/or sites that constitute the nation's cultural heritage? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?</p>	<p>The proposed development will not affect any cultural heritage. A heritage impact assessment was undertaken for the proposed development and it is contained in Appendix F. Mitigation measures are contained in this report and under the EMPr.</p>
<p>1.6. How will this development use and/or impact on non-renewable natural resources? What measures were explored to ensure responsible and equitable use of the resources? How have the consequences of the depletion of the non-renewable natural resources been considered? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?</p>	<p>Impacts in terms of groundwater pollution and raw materials consumption are assessed in this report. The EMPr contained in Appendix F has mitigation measures to mitigate and minimise the negative impacts associated with this proposed development. A separate General Authorisation is currently underway to comply with the National Water Act [NWA], 1998 (Act 36 of 1998) for water uses relating to the wetlands and drainage in the study site.</p>
<p>1.7. How will this development use and/or impact on renewable natural resources and the ecosystem of which they are part? Will the use of the resources and/or impact on the ecosystem jeopardise the integrity of the resource and/or system taking into account carrying capacity restrictions, limits of acceptable change, and thresholds? What measures were explored to firstly avoid the use of resources, or if avoidance is not possible, to minimise the use of resources? What measures were taken to ensure responsible and equitable use of the resources? What measures were explored to enhance positive impacts?</p>	<p>The proposed project will not utilise renewable natural resources. These may have been considered; however, it is not applicable to the current situation of the development.</p>

QUESTIONS AS PER GUIDELINE	EAP'S RESPONSE
<p>1.7.1. Does the proposed development exacerbate the increased dependency on increased use of resources to maintain economic growth or does it reduce resource dependency (i.e. de-materialised growth)? (note: sustainability requires that settlements reduce their ecological footprint by using less material and energy demands and reduce the amount of waste they generate, without compromising their quest to improve their quality of life)</p>	<p>No, the proposed development is aimed at safe, free flowing, easy access, with better traffic flow which is aimed at encouraging economic growth and development.</p>
<p>1.7.2. Does the proposed use of natural resources constitute the best use thereof? Is the use justifiable when considering intra- and intergenerational equity, and are there more important priorities for which the resources should be used (i.e. what are the opportunity costs of using these resources this the proposed development alternative?</p>	<p>Yes, mining activities are sourced locally.</p>
<p>1.7.3. Do the proposed location, type and scale of development promote a reduced dependency on resources?</p>	<p>Yes, the road has been designed to ensure that the shortest point-to-point path is constructed. Topography has been considered to ensure the least amount of fill is required.</p>
<p>1.8. How was a risk-averse and cautious approach applied in terms of ecological impacts?</p>	<p>Specialist studies in terms of ecology, wetlands, and heritage were undertaken.</p>
<p>1.8.1. What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)?</p>	<p>To our knowledge, there are no gaps or uncertainties for the proposed development.</p>
<p>1.8.2. What is the level of risk associated with the limits of current knowledge?</p>	<p>Ecological</p> <ul style="list-style-type: none"> • Sampling, by nature, implies that not all species in a study site will be recorded due to factors such as plant phenology as affected by seasonality, seasonal climatic conditions, microhabitats and both historical and current management practices. • The site inspection was a single site visit and no specialist sampling techniques utilised. • Sampling was undertaken during the summer period and the flowering period of the summer rainfall season. • Field assessment notes are supplemented by making use of literature sources and existing data bases (SANBI, Reference books, Articles etc.); and • The main ecological and floristic observations, forming the basis for recommendations, are, however, based on the field assessment observations. <p>Freshwater Assessment</p> <ul style="list-style-type: none"> • Sampling, by nature, implies that not all species in a study site will be recorded due to factors such as plant phenology as affected by seasonality, seasonal climatic conditions, microhabitats and both historical and current management practices. • The site inspection was a single site visit and no specialist sampling techniques utilised. • Sampling was undertaken during the summer period and the flowering period of the summer rainfall season.

QUESTIONS AS PER GUIDELINE	EAP'S RESPONSE
	<ul style="list-style-type: none"> Field assessment notes are supplemented by making use of literature sources and existing data bases (SANBI, Reference books, Articles etc.); and The main ecological and floristic observations, forming the basis for recommendations and / or any delineation, are, however, based on the field assessment observations. <p>The level of risk is low</p>
<p>1.8.3. Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?</p>	<p>An Environmental Management Programme (EMPr) has been compiled to address various impacts through identified mitigation measures.</p>
<p>1.9. How will the ecological impacts resulting from this development impact on people's environmental right in terms following:</p>	
<p>1.9.1. Negative impacts: e.g. access to resources, opportunity costs, loss of amenity (e.g. open space), air and water quality impacts, nuisance (noise, odour, etc.), health impacts, visual impacts, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts?</p>	<p>Please refer to Appendix F for the EMPr. Within this document, mitigation measures are provided, and impacts remediated for the environment anticipated by the construction of the proposed road.</p>
<p>1.9.2. Positive impacts: e.g. improved access to resources, improved amenity, improved air or water quality, etc. What measures were taken to enhance positive impacts?</p>	<p>Positive impacts associated with the project include improved and safer roads than existing roads. Quicker connectivity between local towns.</p> <p>Please refer to Appendix F for the EMPr. Within this document, mitigation measures are provided, and impacts remediated for the environment anticipated by the installation of the proposed project.</p>
<p>1.10. Describe the linkages and dependencies between human wellbeing, livelihoods and ecosystem services applicable to the area in question and how the development's ecological impacts will result in socioeconomic impacts (e.g., on livelihoods, loss of heritage site, opportunity costs, etc.)?</p>	<p>The proposed project will benefit road users and the communities involved by providing direct access and resulting in a possible enhancement of the economy.</p>
<p>1.11. Based on all of the above, how will this development positively or negatively impact on ecological integrity objectives/targets/considerations of the area?</p>	<p>The overall growth and economic boost of the region will be encouraged. Furthermore, the development will consider all environmental risks as well as features in the assessment and designs. There will be a negative impact with the removal of indigenous vegetation.</p>
<p>1.12. Considering the need to secure ecological integrity and a healthy biophysical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the "best practicable environmental option" in terms of ecological considerations?</p>	<p>After assessing the environmental related impact in terms of biophysical and social, the proposal was selected, as it has the same impact on the environment and but has a more positive impact on social aspects. Specialist recommendations and mitigation as well as the EMPr may ensure that all negative impacts are mitigated against to a satisfactory level.</p>

QUESTIONS AS PER GUIDELINE	EAP'S RESPONSE
<p>1.13. Describe the positive and negative cumulative ecological/biophysical impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and existing and other planned developments in the area?</p>	<p>Cumulative impacts relating to the proposed development include:</p> <ul style="list-style-type: none"> • Increased stormwater run-off due to the increase in hardened surface. • Potential ground or surface water contamination due to vehicles on site during both construction and operations. • Construction and operational waste, as well as the possibility of contaminated stormwater run-off. • Increased construction traffic to vehicles used by the new road during its construction as well as during the operational phase. <p>If not properly managed, waste may result in vermin, rodents and impacts to the surrounding properties adjacent to the proposed site. Infiltration of hydrocarbons, leachates and improper discharge of wastewater may result in pollution of water resources, which may affect the groundwater resources and drinking water. This may result in erosion through water and the loss of topsoil, which will result in the loss of a valuable commodity. Dust pollution and carbons from the vehicular movements combined with water may result in the production of carbon dioxide and hydrogen, which may result in explosions due to its flammability and the combination being very poisonous.</p> <p>Positive cumulative impacts of the proposed development are:</p> <ul style="list-style-type: none"> • Job creation and economic improvement • Skills transfer to the immediate community surrounding the development. <p>Based on the nature and extent of the proposed project, it is concluded that the potential impacts related to the proposed new road deviation and road intersection can be mitigated to an acceptable level from an environmental perspective.</p>
<p>2.1. What is the socio-economic context of the area, based on, amongst other considerations, the following considerations?</p>	
<p>2.1.1. The IDP (and its sector plans' vision, objectives, strategies, indicators and targets) and any other strategic plans, frameworks of policies applicable to the area,</p>	<p>The activity is in line with the Bushbuckridge Local Municipality IDP that in turn aligns with the Ehlanzeni District Transport Plan, which envisages improving the road links network to enable access to service points.</p> <p>As indicated in the BLM IDP:</p> <p><i>"Bushbuckridge Local Municipality's roads are characterized by poor gravel roads with unclearly defined road network links due to conditions of the roads. The entire roads infrastructure has limited storm water drainages and poor maintenance strategy and results, some tarred roads are being destroyed by rains. There is also limited access to bridges to provide sufficient linkage on communities for economic engagements. The R40 road is the only provincial road which is well maintained by the Department of Roads and Transport; other provincial roads are not well maintained. The municipality has</i></p>

QUESTIONS AS PER GUIDELINE	EAP'S RESPONSE
	<p><i>budgeted money to improve the measure economic road and roads leading to social facilities (clinics and schools). The municipality has budgeted R110 000,000 for the 2018/19 financial year for paving of streets and maintenance of existing infrastructure.” (BLM IDP 2018-2022)</i></p>
<p>2.1.2. Spatial priorities and desired spatial patterns (e.g. need for integrated of segregated communities, need to upgrade informal settlements, need for densification, etc.)</p>	<p>In terms of the draft Provincial Spatial Development Framework (PSDF) Development Objectives it was highlighted as:</p> <p>Objective 5: Concentrate development on development corridors and nodes.</p> <ul style="list-style-type: none"> • Improve accessibility to rural towns and settlements by the development of transportation networks. • Enhance and expand existing freight corridors and transportation nodes. • Prioritise rural development along mobility corridors; and • Promote the development of nodes and corridors in rural areas historically disadvantaged communities that will help provide linkages to urban areas.
<p>2.1.3. Spatial characteristics (e.g. existing land uses, planned land uses, cultural landscapes, etc.), and</p>	<p>The area consists of mainly agricultural and conservation areas, with rural settlements. Road infrastructure includes a combination of gravel and tarred roads.</p>
<p>2.1.4. Municipal Economic Development Strategy (“LED Strategy”).</p>	<p>Service delivery and job creation demanded by residence has been identified as a challenge.</p>
<p>2.2. Considering the socio-economic context, what will the socio-economic impacts be of the development (and its separate elements/aspects), and specifically also on the socio-economic objectives of the area?</p>	<ul style="list-style-type: none"> • Improvement of traffic safety • Enhancement of the economy • Improvement of transport efficiency
<p>2.2.1. Will the development complement the local socio-economic initiatives (such as local economic development (LED) initiatives), or skills development programs?</p>	<p>Yes, local skills were encouraged within the EMPr. Local employment will be encouraged.</p>
<p>2.3. How will this development address the specific physical, psychological, developmental, cultural, and social needs and interests of the relevant communities?</p>	<p>The proposed development is anticipated to improve traffic safety and management of access for road users and the local community will be benefitted by the proposed project.</p> <p>Furthermore, the improvement of transport is encouraged whereby costs regarding transport infrastructure will decrease as the road space is managed better; therefore, the level of service of the road is also better as road users will have reduced travel time and road user costs. Economic boost and enhancement with providing service delivery and possible housing relief is encouraged in the proposed developable area.</p>
<p>2.4. Will the development result in equitable (intra- and inter-generational) impact distribution, in the short and long-term? Will the impact be socially and economically sustainable in the short- and long-term?</p>	<p>Yes, the proposed project is anticipated to improve traffic safety and management of access for road users.</p> <p>Road users will have reduced travel time and road user costs.</p>

