



UPGRADE OF THE NATIONAL ROUTE N2 SECTION 34 (PIET RETIEF TO ERMELO): LINK AND GRADE-SEPARATION SCHEME FOR ROAD P97/2 AND ROAD D803 FOR KANGRA MINE COAL HAULAGE AT PANBULT, MPUMALANGA PROPOSED ROAD EXPANSION, PANBULT

FINAL SCOPING REPORT & PLAN OF STUDY FOR EIA

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EXECUTIVE SUMMARY

I. Introduction

SANRAL appointed LYMA Consulting Engineers (LYMA) to undertake the Environmental Impact Assessment (EIA) process for the proposed upgrading of the National Route 2 (N2) Section 34 between Piet Retief and Ermelo, Panbult, Mpumalanga. The purpose of the upgrading is to improve the road safety on the N2-34 at Panbult, Mpumalanga. SANRAL has identified the continuous movement of mine-related heavy vehicles transporting coal to Panbult Siding across the N2 as a safety issue which should be addressed through an upgrade of the Panbult Intersection.

The Kangra Coal (Pty) Ltd Mine is situated in Mpumalanga Province to the south-east of Ermelo and to the west of Piet Retief (see 1 – Locality map). Coal produced by the mine is transported by road from Maquasa East Plant to the Panbult Siding, a distance of approximately 32km. Most of this distance is on unpaved road and interlink vehicles/trucks with an average capacity of 30 tons each are used to transport coal. At Panbult Siding the coal is off-loaded from the trucks to a stockpile. The stockpiled coal is mechanically loaded onto railway trucks and then transported by rail to Richards Bay.

The staggered T-junction is created by the P97/2 and road D803 entering the N2 from the west and east of the N2-34. From the westerly N2-34/P97 junction traffic is priority-controlled with a stop control on the minor road. The eastern-lying N2-34/D803 junction is priority controlled with a three-way stop control. As the economic activity in the Panbult area is depended on heavy vehicles for transporting goods (especially coal and wood products) the road with its staggered T-junctions carries extremely high volumes of heavy vehicles. Implementation of adequate traffic control measures to accommodate safe alternative routes for vehicles is therefore a main focus of the upgrade project.

II. PROJECT DESCRIPTION

The proposed road will be 1.6km in length and the relocation of the road will move the existing road 50m northwards and encroach the school property. According to a general survey and wetland assessment that was done, there is a wetland within the study footprint.

The proposed upgrading of the National Route 2 (N2) Section 34 between Piet Retief and Ermelo, Panbult, Mpumalanga will traverse the following properties:

- Portion 7 of Farm Valschvlei 352;
- Remaining extent of Farm Valschvlei 352;
- Portion 16 of Farm Valschvlei 352;
- Portion 1 of Farm Valschvlei 352;
- Portion 2 of Farm Basel 313;
- Remaining extent of Farm Basel 313;
- Remaining extent of Portion 5 of the farm Valschvlei 352
- Remaining extent of Farm Basel 313;

In terms of the NEMA EIA Regulations (2014), published in Government Notice R. 982 in Government Gazette No. 38282 of 4 December 2014, under Section 24(5) of the National Environmental Management Act, 1998 (Act No.107 of 1998), a Scoping & Environmental Impact Assessment are required for the development due to the following listed activities:

Table I: Relevant Listed Activities

Indicate the number of the relevant Government Notice:	Activity No (s) (relevant notice): e.g. Listing notices 1, 2 or 3	Describe each listed activity as per the wording in the listing notices:
Government Notice R.983 (2014) Regulations Listing Notice 1 (12)	<i>The development of- (ii)bridges exceeding 100sqm in size</i>	<ul style="list-style-type: none"> • Construction of a 3-span continuous bridge with a post tensioned double cell box girder deck. The total deck length is 65.1m, with a span configuration of 15m–34.2m– 15m. The deck is supported on V-shaped piers monolithically connected to the deck. The piers are founded on a single row of piles. The abutments are spill through abutments founded on 2 rows of piles just below normal ground level.

<p>Government Notice R 983: Listing Notice 1 (19).</p>	<p><i>The infilling or depositing of any material of more than 5 cubic metres into, or the dredging,</i></p> <p><i>excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from-</i></p> <p><i>(i) a watercourse</i></p>	<ul style="list-style-type: none"> • The project will result in excavation and backfilling of wetland within the footprint.
<p>Government Notice R.983 (2014 Regulations) listing Notice 1 (56)</p>	<p><i>The widening of a road by more than 6 metres, or lengthening of a road by more than 1 kilometres-</i></p> <p><i>(i) Where the existing reserve is wider than 13.5 metres or</i></p> <p><i>(ii) Where no reserve exists, where the existing road is wider than 8 metres.</i></p>	<ul style="list-style-type: none"> • The widening of the interchange which will exceed 6m. • Construction of a road with overall width of 15.46m, accommodating 2x3.7m lanes, 1x2.5m shoulder and 1x2.0m sidewalk.
<p>Government Notice R.984 (2014 Regulations) listing Notice 2 (27)</p>	<p><i>The development of</i></p> <p><i>(i) a national road as defined in section 40 of the South African National Roads Agency Limited and National Roads Act, 1998 (Act No. 7 of 1998);</i></p> <p><i>(ii) a road administered by a provincial authority</i></p>	<ul style="list-style-type: none"> • The construction of a new link road with road fill earthworks embankments on either side of the new bridge and the N2 as well as elevated ramp embankments to facilitate the east-west movement of abnormal and super heavy loads frequenting this N2 route. • Construction of a 3-span continuous bridge with a post tensioned double cell box girder

	<p><i>(iii) a road with a reserve wider than 30m</i></p> <p><i>(iv) a road catering for more than one lane of traffic in both directions</i></p>	<p>deck. The total deck length is 65.1m, with a span configuration of 15m–34.2m– 15m. The deck is supported on V-shaped piers monolithically connected to the deck. The piers are founded on a single row of piles. The abutments are spill through abutments founded on 2 rows of piles just below normal ground level.</p> <ul style="list-style-type: none"> • The widening of the interchange which will exceed 6m.
<p>Government Notice R 985: Listing Notice 3 (12)</p>	<p><i>The clearance of an area of 300 sqm or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.(a)</i></p> <p><i>(ii) within critical biodiversity areas identified in bioregional plans</i></p> <p><i>(iv) on land where at the time of coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning.</i></p>	<p>Before construction, the road, the servitude area needs to be cleared of vegetation.</p> <p>Vegetation comprises short closed grassland with many forbs. Also a few scattered shrubs near rocky outcrops. Most of the District vegetation consists of a great expanse of ancient grassland which is thought to date back well before the break-up of Earth's original land mass (Gondwanaland) into continents and oceans.</p>

<p>Government Notice R 985: Listing Notice 1 (4).</p>	<p><i>The development of- a road with a reserve wider than 4m, with a reserve of less than 13.5 metres</i></p>	<p>The relocation of the road which will move the road 50m northwards and encroach the nearby school property. The stretch of road to be relocated is 1.6km long.</p>
<p>Government Notice R 983: Listing Notice 1 (19).</p>	<p><i>The development of facilities or infrastructure for the transmission and distribution of electricity- Outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts</i></p>	<p>The relocation of Eskom power line infrastructure</p>
<p>Government Notice R 985: Listing Notice 3 (19).</p>	<p><i>The development of masts or towers of any material or type used for telecommunication broadcasting or radio transmission purposes where the mast or tower- -is to be placed on a site not previously used for the purpose</i></p>	<p>The relocation of Telkom infrastructure and DFA services.</p>

The project is located in the jurisdiction of the following authorities:

Table II: Provincial Authority

Provincial authority	Department of Economic Development, Environment & Tourism, Ermelo Mpumalanga Province
Contact person	Mr. Surgeon Marebane/Pam Ntuli
Postal address:	Gert Sibande Regional Office, No.13 de Jager Street, Ermelo
Telephone:	017 811 4830/ 013 759 4099
E-mail:	smarebane@mpg.gov.za pnntuli@mpg.gov.za

Table III: Relevant Local Authority

Local municipality	Mkhondo Local Municipality
Contact person	Mr Vusi Dube, General Manager Community Services
Postal address	PO Box 23, PIET RETIEF, 2380
Telephone	(017) 826 8100/3
E-mail	info@mkhondo.org.za

III. Need for the project

The need for the Panbult Interchange upgrade is based on; i) need for improved road safety conditions, and ii) a need for improved environmental-associated health conditions. Due to the large volume of small and heavy vehicular traffic passing through the interchange at high speed, there is a high likelihood of accidently occurring. Heavy vehicles making use of the staggered intersection slow down the traffic flow in the intersection and with the slight curving of the road towards Ermelo and Piet Retief, the sight distance in the intersection is significantly reduced. In addition, a stop signal is supposed to calm traffic so that learners of the local school and other pedestrian users of the intersection could cross the road, but the stop sign is often ignored by drivers.

The constant movement of heavy vehicles through the intersection increases the levels of dust, particularly coal dust in the intersection, which are considered by some of the individuals working near the intersection as a health hazard. In addition, saw dust from the two local sawmills can be considered a safety hazard should the sawdust catch fire, endangering not only the individuals and properties in the intersection, but also the plantations flanking the intersection. The heavy vehicles and the trains entering the crossing also pose a source of noise pollution, making it difficult for learners of the local St Andrews Primary School to hear the lessons in the classes.

This corridor forms part of the National Infrastructure Plan's SIP 1: Unlocking the northern mineral belt within Waterberg as the catalyst. The interchange is therefore of both national and international importance regarding the economic development and the national and international distribution of goods in South Africa. According to the Mpumalanga Provincial Growth & Development Strategy, the Panbult Interchange upgrade project can potentially promote the economic growth and development in the greater region through concomitant increased regional accessibility and local creation of employment through construction activities and the increased accessibility.

Upgrading the interchange will significantly increase vehicular safety through the following design features, *inter alia*:

- The Panbult link road will be designed for a maximum design speed of 50km/h, catering for the turning movement of heavy vehicles,
- A bridge crossing the N2-34 will be built,
- The on and off ramps will be designed to accommodate abnormal vehicles,
- The road will be widened to accommodate a new raised island, thereby eliminating the right turning movements,
- The intersection at D803/N2-34 will be closed, and
- By providing safe access for properties along the N2-34.

IV. Identification of Potential Impacts and specialist studies

Potential risks and key issues identified during the Scoping Phase of the project were based on consultation with the developer Sanral, Interested and Affected Parties (IAP's), experience with similar developments, desktop studies and current state of the environment of site.

Specialist investigations that have been undertaken (and those currently in progress) include:

- Socio-Economic Impact Assessment (Appendix 12)
- Noise Impact (Appendix 11);
- Traffic Impact Assessment ;
- Wetland Assessment (Appendix 10); and
- Heritage Impact Assessment (Appendix 13).

Although the some of the preliminary findings of the Specialist studies that are being conducted have been used to inform this scoping report, the complete specialist findings will be assessed and discussed in more detail in the Environmental Impact Assessment Report (EIR) that will be provided during the EIA phase.

V. Public Participation Process

Interested and Affected Parties, including surrounding and affected landowners, local Councillors & Chieftainship, Provincial and Local Governments Departments were involved during the Public Participation Process (PPP).

The Draft Scoping Report was made available to the stakeholders, the public and all registered IAPs for a review period of 30 days. Dates and venues of the availability of the report were communicated to registered IAPs. Public participation meetings were also held with relevant stakeholder as detailed in this scoping report. In addition, following the lapse in submission of the Scoping Report as per the legislative timeframes in terms of Regulation 21(1) of the EIA Regulations (2014), the scoping report was re-circulated to all registered IAPs with a covering letter giving background on the purpose for resubmission. The IAPs were given 30 days to comment on the Scoping Report. No further comments were received from the IAPs during the second round of comment period.

The main issues identified from the scoping of potential environmental and socio-economic risks and impacts for the proposed project are as follows:

- The proposed new layout will affect the existing St Andrews Primary School, an informal dwelling house and graves in the property.
- The school will have to be relocated and negotiations are currently underway for the relocation of the school.
- There is an existing cemetery within the project area. The issue of cemeteries is being addressed as part of the heritage impact study to be conducted by a specialist.
- A section of the new layout footprint is on an existing wetland.
- New access roads will be developed as part of the upgrade to ensure right of way for farmers in the area.
- The main landowner affected by the proposed interchange is Mr Hans Gerken, who own land main utilised for commercial forestry.
- There will be fewer properties affected as opposed to the previous layout that had received objections from the landowners.
- The Project Engineering team has consulted the affected landowners who in principle were in agreement with the new proposal.
- A pedestrian crossing, with retaining walls would be built to ensure safety of the pedestrians.

VI. Alternatives / Deviations considered

Option A- Preferred Alternative - From a traffic and geometric perspective Option A is the preferred scheme because it provides a free-flow movement for trucks on a separate link. Option A is less complex than Option B.



Figure 1 – Option 1 preferred

Option B – Alternative - This option was explored as the preferred option in the previous EIA process. Many objections were received against this option from affected landowners. This is in view of the fact that the route was take up land from the businesses in one form or the other and affected more businesses than in Option A above.

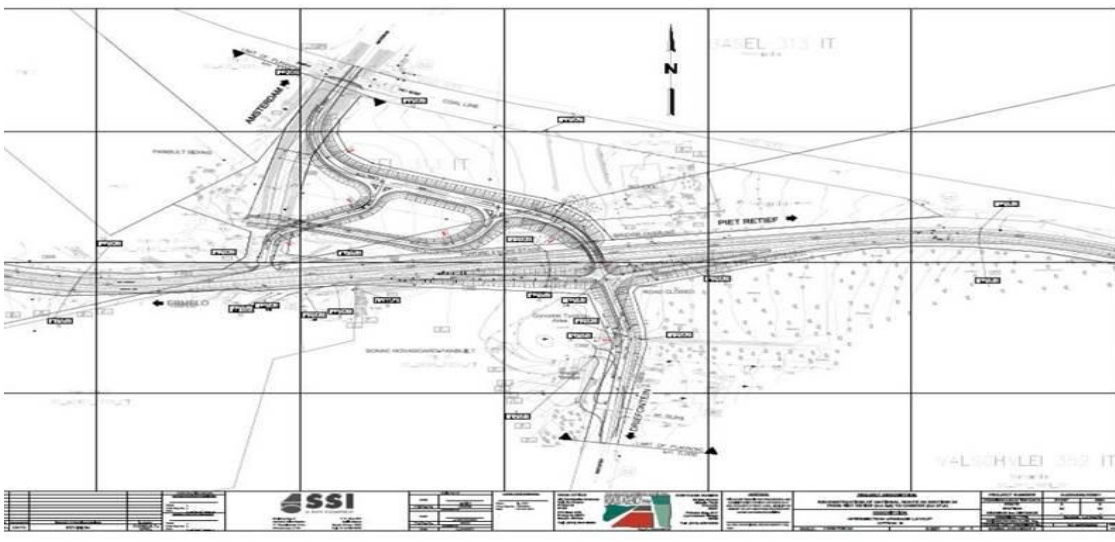


Figure 2 - Alternative

No Go option - The Kangra Coal (Pty) Ltd Mine is situated in Mpumalanga Province to the south -east of Ermelo and to the west of Piet Retief). Coal produced by the mine is transported by road from Maquasa East Plant to the Panbult Siding, a distance of approximately 32km. Most of this distance is on unpaved road and interlink vehicles / trucks with an average capacity of 30 tons each are used to transport coal. At Panbult Siding the coal is off-loaded from the trucks to a stockpile. The stockpiled coal is mechanically loaded onto railway trucks and then transported by rail to Richards Bay.

The coal mine is located to the south of the existing N2/34 highway and the Panbult Siding is to the north of this road. Heavy vehicles transporting the coal to the Panbult Siding from the coal mine enter and travel along the N2/34 between staggered intersections located 390m apart. SANRAL has identified the continuous movement of mine-related heavy vehicles transporting coal to Panbult Siding across the N2 as a safety issue which should be addressed through an upgrade of the Panbult Intersection.

Traffic studies have shown that heavy vehicles transporting coal from the Kangra Coal Mine to the Panbult Railway comprise a significant proportion of the total traffic on the D803, N2 and P97/2.

If nothing is done, an increase in traffic can be expected over the operation horizon of the mine in future. Space constraints, land use and ownership, and road safety concerns around the N2/34 will remain a permanent risk.

VII. Compliance Checklist

The National Environmental Management Act, 1998 (Act No. 107 of 1998), makes provision for regulations to carry out the purposes of the Act. **The following checklist was based on the 2014 Regulations (2),** and will guide the reader to the relevant pages of the report.

Table 4 – Compliance Checklist

<p>(2) A scoping report must contain the information that is necessary for a proper understanding of the site selection process, the scope of the assessment and the consultation process to be undertaken through the environmental impact assessment process, and must include—</p>	<p>Referencing in this report:</p>
<p>(a) details of— (i) the EAP who prepared the report; and (ii) the expertise of the EAP including a curriculum vitae.</p>	<p>Annexure 3;</p>
<p>(b) the location of the activity, including: (i) the 21 digit Surveyor General code of each cadastral land parcel; (ii) where available, the physical address and farm name; (iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;</p>	<p>Section 3;</p>
<p>(c) a plan which locates the proposed activity or activities applied for at an appropriate scale, or, if it is- (i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or (ii) on land where the property has not been defined, the coordinates within which the activity is to be undertaken;</p>	<p>1- Locality Map</p>
<p>d) a description of the scope of the proposed activity, including- (i) all listed and specified activities triggered; (ii) a description of the activities to be undertaken, including associated structures and infrastructure;</p>	<p>Section 1.1</p>
<p>(e) a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development</p>	<p>Section 2</p>

planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process;	
(f) a motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;	Section 7
(h) a full description of the process followed to reach the proposed preferred activity, site and location including:	
(i) details of the sites and alternative considered	Section 3.3
(ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;	Section 6 4-9
(iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;	7&9
(iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic and cultural aspects;	Section 4
(v) the impacts and risks for each alternative, including the nature, significance, consequence extent, duration and probability of the impacts, including the degree to which these impacts – (aa) can be reversed (bb) may cause irreplaceable loss of resources and (cc) can be avoided managed or mitigated.	Section 5
(vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential impacts and risks associated with the alternatives	Section 8
(vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected;	Section 5
(viii) the possible mitigation measures that could be applied and level of residual risk;	Section 5
(ix) the outcome of the site selection matrix;	Section 5
(x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such and	N/A

<p>(xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity</p>	<p>Section 10</p>
<p>(i) A Plan Of Study for undertaking the environmental impact assessment, including:</p>	
<p>(i) a description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity;</p>	<p>Section 9</p>
<p>(ii) a description of the aspects to be assessed as part of the environmental impact assessment process;</p>	
<p>(iii) aspects to be assessed by specialists;</p>	
<p>(iv) a description of the proposed method of assessing the environmental aspects including a description of the proposed method of assessing alternatives including alternatives to be assessed by specialists;</p>	
<p>(v) a description of the proposed method of assessing significance;</p>	
<p>(vi) an indication of the stages at which the competent authority will be consulted;</p>	
<p>(vii) particulars of the public participation process that will be conducted during the environmental impact assessment process; and</p>	
<p>(viii) a description of the tasks that will be undertaken as part of the environmental impact assessment process;</p>	
<p>(ix) identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.</p>	
<p>(j) an undertaking under oath or affirmation by the EAP in relation to (i) the correctness of the information provided in the report (ii) the inclusion of comments and inputs from the stakeholders and I&APs and (iii) 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.</p>	<p>Application Form 2</p>

(k) An undertaking under oath of affirmation by the EAP in relation to the level of agreement between the EAP and I&APs on the plan of study for undertaking the environmental impact assessment	2
l) where applicable, any specific information required by the competent authority	N/A
(m) any other matter required in terms of section 24(4) (a) and (b) of the Act.	N/A

ENVIRONMENTAL IMPACT ASSESSMENT

FOR THE

**UPGRADE OF THE NATIONAL ROUTE N2 SECTION 34 (PIET RETIEF TO ERMELO):
LINK AND GRADE-SEPARATION SCHEME FOR ROAD P97/2 AND ROAD D803
FOR KANGRA MINE COAL HAULAGE AT PANBULT, MPUMALANGA
PROPOSED ROAD EXPANSION, PANBULT**

FINAL SCOPING REPORT & PLAN OF STUDY FOR EIA

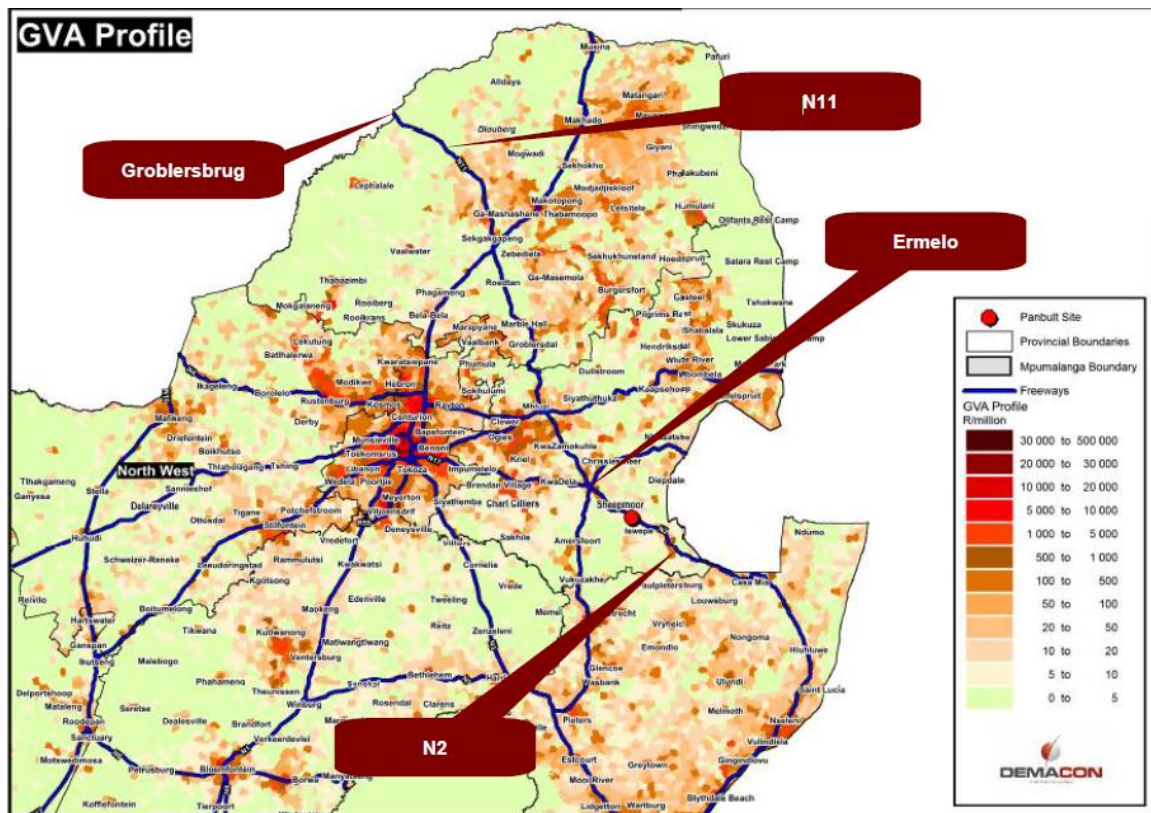
January 2017

1. INTRODUCTION

1.1 Project Background

SANRAL appointed LYMA Consulting Engineers (LYMA) to undertake the Environmental impact Assessment (EIA) process for the proposed upgrading of the National Route 2 (N2) Section 34 between Piet Retief and Ermelo, Panbult, Mpumalanga. SANRAL has identified the continuous movement of mine-related heavy vehicles transporting coal to Panbult Siding across the N2 as a safety issue which should be addressed through an upgrade of the Panbult Intersection.

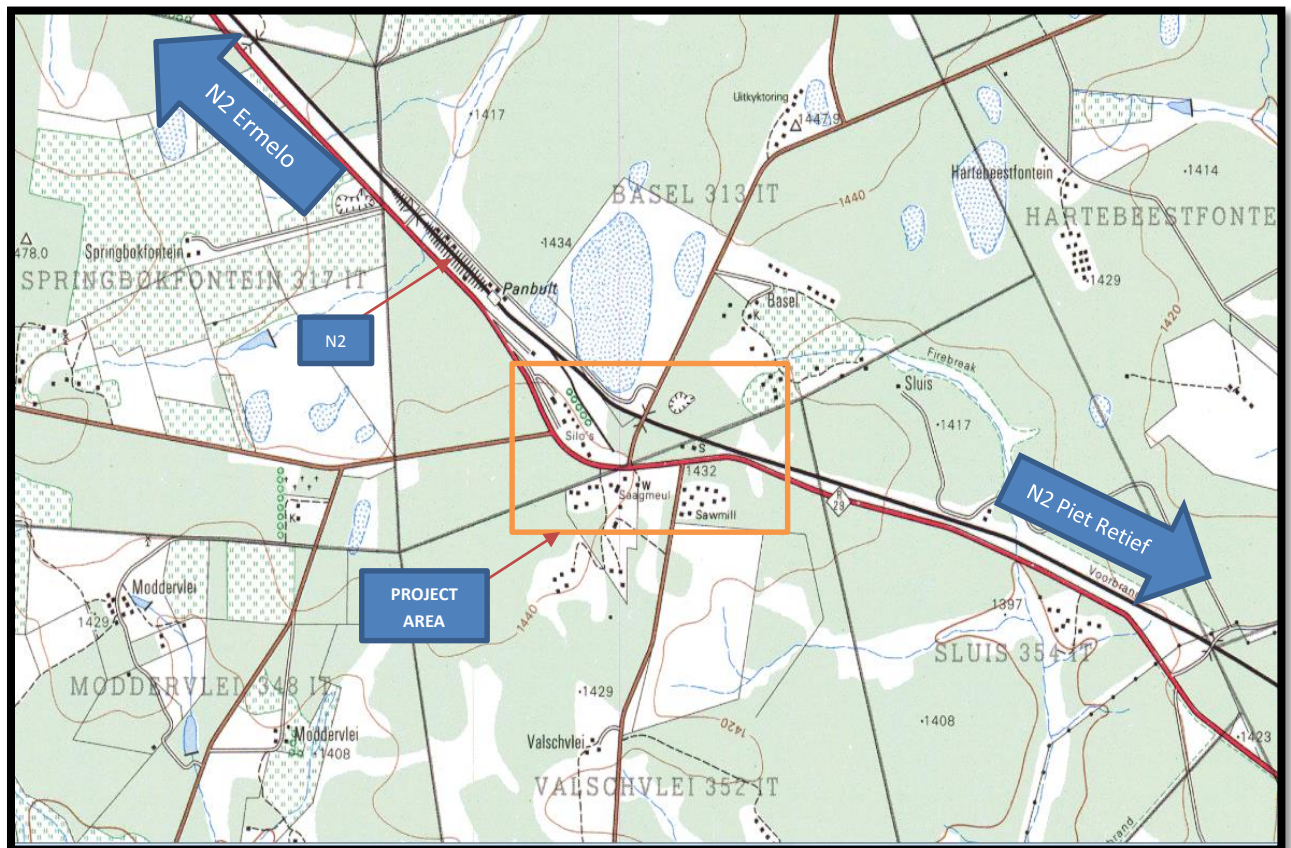
Figure 1: Location of the Panbult interchange in relation to N2/N11 Corridor (SIP 1)



The Panbult Interchange is located on section 34 of the N2 national highway. As such, it forms part of the N11/N2 Corridor connecting other Southern African countries with South Africa via Limpopo (as the N11), skirting Gauteng, then entering Mpumalanga (where it connects to the N2 in Ermelo) and continuing on to Richards Bay in KwaZulu-Natal, an important point of export for South Africa. This N11/N2 corridor

has been identified as an important development corridor by the South African government, namely the Waterberg Mineral Belt Corridor or SIP 1 (Strategic Integrated Project 1). The Panbult Interchange is located on the N2 national road, section 34, 58.5km southeast of Ermelo and 43.8 km northwest of Ermelo, Mpumalanga.

Figure 2: Project Area and Locality (See also Appendix 1)



Upgrading the interchange will significantly increase vehicular safety through the following design features:

- The Panbult link road will be designed for a maximum design speed of 50km/h, catering for the turning movement of heavy vehicles.
- A bridge crossing the N2-34 will be built.
- The on and off ramps will be designed to accommodate abnormal vehicles.
- The road will be widened to accommodate a new raised island, thereby eliminating the right turning movements.

Panbult Intersection upgrade will entail the following:

1. Construction of a 3-span continuous bridge with a post tensioned double cell box girder deck. The total deck length is 65.1m, with a span configuration of 15m–34.2m– 15m. The deck is supported on V-shaped piers monolithically connected to the deck. The piers are founded on a single row of piles. The abutments are spill through abutments founded on 2 rows of piles just below normal ground level.
2. Construction of a road with overall width of 15.46m, accommodating 2x3.7m lanes, 1x2.5m shoulder and 1x2.0m sidewalk. The sidewalk is separated from the carriageway with F-shaped barriers.
3. The construction of a new link road with road fill earthworks embankments on either side of the new bridge and the N2 as well as elevated ramp embankments to facilitate the east-west movement of abnormal and super heavy loads frequenting this N2 route.
4. The widening of the interchange which will exceed 6m.
5. The relocation of the road which will move the road 50m northwards and encroach the nearby school property. The stretch of road to be relocated is 1.6km long.
6. Construction of an interchange including a new link road with earthworks embankments on either side of the new bridge (over road) and elevated ramp embankments, within 32 m of a wetland. There is a wetland (to be studied further) nearby, which will possibly be affected by the new footprint of the road intersection.
7. The relocation of Eskom power line infrastructure, Telkom cables and DFA services.
8. Land acquisition in affected properties.

In terms of the NEMA EIA Regulations (2014), published in Government Notice R. 982 in Government Gazette No. 38282 of 4 December 2014, under Section 24(5) of the National Environmental Management Act, 1998 (Act No.107 of 1998), a Scoping & Environmental Impact Assessment are required for the development due to the following listed activities:

Table 1 – Relevant Section of the Legislation

Indicate the number of the relevant Government Notice:	Activity No (s) (relevant notice): e.g. Listing notices 1, 2 or 3	Describe each listed activity as per the wording in the listing notices:
Government Notice R.983 (2014 Regulations Listing Notice 1 (12))	<i>The development of- (ii)bridges exceeding 100sqm in size</i>	<ul style="list-style-type: none"> • Construction of a 3-span continuous bridge with a post tensioned double cell box girder deck. The total deck length is 65.1m, with a span configuration of 15m–34.2m– 15m. The deck is supported on V-shaped piers monolithically connected to the deck. The piers are founded on a single row of piles. The abutments are spill through abutments founded on 2 rows of piles just below normal ground level.
Government Notice R 983: Listing Notice 1 (19).	<i>The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from- (i) a watercourse</i>	<ul style="list-style-type: none"> • The project will result in excavation and backfilling of wetland within the footprint.
Government Notice R.983 (2014 Regulations) listing Notice 1 (56)	<i>The widening of a road by more than 6 metres, or lengthening of a road by more than 1 kilometres- (i) Where the existing reserve is wider than 13.5 metres or (ii) Where no reserve exists, where the existing road is wider than 8 metres.</i>	<ul style="list-style-type: none"> • The widening of the interchange which will exceed 6m. • Construction of a road with overall width of 15.46m, accommodating 2x3.7m lanes, 1x2.5m shoulder and 1x2.0m sidewalk.