QUESTIONS AS PER GUIDELINE	EAP'S RESPONSE
2.5. In terms of location, describe how the placement of the proposed development will:	
2.5.1. Result in the creation of residential and employment opportunities in close proximity to or integrated with each other	<p>The accessibility between regions and towns will improve.</p> <p>The access for residents to areas of work, holiday, and transport will also be beneficial, and road users will have reduced travel time and road user costs, which will benefit the economy of the region and province.</p>
2.5.2. Reduce the need for transport of people and goods,	<p>Yes, it will be a direct link with effective time management and reduced time to between district and local roads.</p>
2.5.3. Result in access to public transport or enable non-motorised and pedestrian transport (e.g. will the development result in densification and the achievement of thresholds in terms public transport),	<p>The access from residential areas to areas of work will benefit road users with reduced travel time and road user costs.</p>
2.5.4. Compliment other uses in the area	<p>It will lead to the economic growth of commerce.</p> <p>Road users will experience reduced travel time and road user costs which can in turn benefit local businesses.</p>
2.5.5. Be in line with the planning for the area,	<p>The activity is in line with the Bushbuckridge Local Municipality IDP that in turn aligns with the Ehlanzeni District Transport Plan, which envisages improving the road links network to enable access to service points.</p> <p>As indicated in the BLM IDP:</p> <p><i>“Bushbuckridge Local Municipality’s roads are characterized by poor gravel roads with unclearly defined road network links due to conditions of the roads. The entire roads infrastructure has limited storm water drainages and poor maintenance strategy and results, some tarred roads are being destroyed by rains. There is also limited access to bridges to provide sufficient linkage on communities for economic engagements. The R40 road is the only provincial road which is well maintained by the Department of Roads and Transport; other provincial roads are not well maintained. The municipality has budgeted money to improve the measure economic road and roads leading to social facilities (clinics and schools). The municipality has budgeted R110 000,000 for the 2018/19 financial year for paving of streets and maintenance of existing infrastructure.”</i> (BLM IDP 2018-2022)</p>
2.5.6. For urban related development, make use of underutilised land available with the urban edge,	<p>Not applicable as the project is in a rural environment.</p>
2.5.7. Optimise the use of existing resources and infrastructure,	<p>An existing 3-way interchange will be upgraded to a 4-way intersection. The new road deviation will connect with an existing gravel road.</p>
2.5.8. Opportunity costs in terms of bulk infrastructure expansions in non-priority areas (e.g. not aligned with the bulk infrastructure planning for the settlement that reflects the spatial reconstruction priorities of the settlement),	<p>Bettered access and fast free-moving movement between local towns will encourage economic growth and more people will make use of the services in nearby towns.</p> <p>The access for residents to areas of work, holiday, and transport will also be beneficial, and road users will have reduced travel time and road user costs, which will benefit the economy of the region and province.</p>

QUESTIONS AS PER GUIDELINE	EAP'S RESPONSE
2.5.9. Discourage "urban sprawl" and contribute to compaction/densification,	The proposed project is in a rural environment.
2.5.10. Contribute to the correction of the historically distorted spatial patterns of settlements and to the optimum use of existing infrastructure in excess of current needs,	Traffic safety and security will potentially enhance and lead to economic growth of the area and provide more opportunities to services and products offered. Providing tarred roads will replace traditional gravel roads in rural area.
2.5.11. Encourage environmentally sustainable land development practices and processes,	Yes, the proposed layout design has the best approach to accommodate all environmental features with the least impact on the environment.
2.5.12. Take into account special locational factors that might favour the specific location (e.g. the location of a strategic mineral resource, access to the port, access to rail, etc.),	The location of the intersection and design of the new road will conform to SANRAL requirements and safety specifications.
2.5.13. The investment in the settlement or area in question will generate the highest socio-economic returns (i.e. an area with high economic potential),	Yes, the proposed project is anticipated to improve traffic safety and management of access for road users. Road users will have reduced travel time and road user costs whilst improve interconnectivity between local towns.
2.5.14. Impact on the sense of history, sense of place and heritage of the area and the socio-cultural and cultural-historic characteristics and sensitivities of the area, and	No, the proposed development will not have a negative impact on the sense of history, sense of place or heritage. It will rather benefit road users, commerce, and industries.
2.5.15. In terms of the nature, scale and location of the development promote or act as a catalyst to create a more integrated settlement?	Yes, the proposed development may result in an increase in the economy by making it more viable, resulting in an influx of road users whereby economic growth of industry and commerce is achieved. Therefore, more people will utilise the new proposed road and may result employment opportunities.
2.6. How were a risk-averse and cautious approach applied in terms of socio-economic impacts?	All environmental socio-economic impacts were assessed.
2.6.1. What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)	To our knowledge, there are no gaps or uncertainties related to the socio environment.
2.6.2. What is the level of risk (note: related to inequality, social fabric, livelihoods, vulnerable communities, critical resources, economic vulnerability and sustainability) associated with the limits of current knowledge?	Risk in terms of safety for motorists, the people walking on the road, are they going to have a paved area for pedestrians to walk on?
2.6.3. Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?	An Environmental Management Programme (EMPr) has been compiled to address various impacts through identified mitigation measures. The proposed development will aim to improve traffic safety, enhance economic viability, and enhance the social environmental issues.
2.7. How will the socio-economic impacts resulting from this development impact on people's environmental right in terms following:	

QUESTIONS AS PER GUIDELINE	EAP'S RESPONSE
<p>2.7.1. Negative impacts: e.g. health (e.g. HIV-Aids), safety, social ills, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimize, manage and remedy negative impacts?</p>	<p>During construction health and safety measures will be implemented through a Health & Safety team.</p> <p>There will be an increase in traffic accidents due to the increased speeds which comes with a tarred road. Pedestrian incidents may also increase.</p> <p>Refer to the EMPr contained in Appendix F.</p>
<p>2.7.2 Positive impacts. What measures were taken to enhance positive impacts?</p>	<p>Refer to the EMPr contained in Appendix F.</p> <p>Traffic safety will be enhanced, economic viability will be bettered, transport efficiency will be enhanced, and local development and skills transfer encouraged.</p> <p>Roads will be designed to national safety specifications to ensure minimal incidents. The construction of a tarred road will decrease travel time for road users.</p>
<p>2.8 Considering the linkages and dependencies between human wellbeing, livelihoods and ecosystem services, describe the linkages and dependencies applicable to the area in question and how the development's socio-economic impacts will result in ecological impacts (e.g. over utilization of natural resources, etc.)?</p>	<p>An increase in traffic can lead to an increase in air emissions in the local area.</p>
<p>2.9 What measures were taken to pursue the selection of the "best practicable environmental option" in terms of socio-economic considerations?</p>	<p>Traffic safety is most probably the highest indicator and benefit of all. It has been proven that if you control access on roads, the accident rate of the road decreases.</p> <p>The more access allowed on a road, the higher the accident rate. The proposal was selected as the most preferred option, as it enhances traffic safety and has the least impact on ecological features. Refer to mitigation measures contained in the EMPr, under Appendix F</p>
<p>2.10 What measures were taken to pursue environmental justice so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons (who are the beneficiaries and is the development located appropriately)? Considering the need for social equity and justice, do the alternatives identified, allow the "best practicable environmental option" to be selected, or is there a need for other alternatives to be considered?</p>	<p>Two alternatives were considered, as indicated in this Basic Assessment Report and comparing it to the Environmental Impact Statement. Site Alternatives only exist for the proposal, while the No-Go Alternative has been investigated. The site layout development has been undertaken prior to choosing the proposal, however the other layout was are not feasible and will have a massive impact on the safety of road users.</p>
<p>2.11 What measures were taken to pursue equitable access to environmental resources, benefits, and services to meet basic human needs and ensure human wellbeing, and what special measures were taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination?</p>	<p>Economic viability will increase, as economic growth of the local area is stimulated. Please refer to the EMPr contained in Appendix F.</p>
<p>2.12 What measures were taken to ensure that the responsibility for the environmental health and safety consequences of the development has been addressed throughout the development's life cycle?</p>	<p>Please refer to Appendix F for the EMPr for mitigation measures.</p> <p>A separate Health & Safety Plan and measures will be implemented during the construction phases,</p>

QUESTIONS AS PER GUIDELINE	EAP'S RESPONSE
	<p>Various safety measures will be included in the design of the road and intersection.</p>
<p>2.13 What measures were taken to: 2.13.1 Ensure the participation of all interested and affected parties, 2.13.2 provide all people with an opportunity to develop the understanding, skills, and capacity necessary for achieving equitable and effective participation. 2.13.3 ensure participation by vulnerable and disadvantaged persons. 2.13.4 promote community wellbeing and empowerment through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means. 2.13.5 Ensure openness and transparency, and access to information in terms of the process. 2.13.6 Ensure that the interests, needs and values of all interested and affected parties were taken into account, and that adequate recognition were given to all forms of knowledge, including traditional and ordinary knowledge. 2.13.7 Ensure that the vital role of women and youth in environmental management and development were recognized and their full participation therein was promoted?</p>	<p>All Public Participation is contained in Appendix G.</p>
<p>2.14 Considering the interests, needs and values of all the interested and affected parties, describe how the development will allow for opportunities for all the segments of the community (e.g. a mixture of low-, middle-, and high-income housing opportunities) that is consistent with the priority needs of the local area (or that is proportional to the needs of an area)?</p>	<p>The cost regarding transport infrastructure will decrease as the road space is managed better; therefore, the level of services that the road must offer is better as road users will have reduced travel time and road user costs. The accessibility between local villages will improve and traffic safety will be enhanced, thereby having a positive impact on road users as well as the community growth and development.</p>
<p>2.15 What measures have been taken to ensure that current and/or future workers will be informed of work that potentially might be harmful to human health or the environment or of dangers associated with the work, and what measures have been taken to ensure that the right of workers to refuse such work will be respected and protected?</p>	<p>Please refer to Appendix F for the EMPr containing mitigation measures for potential work seekers and employees during the construction phase.</p> <p>Health & Safety measures will be put in place during the maintenance period once construction is complete.</p>
<p>2.16 Describe how the development will impact on job creation in terms of, amongst other aspects</p>	
<p>2.16.1 the number of temporary versus permanent jobs that will be created,</p>	<p>A contractor will be appointed by the applicant who will be responsible for appointment of temporary and permanent staff. The appointments will be applicable to the construction phase. The EMPr, contained under Appendix H, that local employees should be encouraged to be utilised to encourage skills transfer and development.</p>

QUESTIONS AS PER GUIDELINE	EAP'S RESPONSE
<p>2.16.2 Whether the labour available in the area will be able to take up the job opportunities (i.e. do the required skills match the skills available in the area),</p>	<p>The EMPr, contained under Appendix F, indicates that local employees should be encouraged to be utilised to encourage skills transfer and development. This will enhance the general area skills, provide job opportunities to potential job seekers and manage it in the best suitable way.</p>
<p>2.16.3 the distance from where labourers will have to travel,</p>	<p>The EMPr, contained under Appendix F, will indicate that local employees should be encouraged to be utilised to encourage skills transfer and development. This will enhance the general travel time.</p>
<p>2.16.4 the location of jobs opportunities versus the location of impacts (i.e. equitable distribution of costs and benefits), and</p>	<p>The EMPr, contained under Appendix F, will indicate that local employees should be encouraged to be utilised to encourage skills transfer and development. This will enhance the general travel time.</p>
<p>2.16.5 The opportunity costs in terms of job creation (e.g., a mine might create 100 jobs, but impact on 1000 agricultural jobs, etc.)</p>	<p>The EMPr encourages utilising local job seekers for the proposed project from the neighbouring towns; however, it is still the contractors' own discretion that they would like to utilise during the construction period. The BAR and EMPr can only suggest the utilisation of residents to encourage skills transfer; however, ultimately it is up to the contractor who will make appointments and grant jobs.</p>
<p>2.17 What measures were taken to ensure:</p>	
<p>2.17.1. that there were intergovernmental coordination and harmonization of policies, legislation and actions relating to the environment, and</p>	<p>National Legislation i.e., NEMA, NWA, NHRA, NEM:BA were consulted in the preparation of this Basic Assessment Report. Provincial guidelines also formed part of the literature review. Spatial development tools also aided the EAP to assess and provide information pertaining to the proposed development.</p>
<p>2.17.2. That actual or potential conflicts of interest between organs of state were resolved through conflict resolution procedures?</p>	<p>Refer to the public participation section in this report. All detailed public participation details are contained in Appendix G.</p>
<p>2.18. What measures were taken to ensure that the environment will be held in public trust for the people, that the beneficial use of environmental resources will serve the public interest, and that the environment will be protected as the people's common heritage?</p>	<p>The proposed development is proposed by the Department of Public Works, Roads, and Transport (DPWRT). A heritage impact assessment was undertaken where heritage impacts, and cultural impacts were assessed and with mitigation measures provided where necessary. No Heritage resources were identified.</p>
<p>2.19. Are the mitigation measures proposed realistic and what long-term environmental legacy and managed burden will be left?</p>	<p>Yes, stormwater control measures and pipe culverts will assist with flow control of any drainage lines.</p>
<p>2.20. What measures were taken to ensure that the costs of remedying pollution, environmental degradation, and consequent adverse health effects and of preventing, controlling, or minimising further pollution, environmental damage or adverse health effects would be paid for by those responsible for harming the environment?</p>	<p>Refer to Appendix F for the EMPr.</p>