<p>Government Notice R.984 (2014 Regulations) listing Notice 2 (27)</p>	<p>The development of</p> <ul style="list-style-type: none"> (i) a national road as defined in section 40 of the South African National Roads Agency Limited and National Roads Act, 1998 (Act No. 7 of 1998); (ii) a road administered by a provincial authority (iii) a road with a reserve wider than 30m (iv) a road catering for more than one lane of traffic in both directions 	<ul style="list-style-type: none"> • The construction of a new link road with road fill earthworks embankments on either side of the new bridge and the N2 as well as elevated ramp embankments to facilitate the east-west movement of abnormal and super heavy loads frequenting this N2 route. • Construction of a 3-span continuous bridge with a post tensioned double cell box girder deck. The total deck length is 65.1m, with a span configuration of 15m–34.2m– 15m. The deck is supported on V-shaped piers monolithically connected to the deck. The piers are founded on a single row of piles. The abutments are spill through abutments founded on 2 rows of piles just below normal ground level. • The widening of the interchange which will exceed 6m.
<p>Government Notice R 985: Listing Notice 3 (12)</p>	<p>The clearance of an area of 300 sqm or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.(a)</p>	<p>Before construction, the road, the servitude area needs to be cleared of vegetation.</p> <p>Vegetation comprises short closed grassland with many forbs. Also a few scattered shrubs near rocky outcrops. Most of the District vegetation consists of a great expanse of ancient grassland which is thought to date back well before the break-up of Earth's original land</p>

	<p><i>(ii) within critical biodiversity areas identified in bioregional plans</i></p> <p><i>(iv) on land where at the time of coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning.</i></p>	<p>mass (Gondwanaland) into continents and oceans.</p>
<p>Government Notice R 985: Listing Notice 1 (4).</p>	<p><i>The development of- a road with a reserve wider than 4m, with a reserve of less than 13.5 metres</i></p>	<p>The relocation of the road which will move the road 50m northwards and encroach the nearby school property. The stretch of road to be relocated is 1.6km long.</p>
<p>Government Notice R 983: Listing Notice 1 (19).</p>	<p><i>The development of facilities or infrastructure for the transmission and distribution of electricity- Outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts</i></p>	<p>The relocation of Eskom power line infrastructure</p>
<p>Government Notice R 985: Listing Notice 3 (19).</p>	<p><i>The development of masts or towers of any material or type used for telecommunication broadcasting or radio transmission purposes where the mast or tower-</i></p> <p><i>-is to be placed on a site not previously used for the purpose</i></p>	<p>The relocation of Telkom infrastructure and DFA services.</p>

The Department of Environmental Affairs will be the relevant decision making authority and the applicant is SANRAL. The EIA authorisation need to be granted by DEA and conditions for approval should be clearly understood before construction commences.

The development also triggers activities that require Water Use License because it falls within 500m of a wetland. This therefore means that before construction, the activity require a Water Use License asper the requirement in the National Water Act (Act no 36 of 1998) NWA under section 21 c and l water uses. Section c and l states the following:

- Section 21 (c) impeding or diverting the flow of water in a watercourse;
- Section 21 (i) altering the bed, banks, course or characteristics of a watercourse

The proposed project is subject to the requirements of the Environmental Impact Assessment Regulations (2014 EIA Regulations) in terms of the National Environmental Management Act (NEMA, Act 107 of 1998, as amended). The act makes provision for the identification and assessment of activities that are potentially detrimental to the environment and which require authorisation from the competent authority (in this case Department of Environmental Affairs) based on the findings of an EIA.

The application is subject to Scoping and Environmental Impact Reporting. A scoping and Environmental Impact Assessment Report (EIR) must still be completed for the proposed project and the information from the EIR must then be presented to the authorities for decision.

The EIA will be undertaken using the following phased approach:

- **Phase 1:** Project Initiation: authority consultation, site visits, the initiation of the environmental process and public participation;
- **Phase 2:** Compilation of the Scoping Report, identification of the specialist studies, and compilation of Plan of Study of Environmental Impact Report (EIR);
- **Phase 3:** The compilation of the EIR and the Environmental Management Programme (EMPr); and
- **Phase 4:** The compilation of the site specific EMPr.

1.2 Regulations (2014) guiding the Environmental Scoping Process

The 2014 EIA Regulations stipulate time frames for the submission and consideration of a Scoping Report, which applies as follows to this project:

Submission of scoping report to competent authority

21. (1) *within **44 days** of receipt of the application* by DEA, Lyma (on behalf of applicant) must submit to DEA a Scoping Report which has been subjected to a public participation process of at least **30 days** and which reflects the incorporation of comments received, including any comments of the competent authority.

Consideration of scoping report

22. *Within **43 days** of receipt* of a scoping report DEA must:

- (a) accept the scoping report, with or without conditions, and advise Lyma to proceed or continue with the tasks contemplated in the plan of study for EIA; or
- (b) refuse environmental authorisation if the proposed activity is in conflict with a prohibition contained in legislation

23. (1) *Within **106 days** of the acceptance of the scoping report*, Lyma must submit to the competent authority-

- (a) an EIA report inclusive of any specialist reports, and an EMPr, which must have been subjected to a public participation process of at least 30 days (or a notification in writing that the EIA report inclusive of any specialist reports, and an EMPr, will be submitted within 156 days of acceptance of the scoping report by DEA, as significant changes have been made or significant new information has been added to the environmental impact report or EMPr, which changes or information was not contained in the reports consulted on during the initial public participation process contemplated in sub-regulation (1)(a), and that the revised environmental impact report or EMPr will be subjected to another public participation process of at least 30 days).

1.3 Objectives of the Environmental Scoping Report

The objective of a Scoping Report is to present an overview of the proposed activity and associated issues that require assessment in the EIA Phase. The EIA process typically comprises two phases, a Scoping Phase and an EIA phase. The Scoping Phase seeks to:

- Engage all Interested and Affected Parties (I&APs) through the advertisement and notification of the project;
- Communicate general and preliminary specialist information regarding the proposed project to all I&APs and other stakeholders in such a manner that it is easily understandable;
- Describe the key project issues and alternatives identified by the proponent, consultants, authorities and the public, which will require more detailed investigations in the EIA phase;
- Provide the proposed approach to the EIA phase indicating the terms of reference for any specialist studies.
- Elimination of impacts that are of little or no significance in order to direct resources at evaluating and mitigating identified significant impacts.
- The report seeks to identify the best option available to the proponent by means of quantifying the various inputs received from stakeholders, Interested and affected parties, specialists and the experience of the EAP.

1.1 Project Team

1.1.1 The Applicant

Table 2: The Applicant

Applicant name:	SANRAL
Responsible person:	Mr. Mogole Mphahlele
Physical address:	SANRAL Head Office, 48 Tambotie Avenue, Val de Grace
Postal address:	Private Bag X17 Lynnwood Ridge, 0040
Cell Phone Number	078 802 2997
Fax:	012 348 1512
E-mail:	mphahlelem@nra.co.za

1.1.2 The Engineers

Table 3: The Engineers

Company Name:	Hlanganani Engineers & Project Managers (Pty) Ltd
Responsible person:	Deran Narainsamy (Pr.Eng.)
Physical address:	89 Garsfontein Road, Alphen Park, Pretoria
Telephone Number	(+27) (0) (12) 346 2767
Cell Phone Number	+27 (0) 82 565 0611
Fax:	(+27) (0) (12) 346 3819
E-mail:	deran@hcon.co.za
Website	www.hlanganani-consulting.com

1.1.3 The Environmental Assessment Practitioner

LYMA is a well-established South African firm, which provides professional services in the built environment. LYMA is 100% black owned with extensive knowledge and experience of the built environment within the South African context. LYMA has extensive experience in infrastructure development and extensive knowledge of policies and legislative framework that governs the built environment. In 2013, LYMA established an environmental management team with a strong environmental management expertise. This team of environmental experts has more than 17 years of environmental management experience in both the public sector and the private sector. More importantly, some of these team members have previously operated in the government sphere and therefore have a good understanding of the challenges and opportunities that exist in this regard.

Table 4: Consultant Details

Company	Lyma Consulting Engineers
Mailing Address	Postnet Suite 85, Private Bag X2, Diamond, Kimberley, 8305
Telephone	+27 53 831 3330
Facsimile	+27 53 831 1931
Cellphone	+27 82 448 6243
E-Mail	palesa.mathibeli@icloud.com

1.1.4 Expertise of the EAP to carry out Scoping procedures

- Ms Palesa Mathibeli is an experienced Environmental Scientist and Manager with more than sixteen years' experience in the environmental management field whereby she has gained extensive knowledge in conceptualising, designing and implementing policies, strategies, programmes and projects mainly aimed at ensuring sustainable development and improving both urban and rural environments. She has a Bachelor of Science Honours Degree in Environment Management and a Masters in Management Degree (*cum laude*), both of which were obtained from the University of Witwatersrand.

She is familiar with the legislative framework guiding environmental management in South Africa and conversant with environmental policies and treaties both on local and international level. In addition, from her work at both provincial and local level, she has gained extensive knowledge on how the public sector operates at both levels as well as opportunities and constraints in this regard. She has formed a strong network from liaising with other government authorities in all the three spheres, environmental consultants, business, communities and other relevant stakeholders in the Environmental field.

As an Independent Environmental Assessment Practitioner, Ms Mathibeli has competently executed a variety of Environmental Impact Assessments. She is also currently a Consultant for the International Finance Corporation (IFC) (World Bank Group) where she ensure that projects funded by the IFC are in accordance with the IFC Social and Environmental Performance Standards.

- Mr JD Nkuna holds a Masters Degree in Environmental Management. He has worked in the Department of Water Affairs for 5 years, processing a variety of water use licenses

in mining, industries and municipalities. He acquired skills in the field of waste and wastewater management in the process. He then transferred to the Gauteng Department of Agriculture and Rural Development, where he was responsible for Environmental Impact Assessment (EIA) applications in the industrial sector. He was also responsible for air quality management in the Province of Gauteng. He evaluated and processed a variety of EIA's and commented on a variety of atmospheric emission license applications as a commenting authority. He later joined Lungisa Consulting Engineers and Scientists as an Environmental Assessment Practitioner and finalised a variety of EIA reports on behalf of clients. Among the EIA projects he applied for authorisation for clients are the filling stations, chicken farms, residential townships and Pyrolysis bio-plant and waste disposal site.

1.1.5 Specialists Studies

The specialists that undertook the relevant specialist studies are presented below.

Table 5: Specialist Details

Discipline	Specialist
Public Participation & Facilitation	Lyma Consulting Engineers (As above)
Wetland Assessment	Freddy Milambo Tshiala Maanakana Projects and Consulting Cellphone: 081 498 6253; Email: mftshiala@gmail.com
Noise Impact Assessment	Enviro Acoustic Research Tel: 012 – 004 0362, Fax: 086 – 621 0292, E-mail: info@eares.co.za
Heritage Impact Assessment	Nzumbulula Heritage Assessment: Dr Murimbuka Tel: 011 021 4937; Email: info@nzumbululo.com
Water Use License Application	Freddy Milambo Tshiala Maanakana Projects and Consulting Cellphone: 081 498 6253; Email: mftshiala@gmail.com
Socio-Economic Impact Assessment	Hein du Toit Telephone Number: 012 460 7009; Cellphone Number: 082 8988 667 Email Address: hein@demacon.co.za

Specialist reports are attached to this Scoping Report and findings have been discussed in the body of the report.

1.1.6 The Authority

The following are the details of the competent authority responsible for reviewing this application:

Table 6: Competent Authority

Competent authority	Department of Environmental Affairs
Director	Integrated Environmental Authorisations
Telephone Number	012 3999372
Email	EIAAdmin@environment.gov.za
Postal Address	Private Bag X447, Pretoria, 0001
Physical Address	Department of Environmental Affairs, Environment House, 473 Steve Biko Road Arcadia, Pretoria

2. LEGAL REQUIREMENTS, GUIDELINES AND POLICIES

The overarching environmental legislation for the management of the environment in South Africa is the National Environmental Management Act, 1998 (Act 107 of 1998 "NEMA"). Its preamble states that sustainable development requires the integration of social, economic and environmental factors in the planning, implementation and evaluation of environmental decisions to ensure that development serves present and future generations.

Chapter 5 of NEMA makes provisions for regulations to be formulated and published. The purpose of the EIA Regulations is "to regulate the procedures and criteria as contemplated in Chapter 5 of the National Environmental Management Act relating to the submission, processing and consideration of, and decision on applications for environmental authorisation for the commencement of activities in order to avoid detrimental impacts on the environment, or where it cannot be avoided, ensure mitigation and management of impacts to acceptable levels, and to optimise positive environmental impacts, and for matters pertaining thereto".

In terms of the NEMA EIA Regulations (2014), published in Government Notice R. 982 in Government Gazette No. 38282 of 4 December 2014, under Section 24(5) of the National Environmental Management Act, 1998 (Act No.107 of 1998), a Scoping & Environmental Impact Assessment are required for the development due to the following listed activities:

Table 7: Relevant Legislation

Indicate the number of the relevant Government Notice:	Activity No (s) (relevant notice): e.g. Listing notices 1, 2 or 3	Describe each listed activity as per the wording in the listing notices:
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Government Notice R 983: Listing Notice 1 (19).	<i>The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from- (i) a watercourse</i>	<ul style="list-style-type: none"> • The project will result in excavation and backfilling of wetland within the footprint.
Government Notice R.983 (2014 Regulations) listing Notice 1 (56)	<i>The widening of a road by more than 6 metres, or lengthening of a road by more than 1 kilometres- (i) Where the existing reserve is wider than 13.5 metres or (ii) Where no reserve exists, where the existing road is wider than 8 metres.</i>	<ul style="list-style-type: none"> • The widening of the interchange which will exceed 6m. • Construction of a road with overall width of 15.46m, accommodating 2x3.7m lanes, 1x2.5m shoulder and 1x2.0m sidewalk.
Government Notice R.984 (2014 Regulations) listing Notice 2 (27)	<i>The development of (i) a national road as defined in section 40 of the South African National Roads Agency</i>	<ul style="list-style-type: none"> • The construction of a new link road with road fill earthworks embankments on either side of the new bridge and the N2 as

	<p><i>Limited and National Roads Act, 1998 (Act No. 7 of 1998);</i></p> <p><i>(ii) a road administered by a provincial authority</i></p> <p><i>(iii) a road with a reserve wider than 30m</i></p> <p><i>(iv) a road catering for more than one lane of traffic in both directions</i></p>	<p>well as elevated ramp embankments to facilitate the east-west movement of abnormal and super heavy loads frequenting this N2 route.</p> <ul style="list-style-type: none"> • Construction of a 3-span continuous bridge with a post tensioned double cell box girder deck. The total deck length is 65.1m, with a span configuration of 15m–34.2m– 15m. The deck is supported on V-shaped piers monolithically connected to the deck. The piers are founded on a single row of piles. The abutments are spill through abutments founded on 2 rows of piles just below normal ground level. • The widening of the interchange which will exceed 6m.
<p>Government Notice R 985: Listing Notice 3 (12)</p>	<p><i>The clearance of an area of 300 sqm or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.(a)</i></p> <p><i>(ii) within critical biodiversity areas identified in bioregional plans</i></p> <p><i>(iv) on land where at the time of coming into effect of this Notice or thereafter such land was zoned open space,</i></p>	<p>Before construction, the road, the servitude area needs to be cleared of vegetation.</p> <p>Vegetation comprises short closed grassland with many forbs. Also a few scattered shrubs near rocky outcrops. Most of the District vegetation consists of a great expanse of ancient grassland which is thought to date back well before the break-up of Earth's original land mass (Gondwanaland) into continents and oceans.</p>

	<i>conservation or had an equivalent zoning.</i>	
Government Notice R 985: Listing Notice 1 (4).	<i>The development of- a road with a reserve wider than 4m, with a reserve of less than 13.5 metres</i>	The relocation of the road which will move the road 50m northwards and encroach the nearby school property. The stretch of road to be relocated is 1.6km long.
Government Notice R 983: Listing Notice 1 (19).	<i>The development of facilities or infrastructure for the transmission and distribution of electricity- Outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts</i>	The relocation of Eskom power line infrastructure
Government Notice R 985: Listing Notice 3 (19).	<i>The development of masts or towers of any material or type used for telecommunication broadcasting or radio transmission purposes where the mast or tower- -is to be placed on a site not previously used for the purpose</i>	The relocation of Telkom infrastructure and DFA services.