QUESTIONS AS PER GUIDELINE	EAP'S RESPONSE
<p>2.21. Considering the need to secure ecological integrity and a healthy biophysical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the best practicable environmental option in terms of socio-economic considerations?</p>	<p>Refer to the Impact Assessment section above.</p>
<p>2.22. Describe the positive and negative cumulative socio-economic impacts bearing in mind the size, scale, scope, and nature of the project in relation to its location and other planned developments in the area?</p>	<p>The cost regarding transport infrastructure will decrease as the road space is managed better; therefore, the level of services that the road must offer is better as road users will have reduced travel time and road user costs. The accessibility between local villages will improve and traffic safety will be enhanced, thereby having a positive impact on road users as well as the community growth and development.</p> <p>Due to the hardening of the road, naturally car travelling speeds will increase which may increase the risk of traffic accidents.</p>

7 PUBLIC PARTICIPATION PROCESS

7.1 Description of the Process Undertaken

In undertaking an Environmental Impact Assessment (EIA), which is undertaken in terms of the National Environmental Management Act (NEMA), Act No. 107 of 1998, as amended, a formal **public participation process (PPP)** is undertaken as detailed in Regulation 39-44 of the EIA Regulations, 2014 (as amended).

As prescribed in the EIA Regulation's in Regulation 40 of Chapter 6, the purpose of public participation in relation to a basic assessment *report must give all potential or registered interested and affected parties, including the competent authority, a period of at least 30 days to submit comments on each of the basic assessment report, EMPr, scoping report and environmental impact assessment report, and where applicable the closure plan, as well as the report contemplated in regulation 32, if such reports or plans are submitted at different times.*

It goes on further to state:

The public participation process contemplated in this regulation must provide access to all information that reasonably has or may have the potential to influence any decision about an application unless access to that information is protected by law and must include consultation with—

- (a) The competent authority;*
- (b) Every State department that administers a law relating to a matter affecting the environment relevant to an application for an environmental authorisation;*
- (c) All organs of state which have jurisdiction in respect of the activity to which the application relates; and*
- (d) All potential, or, where relevant, registered interested and affected parties (I&APs).*

The aim of the public participation process is primarily to ensure that:

- Information containing all relevant facts in respect of the project is made available to potential stakeholders and I&APs.
- Participation by potential I&APs is facilitated in such a manner that all potential stakeholders and I&APs are provided with a reasonable opportunity to comment on the project.
- Comments received from stakeholders and I&APs are recorded and incorporated into the basic assessment report.

Therefore, various stakeholders (Government entities) have been identified and will be informed, whilst potential I&APs will be notified of the project through various platforms, refer to Section 6.3.

I&APs are provided with the opportunity to register and provide comment on the application as an.

An initial PPP will be conducted pre-application, after which a further 30 days will be afforded to registered I&APs to provide comments during the statutory phase.

The official comment period of thirty (30) days will be determine once an application has been submitted.

- **Initial Commenting Period:** 7th May 2021 to 7th June 2021 where I&APs will be able to register and submit comments on the application to our offices for consideration and inclusion in this report.

After the public participation process is completed as stipulated above, the Basic Assessment Report (this report) will be consolidated containing proof of the public participation process as well as other requested information for submission to the DARDLEA.

This report is current for the pre-application phase of the project. No formal application has been submitted to date.

7.2 Identified Interested and Affected Parties (I&APs)

Identification of I&APs was undertaken by NCC through existing contacts and databases, recording responses to site notices and newspaper advertisements, as well as through the process of networking. The key stakeholder groups identified include authorities, the metropolitan municipality, organs of state departments, state- owned companies and non-governmental organisations.

The following I&APs were identified:

Organs of State
National Government Departments
• Department of Agriculture, Forestry and Fisheries (DAFF)
• Department of Water and Sanitation (DWS)
• Department of Mineral Resources and Energy (DMRE)
• Government Bodies and State-Owned Companies
• South African Heritage Resources Agency (SAHRA)
• Inkomati-Usuthu Catchment Management Area (IUCMA)
Provincial Government Departments
• Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs
• Mpumalanga Provincial Heritage Resource Authority (MPHRA)
Local Government Departments
• Bushbuckridge Local Municipality
Other Stakeholders
• Affected landowners and tenants
• Ward Councillors
• Neighboring communities
• South African National Parks
• Mpumalanga Tourism and Parks Agency

7.3 Notifications

To accommodate the varying needs of stakeholders and I&APs within the study area, as well as capture their comments regarding the new road deviation, various opportunities for stakeholders and I&APs to be involved in the process have been provided, as follows:

- Opportunity for register as an I&AP and review of the Basic Assessment Report for a 30-day period from **7th May 2021 to 7th June 2021**. Comments received from I&APs during this period will be captured within a Comments and Response Report, which will be included within the Final BAR, for submission to the DARDLEA for decision-making.

I&APs will be notified in writing by means of the following:

- Emails (Section 7.3.1).
- Bulk SMS
- Advertisement in the Letaba Herald newspaper (Section 7.3.2).
- Site notices (Section 0) placed up at the site.

I&APs could obtain the pre-application Draft BAR and associated documents from the following:

- www.ncc-group.co.za
- Henry Mdluli Public Library (Hluvukani)

Notifications were compiled in accordance with the guidelines provided by in NEMA: EIA Regulations.

In addition, a Background Information Document (BID) was provided along with the notification (

7.3.1 Background Information Document (BID) & Notifications Letter

A BID and Notification letter will be sent to all pre identified I&APs highlighting the various avenues to register and provide comment. Letters will be supplied to the local Community Liaison Officers (CLO) and/or ward councillors where the residents will be able to review, register, and provide comment.

A copy of the written notice was sent via email to the **relevant organs of state and other potential I&APs**.

7.3.2 Newspaper Advertisement

A pre-application advertisement was published in **The Letaba Herald** on 7th May 2021 informing the public of the opportunity to register and provide comment for proposed project.

Referred to Appendix G2.

7.3.3 Site Notice

Site notices were placed on site informing the public of the proposed development.

Site notices were placed at the start and end of the proposed road section.

An additional notification was placed at the Henry Mdluli Public Library (Hluvukani).



Figure 7: Notice placed at beginning of proposed project.



Figure 8: Notice placed at end of proposed project.

7.4 Registration & Commenting Period

The pre-application draft Basic Assessment Report will be made available for comment to all registered interested and affected parties and relevant organs of state for a period of 30 days:

- **7th May 2021 to 7th June 2021**

Any comments received from I&AP's during this period will be considered and incorporated into the Final Basic Assessment Report through a Comments & Response Report before final submission to the DARDLEA.

7.5 Summary of Issues Raised by I&APs

All comments received will be responded to in the Comments and Response Report.

A Comments and Response Summary will be formulated and attached as an appendix once the statutory process has commenced, and PPP has been undertaken.

A summary of all the issues and / or concerns that will be received from I&APs will be presented in a table format.

Copies of the full submissions will be in the final Draft BAR.

8 ALTERNATIVES, METHODOLOGY AND ASSESSMENT OF ALTERNATIVES

8.1 Details of the alternatives identified and considered.

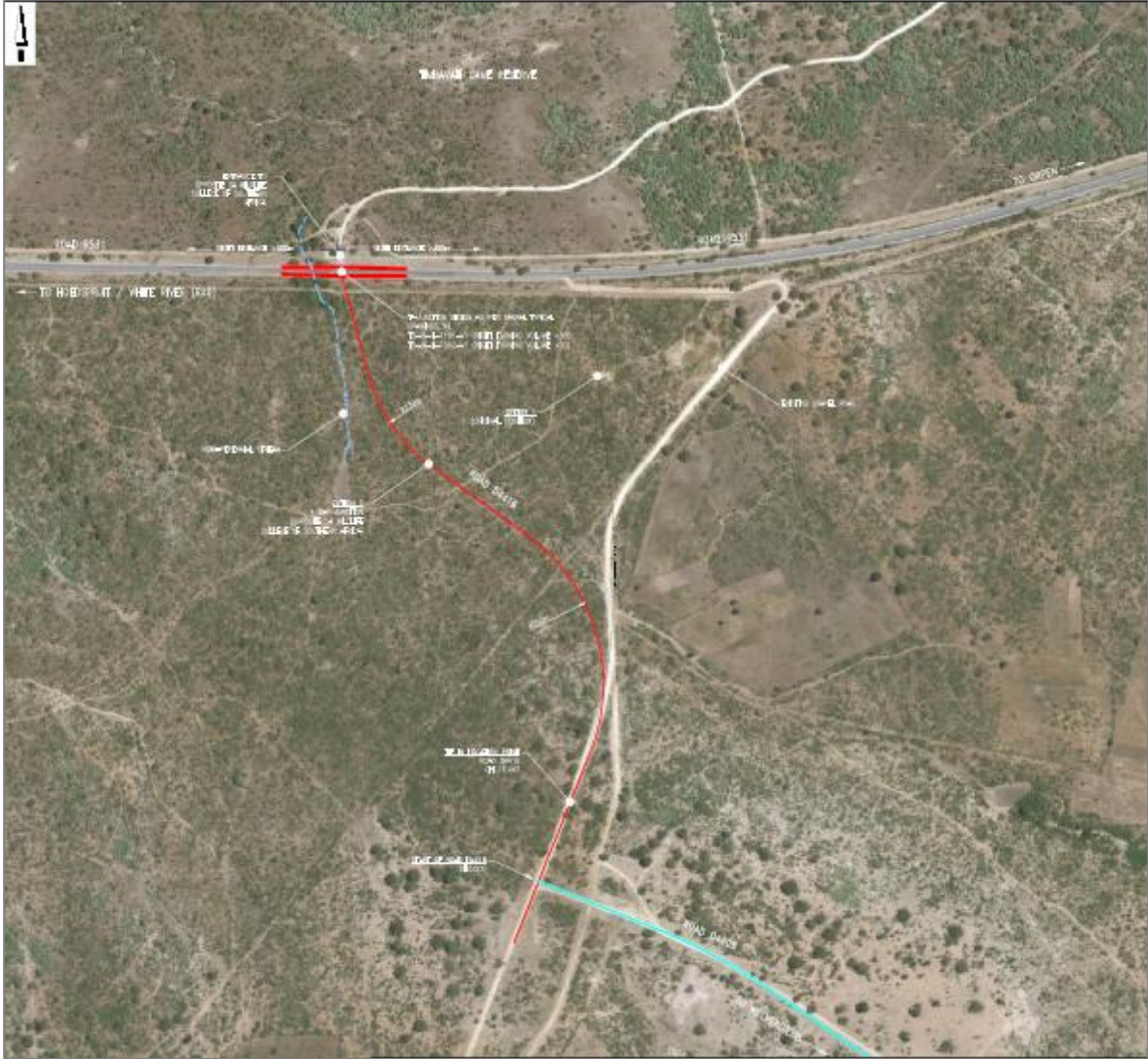
6.1.1. Site alternatives	
A description of preferred site alternative.	
<p>The preferred site alternative was considered to conform to SANRAL standards for intersections the as existing position of the intersection does not conform to SANRAL standards.</p> <p>It is located on the same property which was previously earmarked for the original intersection prior to consultation with SANRAL.</p>	
A description of any other site alternatives investigated.	
<p>No alternative was considered as SANRAL classify entrance to the SA Wildlife college as a formal intersection and the most appropriate location for the new intersection and associated new section of road.</p>	
Motivation for the preferred site alternative.	
<p>Various options for the intersection were tabled during the initial design stage and where the original position was deemed the preferred option. However, after consultations with SANRAL regarding the initial position of the intersection, it was revealed that the position of the intersection does not conform to SANRAL standards. Moving of the intersection to the entrance to the SA Wildlife college was the preferred option as SANRAL classified this as a formal intersection. The new road section is the most direct route using existing roads and path of least resistance whilst conforming to road safety requirements.</p>	
A full description of the process followed to reach the preferred alternative within the site.	
<p>Refer above <i>Motivation for the preferred site alternative</i>.</p>	
Motivation for not considering site alternatives	
<p>Refer to above <i>Motivation for the preferred site alternative</i>.</p>	
6.1.2. Activity alternatives	
Description of preferred activity alternative.	
<p>The proposed re-alignment of D4416 and the upgrade of the current intersection (SA Wildlife College).</p>	
Description of other activity alternatives investigated.	
<p>No activity alternatives were considered.</p>	
Motivation for the preferred activity alternative.	
<p>The proposed re-alignment of D4416 and the upgrade of the current intersection (SA Wildlife College) forms part of the provincial road upgrading project.</p>	
Motivation for not considering activity alternatives	
<p>No activity alternatives were considered as there is no economically suitable substitute for the interconnectivity of roads and villages other than a road.</p>	
List of positive and negative impacts that the activity alternatives will have on the environment.	
<p>No activity alternatives were considered.</p>	

6.1.3. Design or layout alternatives

Description of preferred design or layout alternative.

The re-alignment will utilize existing road after which a new section of road will be required to meet up with the upgraded 4-way intersection located at the South African Wildlife College

The preferred design conforms to SANRAL intersection and road safety standards.



Description of other design or layout alternatives investigated.

Option 1 (Blue line) – No-go. Not supported as it does not comply to intersection spacing requirements and does not have sufficient sight distance as per input from National Road Agency (SANRAL).

Option 2 (Red line) - 4-way intersection opposite SA wildlife college is the preferred option.

Option 3 (Green line) – No-go. Not supported as it does not comply to intersection spacing requirements does not have sufficient sight distance as per input from National Road Agency (SANRAL).



Motivation for the preferred design or layout alternative.

Various design options for the road re-alignment and intersection were tabled however, after consultations with SANRAL regarding the position of the intersection, it was established that the preferred design alternative was the only option to confirm to SANRAL stands and requirements. The road re-alignment, where possible, utilizing existing roads and the intersection is located at an existing formal intersection.

Motivation for not considering design or layout alternatives

Not applicable. See above *Motivation for the preferred design or layout alternative.*

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

Preferred Design Alternative	
Positive	Negative
Intersection conforming to SANRAL standards	Removal of indigenous vegetation
Road deviation conforming to SANRAL standards	Impeding of drainage lines
Increased road safety	
Design Alternative 1	
Positive	Negative
Road deviation conforming to SANRAL standards	Intersection not conforming to SANRAL standards
Increased road safety	Removal of indigenous vegetation
	Impeding of drainage lines

6.1.4. Technology alternatives

Provide a description of the preferred technology alternative:

No technology alternatives were considered as the current technology conforms to South African National Roads Agency SOC Ltd (SANRAL) standards

Provide a description of any other technology alternatives investigated.

No technology alternatives were considered as the current technology conforms to SANRAL standards

Provide a motivation for the preferred technology alternative.

No technology alternatives were considered as the current technology conforms to SANRAL standards

Provide a detailed motivation if no alternatives exist.

No technology alternatives were considered since the proposed road conforms to current SANRAL codes and standards

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

No technology alternatives were considered.

6.1.5. The option of not implementing the activity (the 'No-Go' Option).

The option of not implementing the proposed activities will result in the non-completion of the greater road upgrade project in the area and the moving the intersection from the preferred location will result in non-conformance to SANRAL's requirements for road and intersection safety.

Local villages will be denied access to safe road and the status quo of travel time will remain the same for between all tarred roads and villages.

8.2 Methodology to determine the significance ratings of the potential environmental impacts and risks associated with the alternatives.

The standard methodology used in the environmental impact assessment to determine the significance rating of the potential impacts are outlined in this section.

8.2.1 Significance

The **significance** of an impact is defined as the combination of the **consequence** of the impact occurring and the **probability** that the impact will occur. The nature and type of impact may be direct or indirect and may also be positive or negative, refer to Table 6 below for the specific definitions.

Table 6: Nature and type of impact.

		Nature and Type of Impact:	
IMPACT	Direct	Impacts that are caused directly by the activity and generally occur at the same time and place as the activity	
	Indirect	Indirect or induced changes that may occur because of the activity. These include all impacts that do not manifest immediately when the activity is undertaken, or which occur at a different place as a result of the activity	
	Cumulative	Those impacts associated with the activity which add to, or interact synergistically with existing impacts of past or existing activities, and include direct or indirect impacts which accumulate over time and space	
	Positive	Impacts affect the environment in such a way that natural, cultural and / or social functions and processes will benefit significantly, and includes neutral impacts (those that are not considered to be negative	+
	Negative	Impacts affect the environment in such a way that natural, cultural and/or social functions and processes will be comprised	-

Table 7 presents the defined criteria used to determine the **consequence** of the impact occurring which incorporates the extent, duration, and intensity (severity) of the impact.

Table 7: Consequence of the Impact occurring.

CONSEQUENCE	Extent of Impact:	
	Site	Impact is limited to the site and immediate surroundings, within the study site boundary or property (immobile impacts)
	Neighbouring	Impact extends across the site boundary to adjacent properties (mobile impacts)
	Local	Impact occurs within a 5km radius of the site
	Regional	Impact occurs within a provincial boundary
	National	Impact occurs across one or more provincial boundaries
	Duration of Impact:	
	Incidental	The impact will cease almost immediately (within weeks) if the activity is stopped, or may occur during isolated or sporadic incidences
	Short-term	The impact is limited to the construction phase, or the impact will cease within 1 - 2 years if the activity is stopped
	Medium-term	The impact will cease within 5 years if the activity is stopped
	Long-term	The impact will cease after the operational life of the activity, either by natural processes or by human intervention
	Permanent	Where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient
	Intensity or Severity of Impact:	
	Low	Impacts affect the environment in such a way that natural, cultural and/or social functions and processes are not affected
	Low-Medium	Impacts affect the environment in such a way that natural, cultural and/or social functions and processes are modified insignificantly
	Medium	Impacts affect the environment in such a way that natural, cultural and/or social functions and processes are altered
	Medium-High	Impacts affect the environment in such a way that natural, cultural and / or social functions and processes are severely altered
	High	Impacts affect the environment in such a way that natural, cultural and / or social functions and processes will permanently cease

The probability of the impact occurring is the likelihood of the impacts occurring and is determined based on the classification provided in Table 9.

Table 8: Probability and confidence of impact prediction.

Probability of Potential Impact Occurrence		
PROBABILITY	Improbable	The possibility of the impact materialising is very low either because of design or historic experience
	Possible	The possibility of the impact materialising is low either because of design or historic experience
	Likely	There is a possibility that the impact will occur
	Highly Likely	There is a distinct possibility that the impact will occur
	Definite	The impact will occur regardless of any prevention measures

The **significance** of the impact is determined by considering the consequence and probability without considering any mitigation or management measures and is then ranked according to the ratings listed in Table 9. The level of confidence associated with the impact prediction is also considered as low, medium, or high (

Table 10).

Table 9: Significance rating of the impact.

Significance Ratings:		
SIGNIFICANCE	Low	Neither environmental nor social and cultural receptors will be adversely affected by the impact. Management measures are usually not provided for low impacts
	Low-Medium	Management measures are usually encouraged to ensure that the impacts remain of Low-Medium significance. Management measures may be proposed to ensure that the significance ranking remains low-medium
	Medium	Natural, cultural and/or social functions and processes are altered by the activities, and management measures must be provided to reduce the significance rating
	Medium-High	Natural, cultural and/or social functions and processes are altered significantly by the activities, although management measures may still be feasible
	High	Natural, cultural, and/or social functions and processes are adversely affected by the activities. The precautionary approach will be adopted for all high significant impacts and all possible measures must be taken to reduce the impact

Table 10: Level of confidence of the impact prediction.

Level of Confidence in the Impact Prediction:							
CONFIDENCE	<table border="1"> <tr> <td style="background-color: #cccccc;">Low</td> <td>Less than 40% sure of impact prediction due to gaps in specialist knowledge and/or availability of information</td> </tr> <tr> <td style="background-color: #cccccc;">Medium</td> <td>Between 40 and 70% sure of impact prediction due to limited specialist knowledge and/or availability of information</td> </tr> <tr> <td style="background-color: #cccccc;">High</td> <td>Greater than 70% sure of impact prediction due to outcome of specialist knowledge and/or availability of information</td> </tr> </table>	Low	Less than 40% sure of impact prediction due to gaps in specialist knowledge and/or availability of information	Medium	Between 40 and 70% sure of impact prediction due to limited specialist knowledge and/or availability of information	High	Greater than 70% sure of impact prediction due to outcome of specialist knowledge and/or availability of information
Low	Less than 40% sure of impact prediction due to gaps in specialist knowledge and/or availability of information						
Medium	Between 40 and 70% sure of impact prediction due to limited specialist knowledge and/or availability of information						
High	Greater than 70% sure of impact prediction due to outcome of specialist knowledge and/or availability of information						

Once significance rating has been determined for each impact, management and mitigation measures must be determined for all impacts that have a significance ranking of Medium and higher to attempt to reduce the level of significance that the impact may reflect.

The EIA Regulations, 2014 (as amended) specifically require a description be provided of the degree to which these impacts:

- Can be reversed.
- May cause irreplaceable loss of resources; and
- Can be avoided, managed, or mitigated.

Based on the proposed mitigation measures the EAP will determined a mitigation efficiency (Table 11) whereby the initial significance is re-evaluated and ranked again to affect a significance that incorporates the mitigation based on its effectiveness. The overall significance is then re-ranked, and a final significance rating is determined.

Table 11: Mitigation efficiency.

Mitigation Efficiency													
MITIGATION EFFICIENCY	<table border="1"> <tr> <td style="background-color: #cccccc;">None</td> <td>Not applicable</td> </tr> <tr> <td style="background-color: #cccccc;">Very Low</td> <td>Where the significance rating stays the same, but where mitigation will reduce the intensity of the impact. Positive impacts will remain the same</td> </tr> <tr> <td style="background-color: #cccccc;">Low</td> <td>Where the significance rating reduces by one level, after mitigation</td> </tr> <tr> <td style="background-color: #cccccc;">Medium</td> <td>Where the significance rating reduces by two levels, after mitigation</td> </tr> <tr> <td style="background-color: #cccccc;">High</td> <td>Where the significance rating reduces by three levels, after mitigation</td> </tr> <tr> <td style="background-color: #cccccc;">Very High</td> <td>Where the significance rating reduces by more than three levels, after mitigation</td> </tr> </table>	None	Not applicable	Very Low	Where the significance rating stays the same, but where mitigation will reduce the intensity of the impact. Positive impacts will remain the same	Low	Where the significance rating reduces by one level, after mitigation	Medium	Where the significance rating reduces by two levels, after mitigation	High	Where the significance rating reduces by three levels, after mitigation	Very High	Where the significance rating reduces by more than three levels, after mitigation
None	Not applicable												
Very Low	Where the significance rating stays the same, but where mitigation will reduce the intensity of the impact. Positive impacts will remain the same												
Low	Where the significance rating reduces by one level, after mitigation												
Medium	Where the significance rating reduces by two levels, after mitigation												
High	Where the significance rating reduces by three levels, after mitigation												
Very High	Where the significance rating reduces by more than three levels, after mitigation												

The reversibility is directly proportional the “Loss of Resource” where no loss of resource is experienced, the impact is completely reversible; where a substantial “Loss of resource” is experienced there is a medium degree of reversibility; and an irreversible impact relates to a complete loss of resources, i.e. irreplaceable (Table 12).