The description of the Scoping &EIR process to be followed EIA Process is summarised in the flow diagram below:

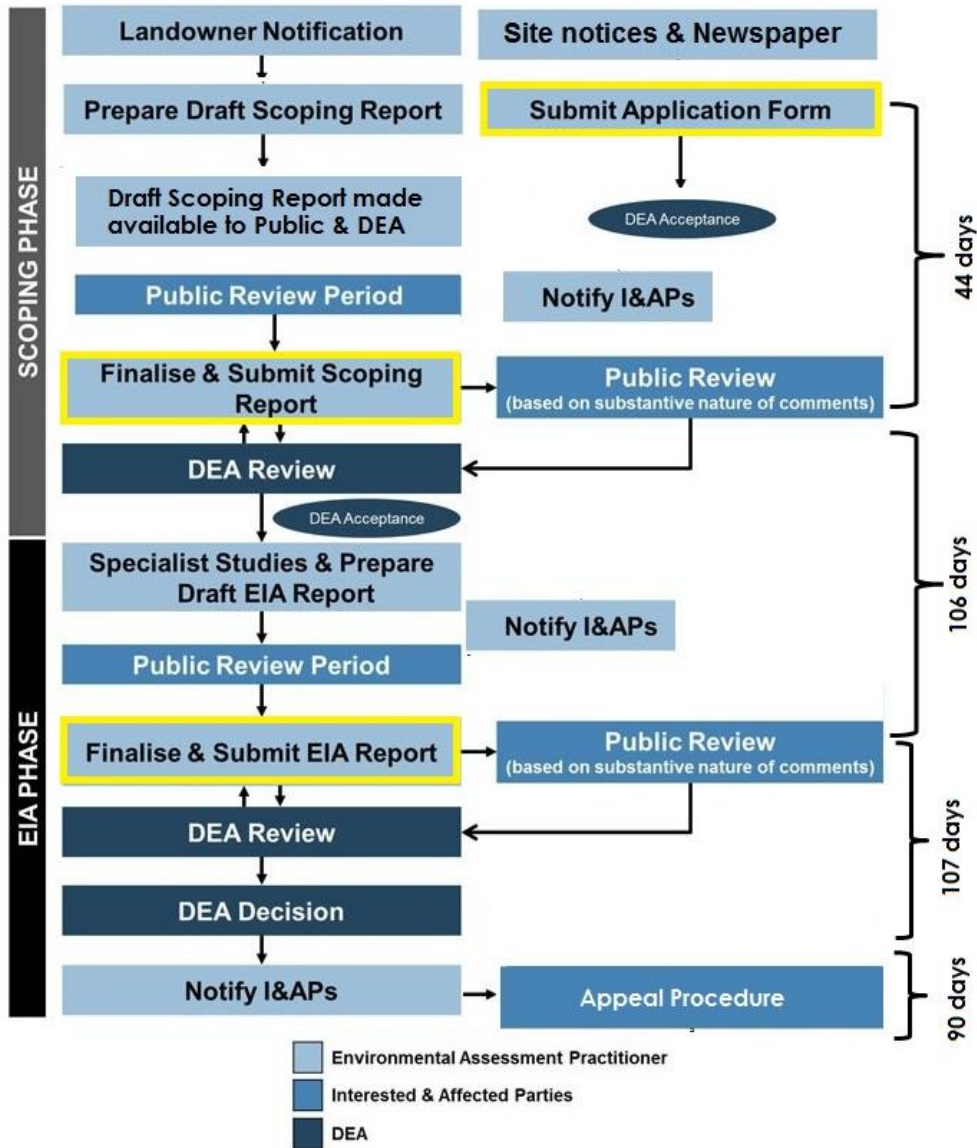


Figure 3: Scoping and Environmental Impact Report Flow Report

Regulation 2 of the 2014 Environmental Impact Assessment Regulations states that one of the purposes of the scoping report is to identify the relevant policies and legislation relevant to the activity. The scoping report must include a description of the policy and legislative context within the development is proposed including an identification of all 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. It has been determined that a scoping and environmental impact assessment report (S&EIR) process must be completed in respect of activities in a notice by the Minister in terms of section 24D of the NEMA. The scope and content of this final scoping has been guided by the following additional legislation and guidelines.

2.1 Constitution of the Republic of South Africa

The Constitution of the Republic of South Africa, 1996 has major implications for environmental management. The main effects are the protection of environmental and property rights, the drastic change brought about by the sections dealing with administrative law such as access to information, just administrative action and broadening of the *locus standi* of litigants. These aspects provide general and overarching support and are of major significance in the effective implementation of the environmental management principles and structures of the Environment Conservation Act and NEMA. Section 24 in the Bill of Rights of the Constitution specifically states:

"Everyone has the right –

- *To an environment that is not harmful to their health or well-being; and*
- *To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that -*
 - *Prevent pollution and ecological degradation;*
 - *Promote conservation; and*
 - *Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."*

Section 24 of the Constitution therefore places a duty on all spheres of government to take reasonable steps, including making laws, preventing pollution, promoting conservation and ensuring sustainable development.

SANRAL will be required to protect Constitutional Rights when undertaking this project for the construction of the Panbult.

2.2 The National Environmental Management: Air Quality Act 39 of 2004

The National Environmental Management: Air Quality Act 39 of 2004 provides for the setting of national norms and standards for regulating air quality monitoring, management and control and describes specific air quality measures so as to protect the environment and human health or well-being by: preventing pollution and ecological degradation; and promoting sustainable development through reasonable resource use. It also includes reference to the control of offensive odours whereby reasonable steps to prevent the emission of any offensive odours caused by activities on a premises are required.

SANRAL is committed to control emissions during construction of the Panbult Road

2.3 The Conservation of Agricultural Resources Act 43 of 1983

The Act provides for control over the utilization of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants; and for matters connected therewith.

Proposed road will fall within 500m of a watercourse, impacts such as soil erosion, alien plants, flooding and pollution must be avoided by all means.

2.4 National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended

The National Environmental Management Act (NEMA) provides the legislative framework for Integrated Environmental Management (IEM) in South Africa. Section 24 provides that all activities that may significantly affect the environment and require authorisation by law must be assessed prior to approval. NEMA also provides for co-operative environmental governance by establishing principles for decision making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-coordinating environmental functions exercised by organs of the State and to provide for matters connected therewith. Section 2 of NEMA establishes a set of principles that apply to the activities of all organs of state that may significantly affect the environment. These include the following:

- Development must be sustainable;
- Pollution must be avoided or minimised and remedied;
- Waste must be avoided or minimised, reused or recycled;
- Negative impacts must be minimised; and
- Responsibility for the environmental health and safety consequences of a policy, project, product or service exists throughout its life cycle.

These principles are taken into consideration when a government department exercises its powers, for example during the granting of permits and the enforcement of existing legislation or conditions of approval. Section 28(1) of NEMA states that "every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring". If such pollution cannot be prevented, then appropriate measures must be taken to minimise or rectify such pollution.

These measures may include:

- Assessing the impact on the environment;
- Informing and educating employees about the environmental risks of their work and ways of minimising these risks;
- Ceasing, modifying or controlling actions which cause pollution/degradation;
- Containing pollutants or preventing movement of pollutants;
- Eliminating the source of pollution; and
- Remedying the impacts of the pollution;
- The authorities may direct an industry to rectify or remedy a potential or actual

pollution problem;

- If such a directive is not complied with, the authorities may undertake the work and recover the costs from the responsible industry.

See table 10, road construction is a listed activity that triggers notice number 2 of NEMA

2.5 Integrated Environmental Management (IEM)

IEM is a philosophy for ensuring that environmental considerations are fully integrated into all stages of the development process. This philosophy aims to achieve a desirable balance between conservation and development (DEAT, 1992). The IEM guidelines intend encouraging a pro-active approach to sourcing, collating and presenting information in a manner that can be interpreted at all levels. The DEA Integrated Environmental Management Information Series guidelines are also considered during this S&EIR application process.

EIA Regulations promulgated under the National Environmental Management Act, Act 107 of 1998, as amended (NEMA EIA Regulations, 2014)

New EIA Regulations were promulgated under Section 24 of NEMA and came into effect on 04 December 2014. These EIA Regulations prescribe two different authorisation processes as follows:

- The Basic Assessment Process; and
- The Scoping and EIA process.

Irrespective of which process applies, the Regulations make provision for the following:

- Public Participation must be undertaken at various stages during the assessment process.
- Assessments must be conducted by an Independent Environmental Assessment Practitioner (EAP).
- The authority delegated with deciding on environmental applications respond to applications and submissions within stipulated timeframes.
- Decisions taken by the authorities can be appealed by the proponent or any other interested and affected party (IAP).

2.6 National Water Act 36 of 1998

The National Water Act aims to manage the national water resources to achieve sustainable use of water for the benefit of all water users. The purpose of the Act is to ensure that the nation's water resources are protected, used, developed, conserved, and managed in ways, which take into account:

- Meeting the basic human needs of present and future generations;
- Promoting equitable access to water;
- Redressing the results of past racial discrimination;
- Promoting the efficient, sustainable and beneficial use of water in the public interest;
- Facilitating social and economic development;
- Providing for the growing demand for water use;
- Protecting aquatic and associated ecosystems and their biological diversity;
- Reducing and preventing pollution and degradation of water resources;
- Meeting international obligations;
- Promoting dam safety; and
- Managing floods and droughts.

Section 21 of the National Water Act describes water uses as follows:

(a) taking water from a water resource,

(b) storing water,

(c) impeding or diverting the flow of water in a watercourse,

(d) engaging in a stream flow reduction activity contemplated in section 36,

(e) engaging in a controlled activity identified as such in section 37(1) or declared under section

38(1),

(f) discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit,

(g) disposing of waste in a manner which may detrimentally impact on a water resource,

(h) disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process,

(i) altering the bed, banks, course or characteristics of a watercourse,

(j) removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people, and

(k) using water for recreational purposes.

The project does trigger the Section 21 (c) and (i) water uses. A water use licence application will be compiled to submit to the Department of Water and Sanitation for consideration and approval.

There is a watercourse within 32m of proposed development, this activity triggers section 21 c and I of the National Water Act.

2.7 National Heritage Resources Act 25 of 1999

The National Heritage Resources Act 25 of 1999 was introduced to ensure protection of South Africa's important heritage features. Section 38 of the Act requires that: *any person who intends to undertake a development categorised as: **The construction of a road, wall, road, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;** must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.*

Proposed road triggers Heritage Resources Act and for that reason, a heritage assessment was done.

2.8 National Environmental Management: Waste Act 59 of 2008

Waste management is regulated by the National Environmental Management: Waste Act 59 of 2008 ("the Waste Act") with effect from 1 July 2009. The Waste Act defines waste as:

(a) any substance, material or object, that is unwanted, rejected, abandoned, discarded or disposed of, or that is intended or required to be discarded or disposed of, by the holder of that substance, material or object, whether or not such substance, material or object can be re-used, recycled or recovered and includes all wastes as defined in Schedule 3 to this Act; or

(b) any other substance, material or object that is not included in Schedule 3 that may be defined as a waste by the Minister by notice in the Gazette, but any waste or portion of waste, referred to in paragraphs (a) and (b), ceases to be a waste-

- (i) once an application for its re-use, recycling or recovery has been approved or, after such approval, once it is, or has been re-used, recycled or recovered;

- (ii) where approval is not required, once a waste is, or has been re-used, recycled or recovered;
- (iii) where the Minister has, in terms of section 74, exempted any waste or a portion of waste generated by a particular process from the definition of waste; or
- (iv) where the Minister has, in the prescribed manner, excluded any waste stream or a portion of a waste stream from the definition of waste.

Section 16 of the Waste Act states that the holder of waste must, within the holder's power, take all reasonable measures to:

- (a) *avoid the generation of waste and where such generation cannot be avoided to minimise the toxicity and amounts of waste that are generated;*
- (b) *reduce, re-use, recycle and recover waste;*
- (c) *where waste must be disposed of, ensure that the waste is treated and disposed of in an environmentally sound manner;*
- (d) *manage the waste in such a manner that it does not endanger health or the environment or cause a nuisance through noise, odour or visual impacts;*
- (e) *prevent any employee or any person under his or her supervision from contravening this Act; and*
- (f) *prevent the waste from being used for an unauthorised purpose.*

SANRAL will be required to abide by the requirements of the Waste Management Act when approaching this project for the construction of the Panbult N2 upgrade.

2.9 Land Use Planning Legislation

Legislation that regulates Land Use Planning has led to "spatial planning tools" that are contained in Municipal and District Strategic Management Frameworks (SMFs), Strategic Development Initiatives (SDIs) and Municipal By-laws.

2.10 The Development Facilitation Act

Contains development facilitation regulations under the Regulations under Development facilitation Act 3. The Act is directed at provincial and local spheres of government; and serves to re-address the imbalances of the past and to ensure that there is equity in the application of spatial development planning and land use management systems.

The Integrated Development Plan (IDP) of Mpumalanga province in 2012/2016 is a product of the IDP process. The highest priorities that were identified are:

- The upgrading of informal settlements.
- Public transport infrastructure and systems, including the renewal of the commuter rail fleet, supported by station and facilities upgrades to enhance links with road-based services.
- The construction of infrastructure to import liquefied natural gas and accelerated exploration activity to find sufficient domestic gas feedstock's (including exploration of shale and coal bed methane reserves) to diversify our energy mix and reduce our carbon emissions.
- Procuring about 20 000 MW of renewable electricity by 2030, importing electricity from the region, decommissioning 11 000MW of aging coal-fired power stations and accelerated investments in demand-side savings, including technologies such as solar water heating.

With the construction of the road , SANRAL will support the development planning suggestions that are contained in the IDP, in particular by improving road circulation and subsequent access to job opportunities.

2.11 The National Environmental Management Biodiversity Act (NEMBA)

NEMBA (Act 10 of 2004); Chapter 4 and 5 are important to this project, in terms of the following Regulations:

- *National List Of Ecosystems that are threatened and in need of protection* (Published under Government Notice 1002 in Government Gazette 34809 of 9 December 2012)
- *Publication Of Lists Of Critically Endangered, Endangered, Vulnerable And Protected Species* (Published under Government Notice R151 in Government Gazette 29657 of 23 February 2007)
- *Threatened Or Protected Species Regulations* (Published under Government Notice R152 in Government Gazette 29657 of 23 February 2007)
- *Alien And Invasive Species Regulations* (Published under Government Notice R598 in Government Gazette 37885 of 1 August 2014).
- *Publication Of National List Of Invasive Species* (Published under Government Notice R507 in Government Gazette 36683 of 19 July 2013).