Table 12: Degree of reversibility and loss of resources.

DEGREE REVERSABILITY & LOSS OF RESOURCES	Loss of Resources:	
	No Loss	No loss of social, cultural and/or ecological resource(s) are experienced. Positive impacts will not experience resource loss
	Partial	The activity results in an insignificant or partial loss of social, cultural and/or ecological resource(s)
	Substantial	The activity results in a significant loss of social, cultural and/or ecological resource(s)
	Irreplaceable	The activity results in the complete and irreplaceable social, cultural and/or ecological loss of resource(s)
	Reversibility:	
	Irreversible	Impacts on natural, cultural and/or social functions and processes are irreversible to the pre-impacted state in such a way that the application of resources will not cause any degree of reversibility
	Medium Degree	Impacts on natural, cultural and/or social functions and processes are partially reversible to the pre-impacted state if less than 50% resources are applied
	High Degree	Impacts on natural, cultural and/or social functions and processes are partially reversible to the pre-impacted state if more than 50% resources are applied
	Reversible	Impacts on natural, cultural and/or social functions and processes are fully reversible to the pre-impacted state if adequate resources are applied

8.2.2 Cumulative Impacts

It is important to assess the natural environment using a systems approach that will consider the cumulative impact of various actions. Cumulative impact refers to the impact on the environment, which results from the incremental impact of the actions when added to other past, present, and reasonably foreseeable future actions regardless of what agencies or persons undertake such actions. Cumulative impacts can result from individually minor, but collectively significant actions or activities taking place over a period. Cumulative effects can take place frequently and over a period that the effects cannot be assimilated by the environment.

8.3 Mitigation

An Environmental Management Programme (EMPr) has been developed based on the findings of the impact assessment of the EIA. This will be amended if any significant comments come from the PPP.

The EMPr will be compiled as a site-specific mitigation measure for all medium to high (significant) impacts.

8.4 Impact Assessment

The negative and positive impacts assessed in this section has already occurred and will therefore be assigned two assessment ratings, namely the impact rating assigned to the status (without mitigation) and the impact significance after the management measures have been implemented (with mitigation).

Management measures for the above-described impacts are discussed in Section 1. A re-evaluation of the impacts has been made after consideration of implementing the management measures (refer to Table 13).

Table 13: Preferred Alternative Assessment (The Proposal)

	Preferred Alternative (1)										
	IMPACTS				SIGNIFICANCE (MMV)	CONFIDENCE	MANAGEMENT & MITIGATION MEASURES	MITIGATION EFFICIENCY	SIGNIFICANCE (MMV)	DEGREE	
	TYPE	DESCRIPTION	CUMULATIVE	NATURE						LOSS RESOURCE	REVERSIBILITY
CONSTRUCTION PHASE											
Atmospheric Emissions	Direct	Dust Nuisance	No	Negative	Low	Medium	Dust suppression measures will be implemented during the construction phase to minimise dust generated by construction activities.	High	Low	No Loss	Reversible
	Indirect	Noise Pollution	No	Negative	Low	Medium	All construction vehicles will be maintained such as to operate efficiently. Idling times of machinery to be minimised. Operations shall not occur before or after normal working hours. Noise mufflers should be utilized to reduced noise. Keep an open channel of communication between all stakeholders and keep record of any concerns raised.	High	Low	No Loss	Reversible
Discharge to Water	Direct	Siltation of water course	Yes	Negative	Low	Medium	Storm water management must be properly implemented as to minimise silt discharge into surrounding systems during rainstorm events.	Medium	Low	Partial	High Degree
	Direct	Surface water run-off	Yes	Negative	Low	Medium	Storm water management must be properly implemented as to minimise silt discharge into surrounding systems during rainstorm events.	Medium	Low	Partial	High Degree
	Direct	Contamination of water from hazardous substances	Yes	Negative	Low	Medium	Measures will be implemented to ensure that no hydrocarbons and/or other pollutant liquids are spilt. A clean-up protocol to be compiled and followed. Appropriate hydrocarbon spill kit must be made available on site. No hydrocarbons are to be stored with water course or within proximity. Plant and equipment are to be in good working order.	Medium	Low	Partial	High Degree
	Direct	Disturbance of natural drainage lines	No	Negative	Medium	High	Discharge and divert storm water to sediment trap to allow particulate matter to settle out.	High	Low	Substantial	Medium Degree
	Direct	Disturbance of aquatic ecological systems	Yes	Negative	Low	Medium	Measures to be implemented to ensure that disturbances to aquatic ecological systems are prevented as far as possible.	Medium	Low	Partial	High Degree
Waste Generation	Direct	Domestic waste	No	Negative	Low	Medium	A waste management system to be formulated and implemented on site. All employees will be subjected to induction to understand the environmental management requirement on site. Domestic waste will be removed from to a landfill facility. Waste disposal certificates will be kept on record.	Medium	Low	Partial	High Degree
	Direct	Construction waste	No	Negative	Low	Medium	All construction waste will be placed in a demarcated area and disposed of accordingly. This area will be bermed to prevent the dispersal of said waste by wind and rain. Waste disposal certificates will be kept on record.	Medium	Low	Partial	High Degree
	Direct	Hazardous waste	No	Negative	Low	Medium	All hazardous waste will be stored in a bunded and lockable area. Hazardous waste will be removed from the site by a certified waste contractor. Waste disposal certificates will be kept on record.	Medium	Low	Partial	High Degree
Soil Alteration	Direct	Erosion and topsoil loss	No	Negative	Low	High	Monitor disturbed areas for signs of erosion. Store topsoil stockpiles in the most appropriate method possible in consultation with onsite Environmental personnel.	Medium	Low	Partial	High Degree
	Indirect	Loss of land capability	No	Negative	Medium-High	High	Impact on the land lost capability is expected to be minimal. Monitor disturbed areas for signs of erosion. Store topsoil stockpiles in the most appropriate method possible in consultation with onsite Environmental personnel.	None	Medium-High	Substantial	Medium Degree

	Direct	Clearing of vegetation	Yes	Negative	Medium-High	Medium	The impact on the environment is expected to be medium as the area is in a rural setting	High	Low	Partial	High Degree
	Direct	Soil contamination	No	Negative	Low	Medium	Measures will be implemented to ensure that no hydrocarbons and/or other pollutant liquids are spilt, and if so, they are contained, and a clean-up protocol followed. No hydrocarbons are to be stored with water course or within proximity.	High	Low	Partial	High Degree
Resource Consumption	Direct	Water consumption	No	Negative	Low	High	Monitor water usage. Ensure not leaking infrastructure, such as pipes, taps, etc	Medium	Low	Partial	High Degree
	Indirect	Fuel consumption	No	Negative	Low	High	All construction vehicles will be maintained such as to operate efficiently. Idling times of machinery to be minimised.	Medium	Low	Partial	High Degree
	Indirect	Raw materials consumption	No	Negative	Low	High	Raw materials will be used efficiently. Recycled material should be used where possible	Low	Low	Partial	High Degree
Effects on Biodiversity	Direct	Loss of habitat	Yes	Negative	Medium-High	High	The impact on the loss of habitat will be limited to the servitude of the interchange development. Search & Rescue prior to clearing of area is recommended.	Low	Medium	Substantial	Medium Degree
	Direct	Loss of fauna	No	Negative	Medium	Medium	Conduct walk-through prior to clearing to determine whether any breeding areas are present and to relocate any smaller creatures	Low	Low-Medium	Substantial	Medium Degree
	Direct	Loss of flora	No	Negative	Medium-High	High	Removal of species of importance and concern. Leave in situ all species which will not affect operational requirements.	Low	Medium	Irreplaceable	Irreversible
	Direct	Degradation of ecological systems	Yes	Negative	Medium-High	High	The impact on the loss of habitat will be limited to road interchange site.	Medium	Medium	Substantial	Medium Degree
	Direct	Disruption of natural corridors	Yes	Negative	Medium-High	Medium	The impact on the loss of habitat will be limited to new road and intersection.	Medium	Medium	Substantial	Medium Degree
Incidents, Accidents and Potential Emergency Situations	Direct	Pollution incidents	No	Negative	Low	Medium	Compilation of incident management plan. Conduct toolbox talks. Ensure plant and equipment are in good working order. Store all hazardous materials in an appropriate manner, banded impermeable surface.	Medium	Low	Substantial	Medium Degree
	Direct	Traffic Incidents	No	Negative	Low	Medium	Installation of safety barriers Installation of warning traffic signs	Medium	Low	Partial	High Degree
	Direct	Storage of hydrocarbons	No	Negative	Low	Medium	All hazardous materials will be stored in a banded and lockable area. Material Safety Data Sheet (MSDS) sheets will be available for all hazardous products.	High	Low	Substantial	Medium Degree
	Direct	Fire	No	Negative	Low	Medium	Fire and emergency plans will be implemented during construction. Adequate firefighting equipment will be instituted as recommended.	Medium	Low	Substantial	Medium Degree
Social	Direct	Visual impact	No	Negative	Medium	Medium	Ensure all disturbed areas are rehabilitated accordingly. Vegetation is to be reinstated where possible	Low	Low-Medium	Substantial	Medium Degree
	Indirect	Traffic Safety	No	Negative	Low	Medium	Site security will ensure that the site is secured, and only authorised access allowed. Appointment of people not to take place on site to reduce a potential influx of work seekers. No informal settlers will be allowed to establish on site.	High	Low	Partial	High Degree
Economic	Direct	Decline/increase in economy	Yes	Positive	Low-Medium	Medium	Construction on site will provide employment and skills to the local community. The local economy will benefit in terms of supply of building materials and services.	Very High	Medium	No Loss	Reversible
	Direct	Employment	Yes	Positive	Low-Medium	Medium	Construction on site will provide employment and skills to the local community. Wherever possible labour, materials and services will be sourced locally.	High	Medium	No Loss	Reversible

	IMPACTS				SIGNIFICANCE (MCM)	CONFIDENCE	MANAGEMENT & MITIGATION MEASURES	MITIGATION EFFICIENCY	SIGNIFICANCE (MM)	DEGREE	
	TYPE	DESCRIPTION	CUMULATIVE	NATURE						LOSS RESOURCE	REVERSIBILITY
OPERATIONAL PHASE											
Atmospheric Emissions	Not Applicable	Dust emissions	None	None	None	None	N/A	None	None	No Loss	Reversible
	Direct	Emissions from community vehicles (CO ₂ , NO _x , SO _x , VOCs etc.)	Yes	Negative	Low-Medium	Medium	No mitigation measures	None	Low-Medium	No Loss	Reversible
	Direct	Noise	No	Negative	Low-Medium	Medium	Noise levels will increase with more road users accessing the new road and intersection.	None	Low-Medium	No Loss	Reversible
Discharge to Water	Direct	Siltation of water course	No	Negative	Low-Medium	Medium	Stormwater management must be properly implemented as to minimise silt discharge into surrounding systems during rainstorm events.	Medium	Low	No Loss	Reversible
	Direct	Surface water run-off	No	Negative	Low-Medium	Medium	Stormwater management must be properly implemented as to minimise silt discharge into surrounding systems during rainstorm events.	Medium	Low	No Loss	Reversible
	Not Applicable	Contamination of water from hazardous substances	None	None	None	None	N/A	0	None	No Loss	Reversible
	Not Applicable	Disturbance of natural drainage lines	None	None	None	None	N/A	None	None	No Loss	Reversible
	Not Applicable	Disturbance of aquatic ecological systems	None	None	None	None	N/A	None	None	No Loss	Reversible
Waste Generation	Not Applicable	Domestic waste	None	None	None	None	N/A	None	None	No Loss	Reversible
	Not Applicable	Construction waste	None	None	None	None	N/A	None	None	No Loss	Reversible
	Not Applicable	Hazardous waste	None	None	None	None	N/A	None	None	No Loss	Reversible
Soil Alteration	Not Applicable	Erosion and topsoil loss	None	None	None	None	N/A	None	None	No Loss	Reversible
	Not Applicable	Loss of land capability	None	None	None	None	N/A	None	None	No Loss	Reversible
	Not Applicable	Clearing of vegetation	None	None	None	None	N/A	None	None	No Loss	Reversible
	Indirect	Soil contamination	No	Negative	Low	Medium	Pollution incidents during the operational phase is very minimal to unlikely. On-going road maintenance.	High	Low	Partial	High Degree
Resource Consumption	Not Applicable	Water consumption	None	None	None	None	N/A	None	None	No Loss	Reversible
	Not Applicable	Fuel consumption	None	None	None	None	N/A	None	None	No Loss	Reversible
	Not Applicable	Raw materials consumption	None	None	None	None	N/A	None	None	No Loss	Reversible

Effects on Biodiversity	Not Applicable	Loss of habitat	None	None	None	None	N/A	None	None	No Loss	Reversible
	Not Applicable	Loss of fauna	None	None	None	None	N/A	None	None	No Loss	Reversible
	Not Applicable	Loss of flora	None	None	None	None	N/A	None	None	No Loss	Reversible
	Not Applicable	Degradation of ecological systems	None	None	None	None	N/A	None	None	No Loss	Reversible
	Not Applicable	Disturbance of aquatic ecological systems	None	None	None	None	N/A	None	None	No Loss	Reversible
Incidents, Accidents and Potential Emergency Situations	Not Applicable	Pollution incidents	None	None	None	None	N/A	None	None	No Loss	Reversible
	Direct	Traffic Incidents	No	Negative	Low-Medium	Medium	Ensure road is designed in accordance with SANRAL road standards. Installation of road safety signs. Installation of safety barrier where appropriate.	High	Low	No Loss	Reversible
	Not Applicable	Storage of hydrocarbons	None	None	None	None	N/A	None	None	No Loss	Reversible
	Not Applicable	Fire	None	None	None	None	N/A	None	None	No Loss	Reversible
Social	Not Applicable	Visual impact	None	None	None	None	N/A	None	None	No Loss	Reversible
	Direct	Traffic Safety	No	Positive	Medium-High	Medium	Ensure road and intersection design is designed in accordance with SANRAL road standards. Installation of road safety signs. Installation of safety barrier where appropriate.	High	Low	No Loss	Reversible
	Direct	Traffic Movement	No	Positive	Medium-High	Medium	Road Maintenance	High	Low	No Loss	Reversible
Economic	Direct	Decline/increase in economy	No	Positive	Medium	Medium	Encourage business opportunities	Low	Medium-High	Substantial	Medium Degree
	Not Applicable	Employment	None	None	None	None	N/A	None	None	No Loss	Reversible

Table 14: Alternative 1.

	Alternative 1										
	IMPACTS				SIGNIFICANCE (MMV)	CONFIDENCE	MANAGEMENT & MITIGATION MEASURES	MITIGATION EFFICIENCY	SIGNIFICANCE (MMV)	DEGREE	
	TYPE	DESCRIPTION	CUMULATIVE	NATURE						LOSS RESOURCE	REVERSABILITY
CONSTRUCTION PHASE											
Atmospheric Emissions	Direct	Dust Nuisance	No	Negative	Low	Medium	Dust suppression measures will be implemented during the construction phase to minimise dust generated by construction activities.	High	Low	No Loss	Reversible
	Indirect	Noise Pollution	No	Negative	Low	Medium	All construction vehicles will be maintained such as to operate efficiently. Idling times of machinery to be minimised. Operations shall not occur before or after normal working hours. When required noise mufflers should be utilized to reduced noise. It is important to keep an open channel of communication between all stakeholders and keep record of any concerns raised.	High	Low	No Loss	Reversible
Discharge to Water	Direct	Siltation of water course	Yes	Negative	Low	Medium	Storm water management must be properly implemented as to minimise silt discharge into surrounding systems during rainstorm events.	Medium	Low	Partial	High Degree
	Direct	Surface water run-off	Yes	Negative	Low	Medium	Storm water management must be properly implemented as to minimise silt discharge into surrounding systems during rainstorm events.	Medium	Low	Partial	High Degree
	Direct	Contamination of water from hazardous substances	Yes	Negative	Low	Medium	Measures will be implemented to ensure that no hydrocarbons and/or other pollutant liquids are spilt. A clean-up protocol to be compiled and followed. Appropriate hydrocarbon spill kit must be made available on site. No hydrocarbons are to be stored with water course or within proximity. Vehicles and equipment are to be in good working order.	Medium	Low	Partial	High Degree
	Direct	Disturbance of natural drainage lines	No	Negative	Medium	High	Discharge and divert storm water to sediment trap to allow particulate matter to settle out.	High	Low	Substantial	Medium Degree
	Direct	Disturbance of aquatic ecological systems	Yes	Negative	Low	Medium	Measures to be implemented to ensure that disturbances to aquatic ecological systems are prevented as far as possible.	Medium	Low	Partial	High Degree
Waste Generation	Direct	Domestic waste	No	Negative	Low	Medium	A waste management system to be formulated and implemented on site. All employees will be subjected to induction to understand the environmental management requirement on site. Domestic waste will be removed from to a landfill facility. Waste disposal certificates will be kept on record.	Medium	Low	Partial	High Degree
	Direct	Construction waste	No	Negative	Low	Medium	All construction waste will be placed in a demarcated area and disposed of accordingly. This area will be bermed to prevent the dispersal of said waste by wind and rain. Waste disposal certificates will be kept on record.	Medium	Low-Medium	Partial	High Degree
	Direct	Hazardous waste	No	Negative	Low	Medium	All hazardous waste will be stored in a bunded and lockable area. Hazardous waste will be removed from the site by a certified waste contractor. Waste disposal certificates will be kept on record.	Medium	Low	Partial	High Degree
Soil Alteration	Direct	Erosion and topsoil loss	No	Negative	Low	High	Monitor disturbed areas for signs of erosion. Appropriate storage of topsoil stockpiles, in consultation with onsite Environmental personnel.	Medium	Low	Partial	High Degree
	Indirect	Loss of land capability	No	Negative	Medium-High	High	Impact on the land lose capability is expected to be minimal	None	Medium-High	Substantial	Medium Degree

	Direct	Clearing of vegetation	Yes	Negative	Medium-High	Medium	The impact on the environment is expected to be medium as the area is in a rural setting.	High	Low	Partial	High Degree
	Direct	Soil contamination	No	Negative	Low	Medium	Measures will be implemented to ensure that no hydrocarbons and/or other pollutant liquids are spilt, and if so, they are contained, and a clean-up protocol followed. No hydrocarbons are to be stored with water course or within proximity.	High	Low	Partial	High Degree
Resource Consumption	Direct	Water consumption	No	Negative	Low	High	Monitor water usage. Ensure not leaking infrastructure, such as pipes, taps, etc.	Medium	Low	Partial	High Degree
	Indirect	Fuel consumption	No	Negative	Low	High	All construction vehicles will be maintained such as to operate efficiently. Idling times of machinery to be minimised.	Medium	Low	Partial	High Degree
	Indirect	Raw materials consumption	No	Negative	Low	High	Raw materials will be used efficiently. Recycled material should be used where possible	Low	Low	Partial	High Degree
Effects on Biodiversity	Direct	Loss of habitat	Yes	Negative	Medium-High	High	The impact on the loss of habitat will be limited to the servitude of the road and intersection. Search & Rescue prior to clearing of area is recommended.	Low	Medium	Substantial	Medium Degree
	Direct	Loss of fauna	No	Negative	Medium	Medium	Conduct walk-through prior to clearing to determine whether any breeding areas are present and to relocate any smaller creatures	Low	Low-Medium	Substantial	Medium Degree
	Direct	Loss of flora	No	Negative	Medium-High	High	Removal of species of importance and concern. Leave in situ all species which will not affect operational requirements	Low	Medium	Irreplaceable	Irreversible
	Direct	Degradation of ecological systems	Yes	Negative	Medium-High	High	The impact on the loss of habitat will be limited to new road section and intersection.	Medium	Medium	Substantial	Medium Degree
	Direct	Disruption of natural corridors	Yes	Negative	Medium-High	Medium	The impact on the loss of habitat will be limited to the new road and intersection.	Medium	Medium	Substantial	Medium Degree
Incidents, Accidents and Potential Emergency Situations	Direct	Pollution incidents	No	Negative	Low	Medium	Compilation of incident management plan. Conduct toolbox talks. Ensure plant and equipment are in good working order. Store all hazardous materials in an appropriate manner, banded impermeable surface.	Medium	Low	Substantial	Medium Degree
	Direct	Traffic Incidents	No	Negative	Low	Medium	Installation of safety barriers. Installation of warning traffic signs	Medium	Low	Partial	High Degree
	Direct	Storage of hydrocarbons	No	Negative	Low	Medium	All hazardous materials will be stored in a banded and lockable area. Material Safety Data Sheet (MSDS) sheets will be available for all hazardous products.	High	Low	Substantial	Medium Degree
	Direct	Fire	No	Negative	Low	Medium	Fire and emergency plans will be implemented during construction. Adequate firefighting equipment will be instituted as recommended.	Medium	Low	Substantial	Medium Degree
Social	Direct	Visual impact	No	Negative	Medium	Medium	Ensure all disturbed areas are rehabilitated accordingly. Vegetation is to be reinstated where possible	Low	Medium	Substantial	Medium Degree
	Indirect	Traffic Safety	No	Negative	Low	Medium	Site security will ensure that the site is secured, and only authorised access allowed. Appointment of people not to take place on site in order to reduce a potential influx of work seekers. No informal settlers will be allowed to establish on site.	High	Low	Partial	High Degree
Economic	Direct	Decline/increase in economy	Yes	Positive	Low-Medium	Medium	Construction on site will provide employment and skills to the local community. The local economy will benefit in terms of supply of building materials and services.	Very High	Medium	No Loss	Reversible
	Direct	Employment	Yes	Positive	Low-Medium	Medium	Construction on site will provide employment and skills to the local community. Wherever possible labour, materials and services will be sourced locally.	High	Medium	No Loss	Reversible

	IMPACTS				SIGNIFICANCE (MM)	CONFIDENCE	MANAGEMENT & MITIGATION MEASURES	MITIGATION EFFICIENCY	SIGNIFICANCE (MM)	DEGREE	
	TYPE	DESCRIPTION	CUMULATIVE	NATURE						LOSS RESOURCE	REVERSIBILITY
OPERATIONAL PHASE											
Atmospheric Emissions	Not Applicable	Dust emissions	None	None	None	None	N/A	None	None	No Loss	Reversible
	Direct	Emissions from community vehicles (CO ₂ , NO _x , SO _x , VOC's etc.)	Yes	Negative	Low-Medium	Medium	No mitigation measures	None	Low-Medium	No Loss	Reversible
	Direct	Noise	No	Negative	Low-Medium	Medium	Noise levels will increase with more road users accessing the new road and intersection	None	Low-Medium	No Loss	Reversible
	Direct	Siltation of water course	No	Negative	Low-Medium	Medium	Storm water management must be properly implemented as to minimise silt discharge into surrounding systems during rainstorm events.	Medium	Low	No Loss	Reversible
Discharge to Water	Direct	Surface water run-off	No	Negative	Low-Medium	Medium	Storm water management must be properly implemented as to minimise silt discharge into surrounding systems during rainstorm events.	Medium	Low	No Loss	Reversible
	Not Applicable	Contamination of water from hazardous substances	None	None	None	None	N/A	0	None	No Loss	Reversible
	Not Applicable	Disturbance of natural drainage lines	None	None	None	None	N/A	None	None	No Loss	Reversible
Waste Generation	Not Applicable	Disturbance of aquatic ecological systems	None	None	None	None	N/A	None	None	No Loss	Reversible
	Not Applicable	Domestic waste	None	None	None	None	N/A	None	None	No Loss	Reversible
	Not Applicable	Construction waste	None	None	None	None	N/A	None	None	No Loss	Reversible
Soil Alteration	Not Applicable	Hazardous waste	None	None	None	None	N/A	None	None	No Loss	Reversible
	Not Applicable	Erosion and topsoil loss	None	None	None	None	N/A	None	None	No Loss	Reversible
	Not Applicable	Loss of land capability	None	None	None	None	N/A	None	None	No Loss	Reversible
	Not Applicable	Clearing of vegetation	None	None	None	None	N/A	None	None	No Loss	Reversible
Resource Consumption	Indirect	Soil contamination	No	Negative	Low	Medium	Pollution incidences during the operational phase is very minimal to unlikely.	High	Low	Partial	High Degree
	Not Applicable	Water consumption	None	None	None	None	N/A	None	None	No Loss	Reversible
	Not Applicable	Fuel consumption	None	None	None	None	N/A	None	None	No Loss	Reversible
Effects on Biodiversity	Not Applicable	Raw materials consumption	None	None	None	None	N/A	None	None	No Loss	Reversible
	Not Applicable	Loss of habitat	None	None	None	None	N/A	None	None	No Loss	Reversible