This Environmental Impact Assessment will assist SANRAL to take cognisance of the regulations of NEMBA when approaching this project for the construction of the Proposed Panbult Interchange.

2.12 National Development Plan 2030

The National Development Plan (NDP) offers a long-term perspective for development in the country. The NDP aims to eliminate poverty and reduce inequality by 2030. According to the plan, South Africa can realise these goals by drawing on the energies of its people, growing an inclusive economy, building capabilities, enhancing the capacity of the state, and promoting leadership and partnerships throughout society.

- The planning is that the NDP and its proposals are to be implemented in the right order over the next 17 years. Three phases have been identified.
- Government has already started a process to align the long term plans of departments with the NDP and to identify areas where policy change is required to ensure consistency and coherence.
- The NDP is a plan for the whole country. Government will engage with all sectors to understand how they are contributing to implementation, and particularly to identify any obstacles to them fulfilling their role effectively.
- The Plan will shape budget allocation over the next 17 years.
- The Plan identifies the task of improving the quality of public services as critical to achieving transformation. This will require provinces to focus on identifying and overcoming the obstacles to achieving improved outcomes, including the need to strengthen the ability of local government to fulfil its developmental role.

Improved road infrastructure and strengthening of links to nodes and job opportunities (such as the Panbult project) are in support of the NDP.

2.13 Additional notable legislation

Other applicable legislation includes:

- National Road Traffic Act (Act No. 93 of 1996); and
- Subdivision of Agricultural Land Act (Act 70 of 1970)

2.14 Policy Guidelines

The following Guideline documents have been considered in the preparation of this report:

- Department of Environmental Affairs (DEA) Integrated Environmental Management Guideline Series 7, Public Participation in the EIA Process as published in Government Gazette No. 33308, 18 June 2010;
- Implementation Guidelines (published for comment) in Government Notice 603 of 2010
- Integrated Environmental Management Information Series (Booklets 0 to 23) (DEAT, 2002 – 2005);
- DEAT (2004) Cumulative Effects Assessment, Integrated Environmental Management, Information Series 7.

3. PROJECT DESCRIPTION

3.1 Project locality

The Panbult Interchange is located on section 34 of the N2 national highway. As such, it forms part of the N11/N2 Corridor connecting other Southern African countries with South Africa via Limpopo (as the N11), skirting Gauteng, then entering Mpumalanga (where it connects to the N2 in Ermelo) and continuing on to Richards Bay in KwaZulu-Natal, an important point of export for South Africa. This N11/N2 corridor has been identified as an important development corridor by the South African government, namely the Waterberg Mineral Belt Corridor or SIP 1.

The following properties are affected by the development/upgrade:

- Portion 7 of Farm Valschvlei 352;
- Remaining extent of Farm Valschvlei 352 (TOIT00000000035200001)
- Portion 16 of Farm Valschvlei 352 (TOIT00000000035200016)
- Portion 1 of Farm Valschvlei 352 (TOIT00000000035200041)
- Portion 2 of Farm Basel 313 (TOIT00000000031300002)
- Remaining extent of Farm Basel 313; (TOIT00000000031300000)
- Remaining extent of Portion 5 of the farm Valschvlei 352(TOIT00000000035200005)
- Remaining extent of Farm Basel 313 (TOIT00000000031300005)

3.2 Project Motivation (Need and Desirability)

The purpose of the upgrading is to improve the road safety on the N2-34 at Panbult, Mpumalanga. Currently, coal is transported from Kangra Coal in Driefontein to the Panbult Rail station. The coal transportation vehicles have to travel along a staggered intersection

located on the N2-34. The proposed upgrading of the Panbult Interchange will remove this staggered intersection with an overpass structure and ramps on the southern side of the N2-34. This would be a medium to long term road safety improvement, as Kangra Coal has an expected life span of more than 20 years, with an estimated coal supply of 3 million tons of coal per year. As the economic activity in the Panbult area is dependent on heavy vehicles for transporting goods (especially coal and wood products), the road with its staggered T-junctions carries extremely high volumes of heavy vehicles. Implementation of adequate traffic control measures to accommodate safe alternative routes for vehicles is therefore a main focus of the upgrade project. The largest contribution to heavy vehicles through the Panbult interchange is due to coal carriers between Panbult Station and Kangra Coal, heavy vehicles used by Sonae Novobord for the movement of their wooden products, as well as the timber-carrying trucks from surrounding plantation owners to the sawmills in Panbult.

3.3 Consideration of Alternatives

The alternatives for the proposed project will be assessed in a similar way as the environmental impacts for the preferred option. This will include the comparison between the alternatives to the preferred method, in terms of siting and design. During the comparison the most environmentally acceptable alternative, based on the recommendations from specialist studies and the public participation process, will be proposed. The comparison of the alternatives will weigh the alternatives to the preferred method. Included in this analysis as well is the no-go option alternative.

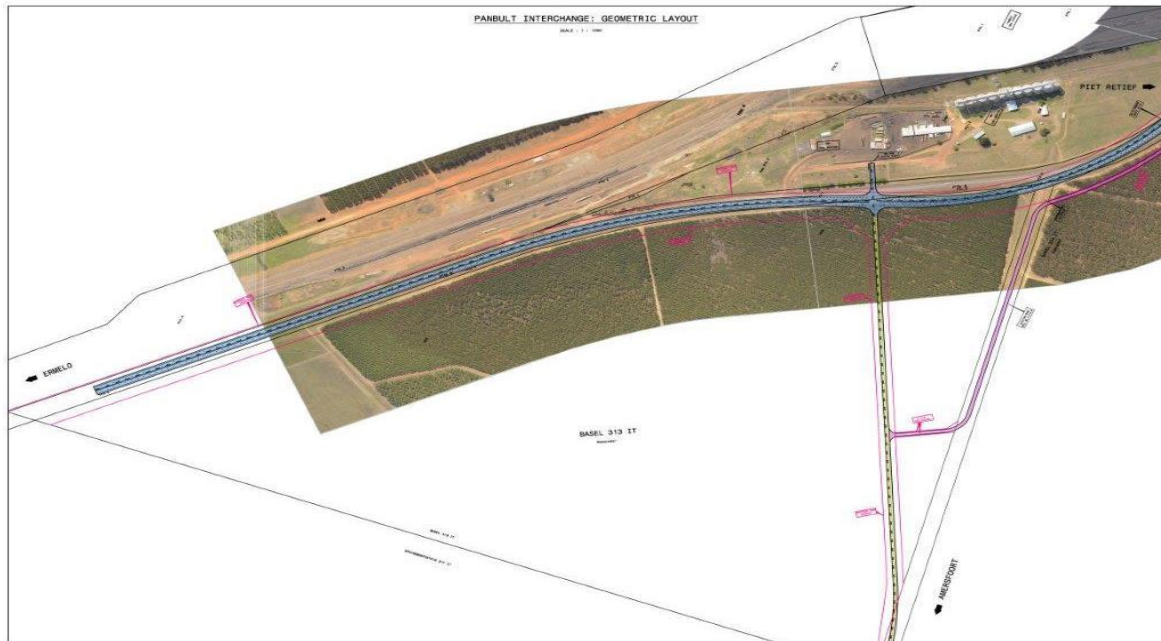
In terms of the NEMA EIA Regulations the applicant is required to demonstrate that reasonable alternatives have been described and investigated in sufficient detail. In addition to the preferred alternative as described in Chapter 4, the following additional alternatives are being considered in this EIA:

- The "No-Go" or "leave as is" alternative;
- The preferred option;
- The alternative option(s)

3.3.1 Option A- Preferred Alternative

From a traffic and geometric perspective Option A is the preferred scheme because it provides a free-flow movement for trucks on a separate link. Option A is less complex than Option B.

Figure 4: Alternative A (Refer to A for larger diagrams)



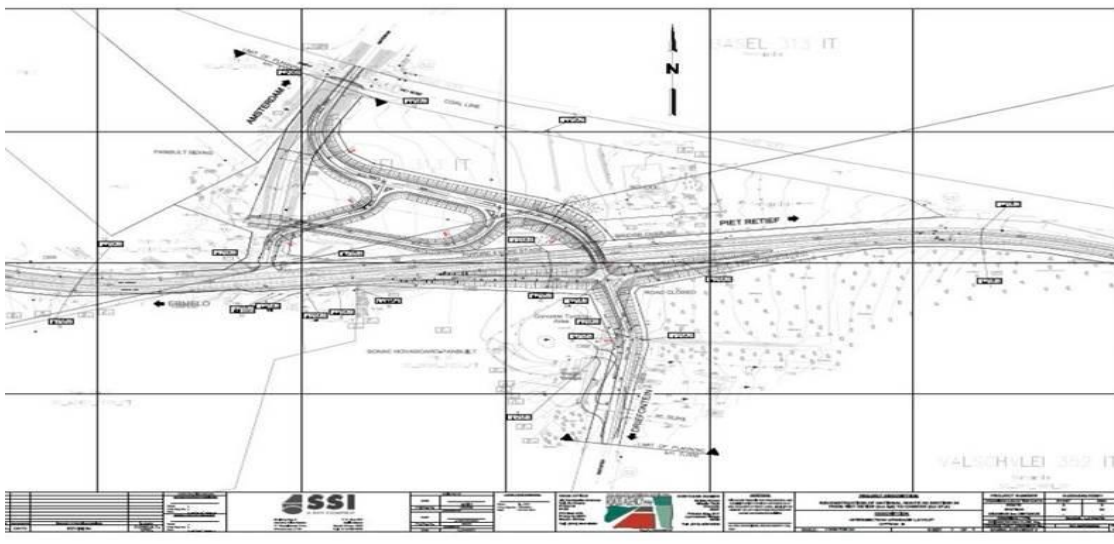
- This option includes the relocation of the N2-34 from its current position, 50m Northwards towards the Rail reserve/School.
- The length of the N2-34 relocation is approximately 2km thereafter it will connect into the existing road alignment.
- A four-legged four-way stop intersection at the siding and is named Intersection 1 (see schematic representation below).
- The intersection of N2 and P97/2 has left-in and left-out onto the N2 with a barrier at the median to prevent movements across the N2.

- A ramp scheme is proposed at the D803 intersection. This scheme is provided to allow extra heavy vehicles on the N2 to bypass the bridge which will be provided for the grade-separation.
- Intersection N2/D803 will be closed and a new intersection provided which makes use of the heavy vehicle ramps for local movements.
- Traffic that presently turns right into P97/2 from the N2 east will use the off ramp and turn right at the new intersection situated south of the bridge to reach P97/2.
- Traffic that turned right into the N2 from P97/2 will now have to cross the bridge (proposed link between P97/2 and D803) and turn right at the new intersection to use the on ramp to return to the N2.
- There is a barrier along the N2 restricting right turn access from eastern side along N2 onto P97/2 and right turns onto N2 from P97/2.
- Option A provides direct movement for trucks but has an at grade intersection with P97/2. The traffic analysis shows that this intersection will operate at level of service C.

3.3.2 Option B- Alternative Option

This option was explored as the preferred option in the previous EIA process. Many objections were received against this option from affected landowners. This is in view of the fact that the route was take up land from the businesses in one form or the other and affected more businesses than in Option A above.

Figure 5 – Option B (Refer to A for larger diagrams)



3.3.3 No Go option

The Kangra Coal (Pty) Ltd Mine is situated in Mpumalanga Province to the south -east of Ermelo and to the west of Piet Retief). Coal produced by the mine is transported by road from Maquasa East Plant to the Panbult Siding, a distance of approximately 32km. Most of this distance is on unpaved road and interlink vehicles/trucks with an average capacity of 30 tons each are used to transport coal. At Panbult Siding the coal is off-loaded from the trucks to a stockpile. The stockpiled coal is mechanically loaded onto railway trucks and then transported by rail to Richards Bay.

The coal mine is located to the south of the existing N2/34 highway and the Panbult Siding is to the north of this road. Heavy vehicles transporting the coal to the Panbult Siding from the coal mine enter and travel along the N2/34 between staggered intersections located 390m apart. SANRAL has identified the continuous movement of mine-related heavy vehicles transporting coal to Panbult Siding across the N2 as a safety issue which should be addressed through an upgrade of the Panbult Intersection.

Traffic studies have shown that heavy vehicles transporting coal from the Kangra Coal Mine to the Panbult Railway comprise a significant proportion of the total traffic on the D803, N2 and P97/2.

If nothing is done, an increase in traffic can be expected over the operation horizon of the mine in future. Space constraints, land use and ownership, and road safety concerns around the N2/34 will remain a permanent risk.

3.4 Required Services

3.4.1 Construction Site Camps

The road construction contractor would need to set up at least one site camp but this does not necessarily need to be near the route. The contractor may however prefer to use a fully serviced site at another location. The contractor will be encouraged to utilise already disturbed areas for construction camp purposes, in order to minimise cumulative impacts. It is likely that a number of construction camps would need to be established for the construction period.

3.4.2 Sewage

A negligible sewage flow is anticipated for the duration of the construction period. Chemical toilets will be utilised during construction, and the contractor will ensure regular treatment of these facilities. The toilets will be serviced regularly, as specified by the final site specific EMPr.

3.4.3 Solid Waste Disposal

All general solid waste will be collected at a central location at each construction site and will be stored temporarily until removal to an appropriately permitted landfill site in the vicinity of the construction site. The stockpiling of construction material and handling of hazardous waste will be managed as part of the EMPr.

3.4.4 Electricity

The project itself will not require electricity. Construction team might have temporary connection and supply of electricity from the existing network. Diesel generators will be utilised as an option for the provision of electricity.

4. DESCRIPTION OF THE RECEIVING ENVIRONMENT

In order to, with any level of confidence, assess the potential impacts of the proposed road upgrade on the receiving environment, one needs to first assess the baseline conditions found over the study area. Using this *Status Quo* one can then, broadly speaking, determine the likely impacts that will emanate from a specific development typology on a well-defined receiving environment.

4.1. Climate

Mkhondo Municipality normally receives about 746mm of rain per year, with most rainfall occurring during summer. The chart below shows the average rainfall values for Piet Retief per month. It receives the lowest rainfall (2mm) in June and the highest (140mm) in December. The monthly distribution of average daily maximum temperatures shows that the average midday temperatures for Piet Retief range from 19.4°C in June to 26.2°C in January. The region is the coldest during June when the mercury drops to 3.2°C on average during the night. Consult the chart below (lower right) for an indication of the monthly variation of average minimum daily temperatures.

Figure 6: Average midday temperature

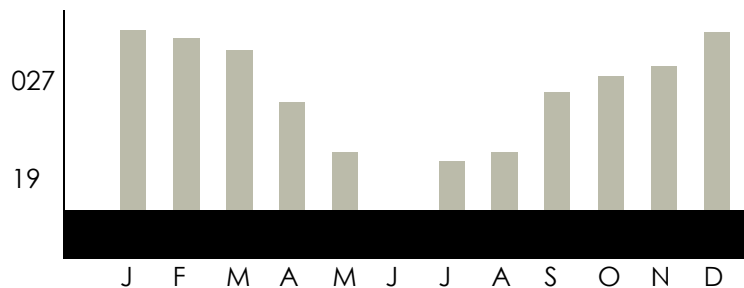
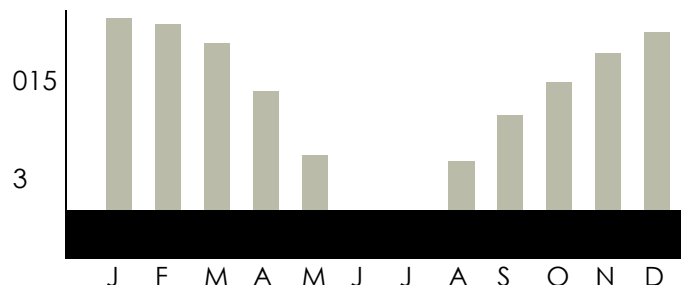


Figure 7: Average night-time temperature (°C)



Precipitation is the lowest in June, with an average of 11 mm. The greatest amount of precipitation occurs in December, with an average of 159 mm.

Figure 8: Average rainfall



4.2. Extreme Weather Conditions Prevalent

The study area is not located on a hurricane track or adjacent to a warm ocean. Therefore it is not expected that the site will experience a hurricane, or at least there is a very low probability. It is important to note the difference between a hurricane and hurricane force winds. The latter refers to a wind speed scale called the Beaufort Scale, where hurricane force winds are those with speeds above 118 km/h. This likelihood of this wind speed being exceeded (excluding the occurrence of tornadoes) has an estimated likelihood of about 0.1 per annum. No evidence of tornadoes could be found for the study area. This risk of tornadoes occurring in the study area is considered to be 1×10^{-5} per year. The average number of days with hail in the study area is 0.8 per year. A new Lightning Detection Network (LDN) recently (2006) set up by the SAWS in South Africa reports that the study area experiences between 1 and 2 lightning flashes per year per km².

The eastern part of Mpumalanga is part of the landmass in Southern Africa that is affected by cyclones, and in January 1984 Cyclone Domoina resulted in the highest observed rainfall in the area. This was the first cyclone centre to penetrate the country (and the only one to date). In Piet Retief, Domoina caused a maximum daily rainfall of 186 mm, with a total rainfall over three days of 511 mm. The risk of large rainfall and flood events occurring in the area is higher than regions in the moderate central parts of the country.

4.3. Topography, Soil and Geology

4.3.1 Topography

From a regional topographical perspective, the largest part of the Gert Sibande District Municipality, of which Mkhondo Local Municipality falls under, is situated on the Highveld Grasslands of Mpumalanga. The District generally features an undulating to strongly undulating landscape with intermittent hills. The intensity of the undulations generally increases from west to east, in the direction of the Drakensberg Escarpment and Swaziland. Once past the escarpment (in the general direction of Piet Retief), the landscape is characterised by undulating hills and lowlands. The far north-eastern and south-eastern extents of the District (in the direction of Barberton and Volksrust / Wakkerstroom) are characterised by the occurrence of low to high mountains.

Functionally, the general drop in altitude towards Piet Retief and Swaziland causes a change in climatic conditions. As a result, the eastern extents of the District feature a subtropical climate, with much higher mean annual precipitation and temperature levels than the central and western extents. The central and western extents generally feature mild summers with maximum temperatures rarely exceeding 25°C. Winters are cold with minimum temperatures often below zero. Frost is a common occurrence.

4.3.2 Soil

There are six broadly defined soil types present in the Gert Sibande District Municipality.

- Black and red strongly structured clayey soils with high base status;
- Red and yellow massive or weak structured soils;
- Red-yellow and greyish soils with low to medium base status;
- Rock with limited soils;
- Soils with a marked clay accumulation – strongly structured and a reddish colour; and
- Soils with minimal development, usually shallow on hard or weathering rock with or without intermittent diverse soils.

The most dominant soil patterns are the black and red clayey, and the red-yellow and greyish soils. With the exception of the Pixley Ka Seme Municipality (mainly

underlain by soils with a marked clay accumulation), these soils underlie the largest part of the Gert Sibande District. Apart from the red-yellow and greyish soils, the eastern extents of the District are also characterised by red and yellow massive or weak structured soils.

In general the soil and geological formations are fairly stable and do not pose significant geotechnical constraints to the region in terms of infrastructure development. The development costs associated with geotechnical conditions will however increase towards the eastern (border with Swaziland) and southern boundaries of the District.

In terms of agriculture, the soil potential or land capability of the District is extremely patchy, with various levels soil suitability. Generally, land within Gert Sibande is either moderately suitable, or not suitable at all for agricultural purposes. However, three broad areas of highly suitable land for agriculture purposes occur within the Municipality:

- The first area is located within the western corner of the District, in the general vicinity of Grootvlei, and stretching towards Villiers in the South.
- The second area is located within the central extents of the District, between Secunda and Standerton.
- The third area stretches in northwest – southeast band across the District, across large parts of the Albert Luthuli, Msukaligwa and Mkhondo Local Municipalities.

4.3.3 Geology

The majority of the District Municipality is underlain by the Karoo Super Group. The spatial distribution of the dominant underlying rock types forming part of the Karoo Super Group are as follows:

- Arenite dominates the majority of the Municipality.
- Dolerite is spread throughout the central extents of the Municipality (Govan Mbeki, Msukaligwa, Lekwa and Pixley Ka Local Municipalities) in the form of intrusions.
- Shale patches dominate southern extents of the Municipality (Thuthukani and Pixley Ka Seme Local Municipalities), with some isolated patches occurring in the Balfour / Greylingstad area within the Dipaleseng Local Municipality.

- Isolated patches of underlying Dolomite are found within the Badplaas area (Albert Luthuli Local Municipality), which has given rise to the development of a series of caves. More specifically, this phenomenon forms part of the eastern Malmani dolomite karst cave area. Importantly, these caves house a major component of the biodiversity found within the District, and hence need to be conserved.
- Quartz Monzonite dominates the north-eastern extents of the Municipality (Albert Luthuli Local Municipality).
- Granite dominates the south-eastern extents of the Municipality (Mkhondo Local Municipality), around Piet Retief.

4.4 Land Capacity and Surface Water

4.4.1 Land Capacity

The landscape is largely comprised of undulating hills and plains of the eastern edge of the Escarpment. It is a transitional unit between the Highveld and Escarpment, containing elements of both.

4.4.2 Surface water and Wetlands

Due to the topographical characteristic of the District, the District falls within three different catchment areas / Water Management Areas (WMAs), namely the Vaal River WMA, the Mfolozi / Pongola River WMA and the Tugela River WMA. In respect of the aforementioned WMAs, the following factors will impact on future development interventions:

- The south-western and central extents of the District are in a stage of very high “**water balance**”. This is positive, considering the spatial location of the District's major economic activity areas.
- Although The Usutu catchment rises on South Africa's eastern escarpment, drains most of Swaziland, and joins the Pongola river just before flowing into Mozambique. Like the Pongola, it is therefore an international river basin. The upper catchment has been harnessed by South Africa to transfer water to the Vaal system through the Westoe, Jerico, Morgenstond and Heyshope dams. In Swaziland the Usuthu River has very little developed storage but run-of river is highly utilised.
- The eastern extents of the District are in a stage of very low water balance. This is disconcerting, considering that the eastern extents of the District feature some of the highest population densities.

The major rivers traversing the municipal area include the Vaal, Klein Vaal, Waterval, Slang, Sandspruit, Olifants, Komati, Seekoeispruit, Usutu, Ngwempisi, Hlelo, Assegaai, Wit, and Phongolo. Stretches of both the Vaal and Phongolo River largely form the southern boundary of the District. These feed into a number of prominent dams distributed throughout the District, namely the Nooitgedacht, Vygeboom, Jericho, Hey/Shope, Grootdraai and a part of the Vaal Dam adjoining the south-western corner of the District.

Apart from the general drainage system, the district is known for its numerous wetlands and pans. These generally dominate the surrounding areas of **Chrissiesmeer** and **Wakkerstroom**. Importantly, wetlands not only contain high species diversity, but play a significant ecological role. Furthermore, wetlands function as landscape amenities by helping with hydrologic management, flood attenuation, storm water control, erosion control, and pollution control. Consequently, wetland areas should be avoided for development purposes.

4.5 Flora and Vegetation Ecology

Vegetation comprises short closed grassland with many forbs. Also a few scattered shrubs near rocky outcrops. Most of the District vegetation consists of a great expanse of ancient grassland which is thought to date back well before the break-up of Earth's original land mass (Gondwanaland) into continents and oceans. The grassland is largely a product of the climate in the rolling hills, escarpments, and valleys of the high plateau of southeast South Africa. Significantly, the grassland biome survives only in South Africa, and accounts for about 16.5 % of the nation's total land area. Importantly, for both ecological functioning and economic development, the upland grassland is a great collector of rain water for South Africa. The grasslands hold rainwater as ground water, or in the wetlands and seasonal pans. Water is then released slowly throughout the year, including the dry season.

More specifically, the grassland biome which characterise much of the District, largely consist of a number of broad veld types. Using Acocks' Veld Types of South Africa, the broad spatial distribution of the veld types constituting the grassland biome, as well as other veld types occurring within the District, may be described as follows:

- The western corner of the District (in the region of Balfour) is characterised by North-Eastern Sandy Highveld, Bankenveld and Turf Highveld.
- The central-western extents of the District (from Secunda to Volksrust) are dominated by Turf Highveld.

- The central extents (from Ermelo to Wakkerstroom) are dominated by Sandy Highveld, with an extensive area of Sour Veld occurring between Amersfoort and Wakkerstroom.
- The central-eastern extents of the District (from as far north as Badplaas and down to Piet Retief) are dominated by Sandy Highveld and Piet Retief Sour Veld. An extensive area of Sandveld occurs between Sheepmoor and Dirkiesdorp.
- The south-eastern corner of the District is characterised by Northern Tall Grassveld.

4.6 Air quality

Panbult is a semi-rural area with mining and agriculture as predominant land uses. Generally, the environment is impacted on by dust generated mining operations. The impact of dust is localised to the area of mining and up to a radius of between 500-1000m. Dust is heavy and tends to settle to the ground quicker after it has been created, hence the localised impact. The quality of air is generally poor, especially during windy periods.

4.7 Sensitive landscapes

Although the landscape is generally flat for most of the site area, there are a wetland within the vicinity of the project area. A wetland specialist study will be commissioned to identify impacts and mitigations thereof.

4.8 Wind data

According to the meteorological data from the South African Weather Service (SAWS) station in Piet Retief, the predominant wind direction is from the north-east. Winds from the northern sector are also predominant. During day-time, strong winds from the north and north-easterly sectors occur frequently. There is an increase in north easterly flow with a decrease in westerly and north-westerly air flow during the night-time.

4.9 Noise

Noise control must form part of the planning stage of any development. During the construction phase, noise may be generated as a result of construction related activities such as the use of machinery and equipment, and the movement of construction vehicles etc. These potential noise impacts must be mitigated, where possible. This will be investigated during the EIR phase of the project and suitable mitigation measures will be recommended. The current noise in the area is generated by movement of passenger cars and heavy duty trucks using the road. Mitigation measures must be implemented to ensure minimum impact to residents and other occupiers of land adjacent to the road.

4.10 Visual aspects

Scenic value can be described as the reaction to aesthetics of the environment as perceived by an individual or a group and therefore it is a very subjective perception. Although the area is heavily impacted on by historic mining activities, in terms of surrounding natural landscape compatibility, the proposed road construction will be out of character with the surroundings. It is therefore recommended that mitigations measures to lessen the significance of such impacts be proposed during the EIR phase of the project.

There is dark mine dusts which is generated during mining activities and create negative visual impacts to the surroundings.

4.11 Heritage

As per the National Heritage Resources Act, 1999 (Act No. 25 of 1999), a Notice of Intent to Develop (NID) should be completed for any proposed development, if the size of the development and associated infrastructure exceeds 0.5 ha. Should any heritage artefacts be uncovered, the relevant heritage agency will have to be appropriately consulted.

4.12 Dust

Vehicles travelling on exposed surfaces, earthworks as well as wind are the main generators of dust. The nuisance and aesthetic impacts associated with the dust generated during the construction phase should be minimal, if mitigating measures are implemented. Dust generated off the earth's surface is generally regarded as a nuisance rather than a health or environmental hazard. On a large scale dust will impair atmospheric visibility; however, in the context of the proposed activity, the impact of dust production on air quality should be minimal taking into account that effective dust suppression techniques are available and will be recommended during the EIR phase.

4.13 Socio-economic

Economic profile of the N11/N2 Corridor economy subsequent economic indicators provides insight to the performance of N11/N2 Corridor Economy.

The assessment serves to highlight local growth trends in the market. Future investment opportunities will be informed by this local assessment. These ten sectors are:

- General government services
- Community, social and other personal services
- Finance and business services

- Transport and communication
- Trade sector (Wholesale and retail; catering and accommodation)
- Construction
- Electricity and water
- Manufacturing
- Mining
- Agriculture, forestry and fishing

The main economic pillars of the Corridor Economy include:

- Manufacturing –16.6%;
- Financial & Business Services –14.7%
- Trade –13.24%
- Mining & quarrying –13.2%
- Transport, storage & communication –12.7%
- General government –12.1%

All the table below reflects the population of Mkhondo Local Municipality has grown with 29098 during the period of 2001 to 2011, the statistic show the growth or an increase on black African population.

Table 8: Gender distribution

GENDER	1996	2001	2011
FEMALE	51 167	75 163	89 719
MALE	47 800	67 912	82 263
TOTAL	98 967	143 075	171 982

The statistics show an increase of 14556 for females & 14151 for males.

Table 9: Age distribution statistics

AGE	1996	2001	2011
0-14	36 931	56 532	62 923
15-64	58 609	80 861	101 779
65+	3 930	5 684	7 280
TOTAL	99 470	143 077	171 982

The stats indicate a sharp increase in population of between the ages of 15-64.

Table 10: Race statistics

RACE	1996	2001	2011
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Black African	91 554	136 523	162 322
Coloured	502	587	894
Indian/Asian	1063	773	1417
White	6750	5195	6447

The black African population increased by 25799 from 2001 to 2011 due to in migration.

Table 11: Sex ratios

SEX RATIOS	1996	2001	2011
MALE	48 673 (48%)	67 913 (47%)	82 263 (48%)
FEMALE	51 714 (52%)	75 164 (53%)	89 719 (52%)

The stats indicate consistent gender composition of 48% males and 52% females.

Table 12: Unemployment rate

UNEMPLOYMENT RATE	1996	2001	2011
Employed	21 550	24 216	30510
Unemployed	10 524	20 476	17 123
General unemployment %	32.8%	45.8%	35.9%

5. DESCRIPTION OF ISSUES AND POTENTIAL IMPACTS

5.1 Identification of Potential Impacts

An important element of the scoping process is to evaluate the issues that were raised during the Public Participation Process (PPP) and technical processes and ensure that those identified as key issues are included within the scope of the EIA process. In addition, scoping allows for the identification of the anticipated impacts, particularly those that will require detailed specialist investigations.

This section of the report aims to predict the potential impacts likely to occur from the undertaking of the proposed activities. The activities that are associated with the construction, maintenance and operation of the proposed road and interchanges, which could potentially have an impact on the environment, are also highlighted in this section.

In addition, the Department of Environmental Affairs guide on assessing cumulative effects¹ describes that it is not practical to analyse the cumulative effects of an action on every environmental receptor. Therefore, for cumulative effects analysis to help the decision-maker and inform interested and affected parties, it must be limited to effects that can be evaluated meaningfully. This chapter will highlight potential impacts and issues that can be evaluated

5.2 Topography, Soils and Geology

The topography of the study area is very level, little impacts are anticipated. The terrain along the route does have some clays. No cumulative impacts would be relevant.

5.3 Land Use

Although some sections of the site earmarked for the road development are heavily degraded from previous and current land uses such as powerlines, water reticulation infrastructure, formal settlements, the servitude has very low potential to yield archaeological resources. However, there are roads, railway, industrial and associated

¹ DEAT (2004) *Cumulative Effects Assessment, Integrated Environmental Management, Information Series 7, Department of Environmental Affairs and Tourism (DEAT), Pretoria.*

infrastructures across the entire project area and as such the proposed Panbult Interchange will be additional to in situ developments already on the project area.