	Not Applicable	Loss of fauna	None	None	None	None	N/A	None	None	No Loss	Reversible
	Not Applicable	Loss of flora	None	None	None	None	N/A	None	None	No Loss	Reversible
	Not Applicable	Degradation of ecological systems	None	None	None	None	N/A	None	None	No Loss	Reversible
	Not Applicable	Disturbance of aquatic ecological systems	None	None	None	None	N/A	None	None	No Loss	Reversible
Incidents, Accidents and Potential Emergency Situations	Not Applicable	Pollution incidents	None	None	None	None	N/A	None	None	No Loss	Reversible
	Direct	Traffic Incidents	No	Negative	Medium	Medium	Ensure road and intersection design is designed in accordance with SANRAL road standards. Installation of road safety signs. Installation of safety barrier where appropriate.	Low	Low-Medium	No Loss	Reversible
	Not Applicable	Storage of hydrocarbons	None	None	None	None	N/A	None	None	No Loss	Reversible
	Not Applicable	Fire	None	None	None	None	N/A	None	None	No Loss	Reversible
Social	Not Applicable	Visual impact	None	None	None	None	N/A	None	None	No Loss	Reversible
	Direct	Traffic Safety	No	Positive	Medium-High	Medium	Ensure road and intersection design is designed in accordance with SANRAL road standards. Installation of road safety signs. Installation of safety barrier where appropriate	None	None	No Loss	Reversible
	Direct	Traffic Movement	No	Positive	Medium-High	Medium	Road Maintenance.	High	Medium-High	No Loss	Reversible
Economic	Direct	Decline/increase in economy	No	Positive	Medium	Medium	Encourage business opportunities.	Low	Medium-High	Substantial	Medium Degree
	Not Applicable	Employment	None	None	None	None	N/A	None	None	No Loss	Reversible

8.5 Cumulative Impacts

The new road deviation achieves certain objectives as an individual project, but it is also forms part of a larger road upgrade project without which the cannot be realised i.e. environmental protection integrated with sustainable socio-economic development. The new road deviation and intersection project has strong links to the current upgrade project in the immediate region, the Timbavati Road Upgrade Project which is currently undertaking a 24G process. The project also has important links to unlocking the development potential of the region in terms of tourism development and socio-economic growth.

All are, however, dependent on improved and accessible access. If the project is approved, potential negative environmental impacts may occur. By improving accessibility for all road users in the region and completing the transport link between the neighbouring settlements and existing tarred roads, as a whole, could actually create the opposite scenario of the intended outcome in the short (immediate) term. Positive social and economic impacts may be (immediately) experienced as the businesses will be able to exploit the increased access to additional customers. Medium to longer term projections, however, suggest the upgrade would ultimately result in positive impacts as the socio-economic dynamics change and adapt to the situation.

The social, economic and tourism development potential of the region, which has been recognised, will also never be realised.

9 ENVIRONMENTAL MANAGEMENT PROGRAMME

The Environmental Management Programme (EMPr) will provide recommendations for the implementation of avoidance strategies (where possible) and mitigation and management measures (if required) to ensure that the project retains an acceptable environmental impact and considers all highly sensitive features located within the project site.

As the applicant has the responsibility to avoid or minimise impacts and plan for their management (in terms of the EIA Regulations), the mitigation of significant impacts is required to be recommended. Assessment of impacts with mitigation are made to demonstrate the effectiveness of the proposed mitigation measures.

Refer to Appendix F for the complete standalone Environmental Management Programme (EMPr).

10 FINDINGS, IMPACT MANAGEMENT AND MITIGATION MEASURES

10.1 Summary of the findings and impact management measures identified by all Specialist.

Ecological

The proposed deviation of the road D4416 falls within an area with minimal disturbance to the vegetation. The vegetation unit remains intact, and the primary grassland is dominated by Marula trees and Sickle Bush. The study site falls under an Ecological Support Area.

Through anthropogenic activities, i.e., the construction of the gravel road between Welperdiend, Timbavati and Hluvuhukani the area along the road has introduced the nearby vegetation with alien vegetation, however as one moved from the gravel road, currently undergoing a s24G rectification application, the vegetation regains intactness, and the dominant primary vegetation group can be observed. A few areas showed signs of illegal dumping. Cows and animals were grazing along the disturbed areas and animal tracks within the vegetation was observed.

Freshwater

Only one channelled valley bottom wetland (HGM 1) was identified.

The hydrology component is largely natural. The delineated wetland has been allocated a “Largely natural” score for the geomorphology component. The vegetation component has been “Largely natural” because of the primary vegetation.

The project area has undergone modification attributed to catchment related activities, resulting in a modified biological status. Although modified, the watercourse maintains basic ecosystem functions supporting a diversity of aquatic biota requiring protection. The proposed deviation will go over a HGM unit which could be classified as largely natural.

10.2 List of impact management measures that were identified by all Specialists.

Botanical:

- As far as possible, the proposed development should be restricted to areas that have already been disturbed, and limited further loss of secondary vegetation, wetland areas, drainage lines should be permitted, and if not, the minimal area for disturbance be provided and culverts used which allow species migration and movement.
- It is recommended that areas to be developed be specifically demarcated so that during the construction phase, only the demarcated areas be impacted upon and preventing movement of workers into sensitive surrounding environments.
- Where possible, existing access routes and walking paths must be made use of, and new routes limited.
- All laydown, storage areas etc should be restricted to within the project area, not beyond the wetland area.
- No construction rubble should be dropped into the wetland.
- All building materials should be mixed off site and no mixing should take place in the wetland. and
- Areas that are denuded during construction need to be re-vegetated with indigenous vegetation to prevent erosion during flood events. This will also reduce the likelihood of encroachment by alien invasive plant species.

Fauna

- Fauna species such as frogs and reptiles that have not moved away should be carefully and safely removed to a suitable location beyond the extent of the development footprint by a suitably qualified ECO trained in the handling and relocation of animals.
- No trapping, killing, or poisoning of any wildlife is to be allowed on site, including snakes, birds, lizards, frogs, insects, or mammals.
- No construction rubble should be dropped into the wetland.
- All building materials should be mixed off site and no mixing should take place in the wetland.
- Have action plans onsite, and training for contactors and employees in the event of spills, leaks, and other impacts to the surrounding environment.
- It is worth noting that by applying relevant mitigation measures to the system to ensure that the functionality of the watercourse not be lost will directly ensure that the surrounding system's functionality be retained and that impacts to the water resources be limited.
- Recommended mitigation measures for the project include the following:

- The footprint area associated with the laydown and upgrade area must be minimised, avoiding the wetland areas where possible. Areas earmarked for development must be marked to ensure a controlled disturbance footprint area to minimise negative impacts.
- Erosion prevention and sediment control measures (wetland and instream) are imperative and need to be implemented throughout the entire project footprint area, access roads and temporary laydown / storage sites. Temporary and permanent erosion control methods may include silt fences, interceptor ditches, seeding and sodding, riprap of exposed embankments, erosion mats, and mulching.
- The contractors used for the construction should have spill kits available prior to construction to ensure that any fuel, oil, or hazardous substance spills are cleaned-up and discarded correctly.
- It is also deemed important that all the entire delineated wetland area be demarcated as sensitive areas, and no construction activity, laydown yards, camps or dumping of construction material are to be permitted within the sensitive zones.
- It is preferable that construction takes place during the dry season (as much as possible) to reduce the erosion potential of the exposed surfaces.
- During construction activities, all rubble generated must be removed from the site and not dumped in the instream, within the wetland habitat.
- No “*non-essential*” vehicles or activities, dumping or clearing is permitted within the buffer zone. All activities should be outside of this area unless they have been authorised.
- Contamination of the wetland system with unset cement or cement powder should be negated as it is detrimental to aquatic biota. It is preferable that on-site mixing is avoided and that only prefabricated materials are used.
- An aquatic monitoring survey needs to be conducted during construction activities so that impacts can be assessed, and adaptive management practices implemented if necessary. Aspects should include those assessed during this report.
- An alien invasive plant management plan needs to be compiled and implemented post construction to control current invaded areas and prevent the growth of invasive species on cleared areas.

Wetlands / Aquatics:

The following mitigation and management measures should be implemented during the construction phase to minimise potential environmental impacts:

- To preserve these footprints, need to be demarcated and then adhered to.
- Construction activities should be limited to between 07:00 and 17:00 or in conjunction with the ECO.
- A complaints register should be available onsite whereby the public or community in close connection of the proposed development can issue their concerns, if need be.
- Adopt responsible construction practices aimed at containing the construction activities to specifically demarcated areas.
- Any soil must be exposed for the minimum time possible once cleared of vegetation to avoid prolonged exposure to wind and water erosion and to minimise dust generation.
- Use existing ablutions or provide to a max of 10 per ablution.
- Induction awareness training should be undertaken.
- Onsite waste management and removal, waste not to sit longer than 7 days. Bins to have lids.
- Separation of waste should be encouraged.
- Erosion control measures should be in place.
- Any buffers identified should be maintained by the contractor.

The following mitigation and management measures should be implemented during the operation phase to minimise potential environmental impacts:

- Waste should be managed as not to be aesthetically appealing or attract pests or rodents.
- Control of alien invasive plants is encouraged.
- Rehabilitation and landscaping with indigenous vegetation within the development should be encouraged and made a condition within the Environmental Authorisation.
- Mitigation Measure Objectives for biodiversity

10.3 How the proposed project will impact the surrounding communities.

The rural settlements of Timbavati, Welverdiend and Hluvukani are situated in the Bushbuckridge Local Municipality of the Ehlanzeni District Municipality. According to the BLM IDP the poverty rate sits are 63.5% in 2017 which is an increase from the 56.8% in 2015. In Bushbuckridge Local municipality's households' income is relatively low in the province as its ranked number 13 as per department of finance 2011 report.

Currently the settlements are accessible via gravel roads and there is call for the improvement of the road network which largely revolves around the better integration of the surrounding settlements with the identified Municipal Development Nodes and to provide for better access to safe and ease of passage.

The upgrading of the roads, including the new road deviation, will provide for better accessibility to and from the Timbavati, Welperdiend and Hluvukani thus creating a safer transportation environment.

The upgrading of the road provides for a connection between existing asphalt roads, this provides for a safer access route for commutes travelling both North/South and South/North, this increase in accessibility provides for increased traffic movements which could provide income for various local businesses such as café's, fuel stations, etc.

10.4 How the findings and recommendations of the different specialist studies have been integrated.

As indicated in the impact assessment, all the specialist studies as well as other elements were rated before mitigation and after in terms of their significance. This resulted in the proposal of which mitigation measures should be implemented. Please refer to the EMPr with more information of mitigation that the applicant will implement during the different phases of the project development.