5.4 Heritage Impact Assessment

The literature review, field research and subsequent Heritage Impact Assessment (HIA) (See Annexure 13) confirmed that the project area is situated within a contemporary cultural landscape dotted with settlements that have long local history. Field survey was conducted during February 2016 which it was established that the affected project area is degraded by existing and previous land use activities and developments. Although historical and contemporary cultural sites exist along the route, none will be on the direct path of the proposed development. A graveyard was identified within the property of an informal dwelling house next to school. The graveyard belongs to the Motha family and during the public participation engagement, the family proposed as part of the interchange upgrade, the graveyard should be upgraded, fenced off and access granted to the family following to interchange upgrade. The HIA report concludes that the proposed Panbult Interchange Upgrade development may be approved by Heritage Authority to proceed as planned subject to conditional inclusion of heritage monitoring measures in the project EMP and chance finds procedures for the construction phase.

5.5 Noise Impacts

The resulting future noise projections indicated that the construction of the Panbult bridge as modelled for representation will comply with the Noise Control Regulations (GN R154), SANS 10103:2008 guideline and International Finance Corporation. No mitigation options are proposed or required.

5.5.2 Operational Phase

Projected rating levels used to illustrate the operational phase of the project were modelled using the methodology as proposed by SANS 10357:2004. The resulting future noise projections indicated that the operation of the Panbult bridge to comply Noise Control Regulations (GN R154), SANS 10103:2008 guideline and International Finance Corporation. However discussions with the main consultant highlighted the need to reduce existing noise levels at receptors (the school and the informal dwelling house). No proposed mitigation options or noise abatement measures proposed for the Panbult Bridge would result in a reduction of noise levels at receptors (proposed parapets, noise barriers, noise reducing pavement design, vehicle speed reduction etc.). Noise abatement measures to reduce existing baseline contributors would require focusing on

existing transport routes (existing N2 traffic, railway lines) and industrial zoned areas. Therefore the only mitigation options highlighted to the developer to help reduce existing noise levels (and is not mandatory) would be to relocate receptors NSD01 (St. Andrews Primary School) and the associated dwelling adjacent to the school to a quieter location away from the transport routes and industrial areas. Alternatively the developer could consider implementing a berm/acoustical screen directly adjacent to the receptors and surrounding the property.

5.6 Social Impact

The value of infrastructure investment lies not only in the direct benefits created, but especially in terms of downstream benefits and opportunities unlocked through enhanced efficiencies created. In this context, the Panbult Interchange upgrade not only creates construction and infrastructure-related opportunities, but will also unlock other downstream development opportunities in the local economy.

It was indicated through interviews and engagements with local stakeholders that some losses on local level can be expected due to the proposed Panbult Interchange upgrade, e.g.:

- loss of productive plantation land for certain affected land owners,
- increased operational costs to certain land owners due to increased travelling distances due to the new interchange design,
- the closure of the existing general store and fuel station, and
- the relocation of the St Andrews Primary School and the Motha family residence.

The specialist socio-economic study (See Appendix 12) concludes that given the position of the Panbult Interchange as part of an intra-regional and interregional distribution network of goods for national and international consumption, the economic impact analyses indicate a greater gain for the local, regional, and national economy in relation to the estimated local losses.

The annual operational gains on account of new business opportunities calculate to approximately R40 million per annum (plus growth on account of forecast future traffic growth). The nett economic gain over a 10-year forecast period equates to R325million.

If the proposed Panbult Interchange Upgrade – and associated downstream development opportunities – were not to occur, the economic benefits would be lost to

the local, district, provincial and national economies. Non-investment in the Panbult Intersection road infrastructure will, in all probability, strain potential efficiency gains and future economic growth along the N11/N2 (SIP 1) Corridor.

5.7 Wetland Impact

In the results obtained, the presence of areas with varying EIS and PES were observed along the route with some areas observed like being in good condition and ecologically important, while other areas were observed as being more significantly modified and of low ecological importance. The current wetland crossings deserve the highest level of protection and consideration.

In the present state the features of the current wetland showed different types of transformation with specific impacts originated from impoundment, altered flow and inundation caused by rain and increased sediment loading. The findings showed that the negative impacts of the proposed construction of N2 interchange Panbult will be experienced during the preconstruction and construction phase of the project will have a very low impact. It was projected that, the impacts during the preconstruction and construction phase could be well mitigated and this will have a negligible impacts in the construction and operational phase.

In the operational phase, the impact is falling under very low category, and could be regarded as negligible. The implementation of the project and plans should be institutionalised through regular monitoring and auditing. Based on the assumption that such project and plans for the proposed N2 interchange Panbult will be implemented in accordance with national and international industry standards, it is the opinion of the wetland specialist that the proposed project should be authorised.

Although the proposed N2 Panbult interchanges upgrade for SANRAL it will be operational for approximately 40 years. The treatment of impacted wetland is expected to continue well behind the life of N2 Panbult interchange.

6. PUBLIC PARTICIPATION PROCESS

6.1 Approach

Public Participation is the cornerstone of any EIA. The principles of NEMA as well as the EIA Regulations govern the EIA process, including public participation. These include provision of sufficient and transparent information on an on-going basis to stakeholders to allow them to comment, and ensuring the participation of previously disadvantaged people, women and the youth.

The public participation process is primarily based on two factors; firstly, on-going interaction with the environmental specialists and the technical teams in order to achieve integration of technical assessment and public participation throughout. Secondly, to obtain the bulk of the issues to be addressed early on in the process, with the latter half of the process designed to provide environmental and technical evaluation of these issues. These findings are presented to stakeholders for verification that their issues have been captured and for further comment. Input into the public participation process by members of the public and stakeholders can be given at various stages of the EIA process. Registration on the project can take place at any time during the EIA process up until the Final EIA report is submitted to Department of Environmental Affairs (DEA). There are however set periods in which comments are required from Interested and / or Affected Parties (I&APs) in order to ensure that these are captured in time for the submission of the various reports. The comment periods during the Scoping phase were implemented according to NEMA EIA Regulations.

6.2 Aims of the Public Participation Process (PPP)

The primary aims of the PPP are:

- To inform interested and affected parties (I&APs) and key stakeholders of the proposed development.
- To initiate meaningful and timeous participation of I&APs.
- To identify issues and concerns of key stakeholders and I&APs with regards to the proposed development
- To promote transparency and an understanding of the proposed project and its potential environmental impacts.
- To provide information used for decision-making.
- To provide a structure for liaison and communication with I&APs and key stakeholders.

- To assist in identifying potential environmental impacts associated with the proposed development.
- To ensure inclusivity (the views, needs, interests and values of I&APs must be considered in the decision-making process).
- To focus on issues relevant to the project and issues considered important by I&APs and key stakeholders.
- To provide responses to I&AP queries.
- To encourage co-regulation, shared responsibility and a sense of ownership.

In addition to the guidance of the PPP in the EIA Regulations, every effort was also made to conform to the requirements of the Promotion of Administrative Justice Act 2000 (Act 3 of 2000), which ensures that Lyma acts in the best interests of the public to make sure that the public has free access to information regarding developments that may have an impact on I&APs.

5.5.3 Interested and Affected parties

It is likely that the bulk of the route will fall outside the existing SANRAL road reserve. Land must be acquired under a land acquisition process which directs negotiations with landowners. The land acquisition can only commence once environmental authorisation has been obtained and once the detail geometric planning for the proposed upgrade is complete. It is important to indicate the properties on which the development will take place in order to give context and highlight parcels of land to be affected by the project. The following properties are affected by the development/upgrade:

- Portion 7 of Farm Valschvlei 352;
- Remaining extent of Farm Valschvlei 352;
- Portion 16 of Farm Valschvlei 352;
- Portion 1 of Farm Valschvlei 352;
- Portion 2 of Farm Basel 313;
- Remaining extent of Farm Basel 313;
- Remaining extent of Portion 5 of the farm Valschvlei 352
- Remaining extent of Farm Basel 313;

6.3 The Role of Registered Interested and Affected Parties

The EIA regulations emphasise the importance of public participation. In terms of the EIA regulations, registered interested and/or affected parties:

- May participate in the application process;
- May comment on any written communication submitted to the competent authority by the applicant or environmental consultant;
- Must comment within the timeframes as stipulated by the EIA Regulations;
- Must send a copy of any comments to the applicant or Environmental Assessment Practitioner (EAP) if the comments were submitted directly to the competent authority; and
- Must disclose any direct business, financial, personal or other interests that the person has in the application being granted or refused.

6.5. The Role of the EAP

Further, in terms of the EIA regulations, the EAP:

- Manages the application process;
- Must be independent;
- Must undertake the work objectively – even if this results in views and findings that are not favourable to the applicant;
- Must disclose material information that may influence the decision; and
- Must conduct a public participation process.

The following actions will be taken upon receiving comments/queries/issues:

- The contact details provided will be entered into the project database for use in future notifications.
- Confirmation of receipt of comments will be done by email or letter.
- Issues raised will be addressed comments in the Issues & Response Report.

6.6. Overview of the Public Participation Process to Date

The public participation process was initiated by an inception meeting held on 02 June 2015 to inform key stakeholder of the process to be followed during the EIA and to identify additional other key stakeholders at early stages of the process. Following that, in November 2015, a Background Information Document (BID) (See attached Annexure 6)

was circulated via E-mail and through hand deliveries to all relevant stakeholders including affected and adjacent landowner, the Ward Councillors and the Chief for the area. Site notices were placed at strategic locations nearby the proposed interchange site; including roadside poles and nearby shops (See Appendix 4). An advertisement was placed on the November 17th 2015 edition of the Lowvelder newspaper (See attached Annexure 5), requesting all interested and affected parties I&APs to provide comments on the proposed project. A total of seven I&APs registered their interest in the project. This process was followed by circulation of letters inviting all (I&APs) (Appendix 7) to attend a public meeting and for the review of the Draft Scoping Report. The public meeting was held on 16 February 2016 at the Sonae Novorbord Canteen area. Copies of the Draft scoping report was circulated to all registers I&APs and all the stakeholders who attended the public meeting. A report on issues and responses given during the public meeting was consolidated as reflected below under the public meetings section. . The stages that formed part of the public participation process to date for this proposed project are reflected in detail below:

6.6.1 Authority Consultation

The competent authority, which is the Department of Environmental Affairs (DEA), is required to provide an environmental authorization (whether positive or negative) for the project. The DEA was consulted from the outset of this study, and has been engaged throughout the project process. Authority consultation included the following activities:

- A pre- consultation was held with the DEA officials responsible for the EIA application, and the regional office of the Department of Water Affairs was done in order to establish the following:
 - The Specific Listed Activity (ies) and details of the EIA process to be followed. Specific EIA process requirements of the competent authority and public participation process appropriate for the proposed activity,
 - Timeframes associated with authority decision-making for key stages of the EIA process,
 - Process for submission of any Water Use Licence Application (WULA) and
 - Other permits as may be required.
- Presentation was made to the identified Mkhondo Municipality Stakeholders on 02 June 2015, in which also in attendance were representatives from the Department of Education, the Ward Councillor for the area, the Chief's representative, the School

Principal and the Anglican Church on behalf of the St Andrews Primary School on the proposed EIA process.

6.6.2 I&APs Database and Notification of the Identified IAPs

The database of adjacent and affected landowners had been developed in the previous Basic Assessment Study. During the pre-consultation meetings held on 02 June 2015, additional I&APs were identified. I&APs were also identified through consultation with the Ward Councillor. The contact details of all identified I&APs are updated on the project database, which is included in Annexure 8. This database is being updated on an on-going basis throughout the EIA process.

6.6.3 Announcement of the Opportunity to Become Involved

The opportunity to participate in the EIA was announced in November 2015 in the following ways:

- A briefing paper or Background Information Document (BID) for the project was compiled in English (refer to Annexure 6). The aim of this document is to provide a brief outline of the application and the nature of the development. It is also aimed at providing preliminary details regarding the EIA process, and explains how I&APs could become involved in the project.
- The briefing paper was distributed to all identified I&APs and stakeholders, together with a registration / comment sheet inviting I&APs to submit details of any issues, concerns or inputs they might have with regards to the project. Lyma distributed 20 BIDs directly to I&APs in the Panbult area on 17 November 2015.
- Newspaper Advertisement placed in the *Lowvender* newspaper on Friday 17 November 2015 inviting I&APs to register with and submit their comments to consultant. A copy of this advertisement has been included to this application as Annexure 4.
- Site Notices informing the surrounding communities and immediate adjacent landowners of the proposed development. Lyma consulting placed site notices within the boundaries of the study area. Please refer to Annexure 4 for an example of the Site Notices that were placed.
- The Draft Scoping Report and Plan of Study document was circulated to registered I&APs and also placed in public places from 16 February 2016 for a period of 30 days. The report will also be submitted to relevant authorities (DEA, DOE, DWA, Mpulamanga Department of Economic Development Environment

and Tourism and Mkhondo Local Municipality) to comment for a period of 30 days in line with requirements for the public participation process.

6.6.4 Public participation Meetings

6.6.4.1 Inception Meeting held on 02 June 2015

The public participation process for the EIA was initiated on the in February 2015 with an inception meeting with the school, Department of Education, the Anglican Church (on behalf of St Andrews Primary School) the school Principal, the Ward Councillor in the area and other stakeholders. The purpose of the meeting was to inform these key stakeholders of the EIA process to be undertaken for the proposed upgrading of the Panbult Interchange and to identify other key stakeholders. The minutes of the meeting are attached as Appendix 9.

6.6.4.2 Public Consultation Meeting on the Draft Scoping Report held on 16 February 2016

The public meeting was held on 16 February 2016 at the Sonae Novorbord Canteen area. Copies of the Draft Scoping Report were circulated to all registers I&APs and all the stakeholders who attended the public meeting (See minutes of the meeting attached as Annexure 9). A PowerPoint presentation was given by the Project Engineer on the background of the project and another presentation by the EAP outlining the EIA process and soliciting issues to be raised by the I&APs. Below is a summary of the issues raised by the I & APs during the meeting and preliminary responses provided by the Project Engineer and the EAP. Outstanding issues that could not be addressed during the meeting have been taken forward and will be addressed as part of the EIR.

Table 13: Issues and Responses Table

No.	Question	Response
1.	Will farmers and tractors have right of way?	The interchange designs includes a right of way for farmers to access their properties. The Project Engineer took the I&APs through the layout and proposed access points.

2.	What will the speed limit be along the N2? Are there any medians proposed on the road?	The speed limit will be 120 km/hr. The design team is currently exploring different designs of medians.
3.	Will there be access to the Kangra Coal sidings?	Yes, although access to the station will have to be changed. Further negotiations will take place between the mine and Sanral in this regard.
4.	Where will the tarring of the upgraded Driefontein Road end and who is responsible for the tarring of the road?	The Project Engineer pointed out on the design layout where the upgrading of road ends. The tarring ends where the Provincial Road connects with the National Road.
5.	How will tractors (and other slow moving vehicles) belonging to local farmers be accommodated with the upgrade of the N2 road? There is a concern by the Farmer's Association (representing approximately 150 in number) that tractor movement between Ermelo, Iswepe and Piet Retief will be compromised by the proposed interchange.	The proposed interchange design provides for a right of way for local farmers as well as access to all businesses in the area. A separate public consultation process will have to be undertaken pertaining to the proposed upgrade of the N2 road at large.
6.	How will the pedestrian's safety be guaranteed with the upgrade?	The layout includes a pedestrian bridge. In addition, the Engineering team is currently exploring alternative barriers along the median that will ensure that pedestrians do not cross over the N2.
7.	What about the safety of the people walking along the road and across the proposed bridge in view of the busyness of the road high number of trucks (approximately 300 trucks daily)? Will there be someone to monitor pedestrians crossing the bridge?	The bridge will meet approved standards as other pedestrian bridges throughout the country. It will not be possible to have someone monitoring the use of the bridge 24/7.