11 ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account this statement sums up the impact that the preferred alternative and any alternatives may have on the environment after the management and mitigation of impacts have been considered.

11.1 Proposed (Preferred Alternative)

When considering the potential impacts involved with the proposed new road deviation and intersection, the preferred alternative has a low to medium significance; however, these impacts can be mitigated to an acceptable level.

The study site still has a functional role to play in regional ecological functioning and biological functions at the site even though it has been influenced by human-related impacts. The area for the proposed deviation has not been impacted by any anthropogenic activity yet and can be classified as near pristine bushveld. The study site occurs within the Granite Lowveld.

The study site falls under an Ecological Support Area

One HGM was identified as a channelled valley bottom wetland.

Ecological connectivity between the wetland and grasslands cannot be excluded and culverts should be utilised that allow movement of reptilian and mammalian species.

However, the site does have a small yet functional role to play in the regional ecosystem functioning. Overall, the significance before mitigation is low to medium and after applying mitigation measures the study site can be considered low significance in terms of ecological aspects.

The wetland areas were delineated in accordance with the DWAF (2005) guidelines. During the field survey, a few seasonal drainage lines were identified, however only one channelled valley bottom wetland (HGM 1) was identified.

This wetland scored a moderate Present Ecological State of B and is classified as largely natural.

From a heritage perspective, no building structures were identified on site.

It was highlighted that no heritage importance.

Furthermore, should any archaeological sites or any graves be exposed during the construction work, they should be reported to a heritage practitioner so that it can be investigated and evaluated.

From a social perspective, the proposed development will result in a temporary positive during the construction phase with the

The proposed layout will have the least impacts on the traffic flow during construction due to it being a new road section, users will still have access to existing gravel road. In terms of incidents, accidents, and emergencies during the construction phase after the application of mitigation measures the significance is low-medium. Socially the significance with mitigation is low-medium to medium positive, while the proposed intersection and new road will have a Low-Medium negative impact on the environment.

Furthermore, it will result in the general positive increase of the economy especially the immediate areas by providing a safer and more efficient way of gaining access between local villages. Local skills development and local labour will be encouraged and will contribute to positive impacts. The significance before applying mitigation in terms of social is Low-Medium and after applying mitigation measures, it will increase positively to Medium.

The preferred layout alternative is chosen as it takes the wetland features into consideration. Although the preferred layout will go through a new HGM this is done to accommodate the uncompromising SANRAL safety standards. The new road deviation will affect a wetland, however if engineers design culverts are wide and big enough for species movement it will assist in reducing the impacting on the ecological connectivity.

11.2 Alternative 1

Alternative 1 will have a slightly reduced impacted on environmental aspects however the does not consider the safety requirements of the intersection hence keeping the negative socio-impact at rating of Medium-High.

Socially impacts on road users by not locating the intersection in the correct location will increase the risk of accidents and traffic safety will not be achieved. The intersecting roads may result in high accidental rates.

Based on the information provided and assessed during the EIA and the utilisation of specialist investigations the alternative is not preferred. It may not exhibit environmental fatal flaws, however the socio-impacts on the surrounding communities and travellers will be greater when compared with the preferred alternative.

11.3 No-Go Alternative

Should the proposed new road and intersection not proceed, possible job creation and increase in the economic may not occur. Possible traffic disruptions during the construction phase will not be encountered. The immediate environment especially the wetlands onsite will not be impacted upon by the new road section. Social impacts on the local communities in the area will remain unchanged. The hardening of surface and removal of topsoil may result in an increase in runoff from the site and should the development not proceed this will not be the case. Traffic safety will not be encouraged, and the

economic viability will remain unchanged and not result an economic growth of the local community and transport efficiency will not improve and costs for transport infrastructure will increase as the road space is not managed better. Furthermore, the level of service of road is not bettered as road users will not have reduced travel time and road user costs. Finally, the social and environmental enhancement i.e. the accessibility between the regions will thus not be bettered or improved, therefore access from residential developments to areas of work will not be benefitted.

12 SUMMARY OF THE KEY FINDINGS OF THE EIA

With reference to biodiversity aspects, the impact is considered medium (post mitigation) due to the need to remove undisturbed, natural vegetation.

No species of significance for both flora and fauna were identified on site there is a possible occurrence within the immediate area surrounding the proposed road development for the occurrence of mammal and bird species, based on habitat requirements, however, these can be mitigated against by following the Environmental Management Programme (EMPr) contained in Appendix F.

From a wetland assessment perspective, a natural wetland system was identified within the study area. One channelled valley bottom wetland was observed which the newly developed road would traverse. roads through a single road culvert. The construction activities will affect the wetland system in the form of an access road, but these can be mitigated to satisfactory standards if all mitigatory actions are implemented with due care. Appropriate culverts must be employed to ensure small faunal movement and water flow when present.

The preferred alternative takes socially related activities into consideration. The proposal will also have the least overall impact on the traffic flow during construction and encourages traffic safety for road users.

Local skills development and local labour will be encouraged and will contribute to positive impacts, especially the poor communities around the current port of entry.

Although the proposed alternative has a slightly higher impact from an ecological stance it is the socio-impact which makes this alternative the preferred option with the least impacts on the traffic flow during construction due to it being a new road section, users will still have access to existing gravel road, and in terms of incidents, accidents, and emergencies during both the construction and especially the operational phase after the application of mitigation measures the significance is low-medium. Socially the significance with mitigation is low-medium to medium positive, while the proposed intersection and new road will have a Low-Medium negative impact on the environment.

13 RECOMMENDATION OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

After assessing the environmental related impact in terms of bio-physical and social the proposal was selected as it has the least impact on the environment and social aspects. Ecologically red data species were recorded, however if the EMPr contained in Appendix F and specialist study recommendations contained under Appendix E are followed, these impacts will drastically be reduced. In terms of wetlands, minimal impacts can be expected on the wetlands onsite as the intersection will not significantly impact the wetlands. The simple diamond modified with a partial cloverleaf interchange was designed to take modelled traffic volumes, safety for commuters, road reserve, horizontal and vertical alignment of existing roads, sight distances, pavement designs, availability of pavement materials, existing stormwater drainage structures and existing services in consideration. Therefore, drainage and flow from corridors was considered in the design of the proposal layout. It should also be mentioned that these wetlands have been degraded and impacted upon by human related activities. The rehabilitation of the wetlands is vital to recover the required ecological function. The wetland drivers must be enhanced as part of the rehabilitation of the affected areas.

The heritage study revealed that there were no signs of any heritage within the area. Although, if any items of heritage or cultural significance are identified, construction activities will immediately cease and the SAHRA will be notified of the findings. Mitigation measures mentioned in the EMPr contained in Appendix F, have been developed to assist the contractor during the construction, and post-construction phases of the project to minimize any impacts on the environment.

The proposal layout was selected as it conforms to the SANRAL design requirements for road and intersections. Although it will have the slightly higher impact on the environment, especially the wetlands, flora, and faun, the positive social impact far out ways the negatives especially if mitigation measures are implemented accordingly.

The preferred intersection location will minimize the risk of safety to the road users (accidents, etc.).

The alternative intersection layout was rejected by SANRAL due to the intersection being located on a blind corner raising safety concerns. Impacts on the environment will be slightly less but are outwayed by the safety aspect. The EAP believes the preferred layout will not drastically affect the environment if the various mitigation measures are implemented. After conducting the EIA process and consultation with specialist studies (Wetlands, Ecological, Heritage and Engineering), no environmental fatal flaws were anticipated and can be mitigated against by following the conditions of the EMPr (Appendix F) and specialist studies (Appendix E).

The proposal is therefore the best suited to minimize or have the least impact on the built, natural, and social environments as being the most cost-effective solution.

The following are recommended conditions for the new road deviation and intersection:

- 1) Adhere to the proposed management and mitigation measures during the construction and operation phases as set out in the EMPr (Appendix F).
- 2) The EMPr must be implemented and monitored by an independent Environmental Control Officer (ECO) and all monitoring reports must be submitted to the relevant authority for review.
- 3) Conditions as set out by all specialist studies contained in Appendix E should form part of the General conditions of the EA.

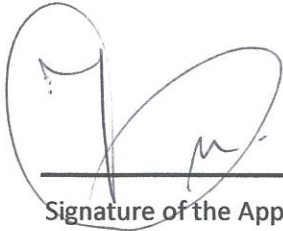
14 DECLARATION

14.1 Declaration of the Applicant

I.....**Mr Ngonidzashe Chimusoro**....., ID number ...**6306245389189**.....in my personal capacity or duly authorised thereto hereby declare/affirm that all the information submitted or to be submitted as part of this application form is true and correct, and that:

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

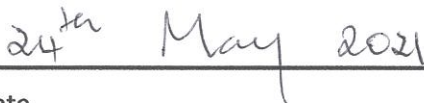
- I am responsible for complying with conditions that may be attached to any decision(s) issued by the Competent Authority, hereby indemnify, the government of the Republic, the Competent Authority and all its officers, agents, and employees, from any liability arising out of the content of any report, any procedure, or any action for which I or the EAP is responsible in terms of the NEMA EIA Regulations and any Specific Environmental Management Act.

A handwritten signature in black ink, appearing to be 'M. M.', is written over a horizontal line.

Signature of the Applicant

Mpumalanga Provincial Government: Department of Public Works, Roads and Transport

Name of Organisation

The date '24th May 2021' is handwritten in black ink over a horizontal line.

Date

14.2 Declaration of the EAP

I**Nicholas Anthony Gates**....., EAPASA Registration number**NA**..... as the appointed EAP hereby declare/affirm the correctness of the:

- Information provided in this BAR and any other documents/reports submitted in support of this BAR;
- The inclusion of comments and inputs from stakeholders and I&APs.
- The inclusion of inputs and recommendations from the specialist reports where relevant; and
- Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties, and that:
- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal, or other interest in the activity or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another EAP that meets the general requirements set out in Regulation 13 of NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review EAP must be submitted);
- In terms of the remainder of the general requirements for an EAP, am fully aware of and meet all of the requirements and that failure to comply with any the requirements may result in disqualification.
- I have disclosed, to the Applicant, the specialist (if any), the Competent Authority and registered interested and affected parties, all material information that have or may have the potential to influence the decision of the Competent Authority or the objectivity of any report, plan or document prepared or to be prepared as part of this application.
- I have ensured that information containing all relevant facts in respect of the application was distributed or was made available to registered interested and affected parties and that participation will be facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments.
- I have ensured that the comments of all interested and affected parties were considered, recorded, responded to and submitted to the Competent Authority in respect of this application.
- I have ensured the inclusion of inputs and recommendations from the specialist reports in respect of the application, where relevant.

- I have kept a register of all interested and affected parties that participated in the public participation process; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations.

A handwritten signature in blue ink, appearing to be 'A. M.', located to the left of the signature line.

Signature of the Applicant

NCC Environmental Services (Pty) Ltd

Name of Organisation

May 2021

Date

14.3 Declaration of the Review EAP

I **Ronaldo Retief**....., EAPASA Registration number **2019/181**.....as the appointed Review EAP hereby declare/affirm that:

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



Signature of the EAP

Date: 27 July 2021

Name of company (if applicable): **NCC Environmental Services (Pty) Ltd**

APPENDIX A –MAPS

APPENDIX B – SITE PLANS

APPENDIX C – PHOTOGRAPHS

APPENDIX D – BIODIVERSITY OVERLAY MAP

APPENDIX E – SPECIALIST REPORTS



APPENDIX F – ENVIRONMENTAL MANAGEMENT PROGRAMME

APPENDIX G – PUBLIC PARTICIPATION INFORMATION

Appendix G1 – Background Information Document

Appendix G2 – Advertisement

Appendix G3 – Site Notices

Appendix G4 – Written Letter

Appendix G5 – Stakeholder List

APPENDIX H – ENVIRONMENTAL SCREENING TOOL

APPENDIX I – PROPERTY DETAILS