8.	There is a concern over people crossing over to the shop, especially the school children	There are processes underway in consultation with all relevant stakeholders exploring the relocation of the school. In terms of other pedestrians, there will be barriers across the median which will make it impossible for a pedestrian to cross over without using the pedestrian bridge. Other solutions will also be explored and incorporated in the design
9.	How do we confirm if we have been registered as stakeholders?	All the people who were invited to attend the meeting have been registered as stakeholders, over and above a call for registration of I&APs during the advert period.
10.	When will the school relocation process start?	The process is running parallel to the EIA process.
11.	Will the draft design be communicated to everyone?	Yes. The concerns regarding the design may also be submitted in writing to EAP on the form provided in the Scoping report.
12.	The Department of Education (DOE) mentioned that they don't object to the school relocation provided Sanral carries the relocation costs	Noted. Palesa also mentioned that Sanral plans to have a meeting soon with DOE to address the matter.
13.	Has the design team taken into consideration the option of underground tunnelling below the road to provide safe access/ right of way to be used by the security?	An underground tunnel presents safety and crime risks. In addition, the costs for tunnelling, drainage and providing of adequate lighting are not viable.
14.	Who carries the cost of extra distance created by the upgrade?	The matter will be taken up with Sanral and a report back will be given

15.	How will the community get access between Iswepe/Amsterdam and Vuka?	The is a 7km public access road provided for in the current design
16.	Why is the road being upgraded when there have not been accidents recorded in the recent past?	The movement and crossing of trucks on the N2 national road remain a risk to motorists and pedestrians
17.	What is the maximum speed limit for trucks using the Driefontein road?	The speed limit will have to be reduced for safety reasons. The Project Engineer brought forward a suggestion for the establishment of a 3 way stop connecting the public road from Vuka-Armerfoort to Driefontein. The right and left turn lanes will be introduced at the junction.
18.	How will the taxi pick up point guarantee pedestrian safety with the road upgrade?	The Engineering team to consider this risk in the design
19.	The income of the shop owner is going to be adversely impacted by the proposed interchange. The shop owner proposed for his shop to be moved to the other side of the N2.	The matter to be raised with Sanral; to be addressed as part of the land acquisition process.
20.	What process is being followed for land acquisition?	Sanral is undertaking a parallel land acquisition process.
21.	There proposed intersection will have an impact on a wetland.	A specialist wetland study is being undertaken as part of the EIA to access the potential risks and impacts on the wetland.

6.6.4.3 Notification of intended resubmission of the Scoping Report

In view of the lapse of the submission period, I&APs were informed of the intended resubmission of the Scoping Report following the lapse in the period for submission as per the legislative timeframes. In terms of Regulation 21(1) of the EIA Regulations (2014), a Scoping Report, which has been subjected to public participation of at least 30 days, should be submitted within 44 days of receipt of the application by the Competent Authority.

Regulation 21 (2) sub-section (b) gives the applicant an opportunity for resubmission subject to the following:

- the findings of the scoping report are still valid and the environmental context has not changed;
- that Regulation 16 (General Application Requirements) is complied with, and;
- such application is accompanied by proof that registered interested and affected parties, who participated in the public participation process conducted as part of the previous application, have been notified of this intended resubmission of the application prior to submission of such application.

The notification was sent out to all registered IAPs and in addition the IAPs were given an opportunity to comment further on the Draft Scoping Report for a period of 30 days from August 2016 to 16 September 2016 and again from 06 December 2016 to 15 January 2017 (See Annexure 10). No further comments were received from the IAPs.

7. DESCRIPTION OF THE NEED AND DESIRABILITY

The table below includes answers relevant to the proposed project.

Table 14: Need and Desirability

NEED ('Timing'):
<p>Question 1: Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved Spatial Development Framework (SDF) agreed to by the relevant environmental authority? (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP).</p> <p>Answer: Yes</p>
<p>Question 2: Should development, or if applicable, expansion of the town/area concerned in terms of this land use (associated with the activity being applied for) occur here at this point in time?</p> <p>Answer: No.</p> <p>The town will not expand Immediately, but Yes the activity may result in further expansion of the area due to improved access</p>
<p>Question 3: Does the community/area need the activity and the associated land use concerned (is it a societal priority)? This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate)</p> <p>Answer: Yes</p> <p>The purpose of the upgrading is to improve the road safety on the N2-34 at Panbult, Mpumalanga. Currently, coal is transported from Kangra Coal in Driefontein to the Panbult Rail station. The coal transportation vehicles have to travel along a staggered intersection located on the N2-34. The proposed upgrading of the Panbult Interchange will remove this staggered intersection with an overpass structure and ramps on the southern side of the N2-34.</p>
<p>Question 4: Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development?</p> <p>Answer: Yes</p>

The road is funded by SANRAL, SANRAL has all the resources needed to ensure this project reach fruition.

Question 5: Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)?

Answer: Yes

The road is funded by the province (SANRAL). The municipality will be able to approve development applications based on the improved access that will result from the proposed road.

Question 6: Is this project part of a national programme to address an issue of national concern or importance?

Answer: Yes

The National Spatial Development Perspective as initiated with the aim of not only providing a strategic assessment of the spatial distribution and socio-economic characteristics of the South African population, but also gaining an understanding of the distribution of economic activity and potential across the South African landscape. In order to overcome the spatial distortions of apartheid, infrastructure investment and development spending should primarily support localities that are growth nodes in South Africa and thus create regional gateways to the global economy.

DESIRABILITY ('placing')

Question 7: Is the development the best practicable environmental option for this land site?

Answer: to be determined by EIR

The specialist studies to be conducted during the EIR phase of the project will give a clear indication of environmental options.

Question 8: Would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF as agreed to by the relevant authorities.

Answer : No

Question 9: Would the approval of this application compromise the integrity of the existing environmental priorities for the area (e.g. as defined in EMFs), and if so, can it be justified in terms of sustainability considerations?

Answer : No

<p>Question 10: Do location factors favour this land use (associated with the activity applied for) at this place? (this related to the contextualisation of the proposed land use on this site within its broader context)</p> <p>Answer : Yes</p> <p>Proposed road expansion is linked to an existing road infrastructure, the purpose of this activity is to provide relief to existing road.</p>
<p>Question 11: How will the activity or land use associated with the activity applied for, impact on sensitive natural and cultural areas (built and rural / natural environment)?</p> <p>Answer: The impacts can be mitigated. The EIR process will determine the potential impact on the environment and if negative impacts are identified, mitigation measures will be proposed. To date, the specialist studies have shown that social impact is an issues that requires proper mitigation measures to be implemented.</p>
<p>Question 12: How will the development impact on people health and wellbeing (e.g. in terms of noise, odours, visual character and sense of place, etc)</p> <p>Answer: No</p> <p>Negative impacts are anticipated regarding visual, noise or odours during the operational phase of the project. Exhaust fumes may be distributed into the area where at present these vehicles make use of other roads that are further away from the study area</p>

<p>Question 13: Will the proposed activity or the land use associated with the activity applied for, result in unacceptable opportunity costs?</p> <p>Answer: Social issues need to be assessed during the EIA phase.</p>
<p>Question 14: Will the proposed land use result in unacceptable cumulative impacts?</p> <p>Answer: No the project is not expected to have an unacceptable cumulative impact. The project will result in positive impacts in terms of road network, circulation and infrastructure improvement. However, the EIAR will determine the full extent of impacts and propose mitigation measures if required.</p>

At the end of the review period of the Draft Scoping Report, any additional questions from stakeholders and I&AP's will be captured in the Issues and Response Report (IRR) which will form part of the Final Scoping Report. Where applicable, these will be added and responded to in the above table.

8. IMPACT ASSESSMENT SCOPING PHASE

8.1. Impact Assessment Criteria

The assessment methods used are in accordance with the requirements of the EIA Regulations 2014 published in terms of NEMA and are considered adequate for the purposes of assessing the impacts associated with the proposed development, the impact assessment is required to provide a description and assessment of the significance of any environmental impacts, including—

(i) cumulative impacts, that may occur as a result of the undertaking of the activity or identified alternatives or as a result of any construction, erection or decommissioning associated with the undertaking of the activity; (ii) the nature of the impact; (iii) the extent and duration of the impact; (iv) the probability of the impact occurring; (v) the degree to which the impact can be reversed; (vi) the degree to which the impact may cause irreplaceable loss of resources; and (vii) the degree to which the impact can be mitigated

8.1.1. Nature of impact

This is an appraisal of the type of effect the proposed activity would have on the affected environmental component. Its description includes the receiving environment and how it is impacted.

8.1.2. Extent of the impact

Extent defines the physical extent or spatial scale of the impact. The impact could be:

- Site specific: limited to the site;
- Local: limited to the site and the immediate surrounding area (1-10km);
- Regional: covers an area that includes an entire geographic region or extends beyond one region to another;
- National Scale: Across national boundaries and may have national implications.

8.1.3. Duration

The lifetime of the impact; this is measured in the context of the life-time of the proposed base.

- Short term (0-5 years): The impact will either disappear with mitigation or will be mitigated through natural process in a span shorter than any proposed phases.
- Medium term (5-15 years): The impact will last up to the end of the phases, where after it will be entirely negated.

- Long term (16-30): The impact will continue or last for the entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter.
- Permanent: The only class of impact, which is considered non transitory. Mitigation, either by man or natural process, will not occur in such a way or in such a time span that the impact can be considered transient.

8.1.4. Intensity/Magnitude

This is a relative evaluation within the context of all the activities and the other impacts within the framework of the project. Is the impact destructive, or benign? Does it destroy the impacted environment, alter its functioning, or render it slightly altered? These are rated as:

- None: No known impacts
- Low: The impact alters the affected environment in such a way that the natural processes or functions are not affected.
- Medium: The affected environment is altered, but function and process continue, albeit in a modified way.
- High: Function or process of the affected environment is disturbed to the extent that it temporarily or permanently ceases.

8.1.5. Probability of occurrence

This describes the likelihood of the impacts actually occurring. The impact may occur for any length of time during the life cycle of the activity, and not at any given time. The classes are rated as follows:

- Improbable: The possibility of the impact occurring is very low, due to the circumstances, design or experience.
- Probable: There is a possibility that the impact will occur to the extent that provisions must be made to mitigate the impacts.
- Highly probable: It is most likely that the impacts will occur at some or other stage of the development. Plans must be drawn up before the undertaking of the activity.
- Definite: The impact will take place regardless of any prevention plans, and thus mitigatory actions or contingency plans must be relied

8.1.6. Significance with and without mitigation

Without mitigation measures (WOMM):

- Low: the impact is of little importance, but may require some mitigation

- Medium: the impact is of importance and is therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable levels
- High: the impact is of major importance and mitigation is essential. Failure to mitigate, with the objective of reducing the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable.

With mitigation measures (WMM):

- Low: the impact will be mitigated to the point where it is of limited importance
- Medium: despite the successful implementation of the mitigation measures that reduce the negative impacts to acceptable levels, the negative impact remains significant. However, taken within the overall context of the project, the persistent impact does not constitute a fatal flaw
- High: The impact is of major importance. Mitigation of the impact is not possible on a cost-effective basis. The impact is regarded as high importance and taken within the overall context of the project, is regarded as a fatal flaw. An impact regarded as high significance, after mitigation could render the entire development option or entire project proposal unacceptable.

8.2. Assessment Tables

The most pertinent issues that were raised during the Scoping Phase are:

Ecological - Disturbance of natural areas in particular wetlands

Health and safety

Maintenance and rehabilitation

Socio-Economic issues - loss of farming infrastructure and land

Heritage artefacts – grave and cemetery

These particular issues will be investigated in more detail during the EIA Phase. Specialist studies will include reference to the issues that have been raised by the public and stakeholders during this Scoping Phase. The assessment of impacts will be presented in this Scoping Report in the format of tables, showing the criteria that were used to establish the significance rating of each.

Note: For most of their alignments, the two alternatives will have similar potential to disturb areas and result in impacts on the receiving environment. The only difference in the

alignments is that the Alternative 1 avoids certain land use features e.g. the graves, buildings and dairy farm.

8.2.1. Ecological Impact Assessment:

Table 15: Loss and Disturbance Vegetation

Loss & disturbance of indigenous vegetation due to clearing of the footprint area		
<p>Nature: Proposed project will result in the clearance of vegetation, a detailed Ecological Study will be undertaken during the EIA stage (see attached Plan of Study for EIA).</p> <p>Impacts related to the loss or disturbance of natural vegetation would be similar for Alternative 1 and 2.</p>		
NO GO Option	A No Go Option will prevent loss or disturbance of indigenous vegetation.	
CONSTRUCTION PHASE		
Rating of Impacts	Without mitigation	With mitigation
Probability	Definite	Definite
Duration	Medium-term	Short Duration
Extent	Limited to Site	Limited to Site
Magnitude	Moderate	Low
Significance	Moderate	Moderate
Status (positive or negative)	Negative	Negative
Reversibility	Moderate	High
Irreplaceable loss of resources?	Low	Low
Can impacts be mitigated?	Yes	
OPERATIONAL PHASE		
<p>NO impact expected during operation of the road infrastructure. No further clearance would be required. However, any future extensions of the road should be carefully planned as to avoid the wetland on site</p>		
<p>Mitigation:</p> <ul style="list-style-type: none"> The main mitigation measures entail limiting the impact, by restricting the construction activities to previously disturbed areas and to minimise the work area and servitude in the rocky and moist grassland to the absolute minimum. 		

<ul style="list-style-type: none"> A search for more individuals of the Near Threatened species should be undertaken. If no additional plants are recorded, the DEA should be consulted on the possibility of relocating the one confirmed individual to suitable habitat in a conserved area.
<p>Cumulative impacts: Expected to be low to medium. Much of the vegetation on the site is disturbed as a result of human activities and highly sensitive habitat was not identified.</p>
<p>Residual Risks: Low risk anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.</p>

Table 16: Proliferation of Alien Plant Species

Proliferation of Alien plant species		
<p>Nature: Alien invasive species will quickly encroach into disturbed areas, particularly adjacent to drainage areas.</p> <p>Alternatives 1 & 2 will have similar potential to disturb areas that could result in the spread of alien invasive species.</p>		
NO GO Option	A No Go Option will not lead to the accelerated encroachment of alien invasive species since no additional areas will be disturbed for the project.	
CONSTRUCTION PHASE		
Rating of Impacts	Without mitigation	With mitigation
Probability	Definite	Highly probable
Duration	Medium-term	Medium-term
Extent	Limited to Local Area	Limited to Local Area
Magnitude	High	Moderate
Significance	High	Moderate
Status (positive or negative)	Negative	Negative
Reversibility	Moderate	High
Irreplaceable loss of resources?	Low	Low
Can impacts be mitigated?	Yes	
OPERATIONAL PHASE		
No impact expected during operational phase		

<p>Mitigation:</p> <ul style="list-style-type: none"> • An alien invasive management programme must be incorporated into the Environmental Management Programme; • Ongoing alien plant control must be undertaken along the road servitude route; • Areas which have been disturbed will be quickly colonised by invasive alien species. An ongoing management plan must be implemented for the clearing/eradication of alien species. • Monitor all sites disturbed by construction activities for colonisation by exotics or invasive plants and control these as they emerge.
<p>Cumulative impacts: Expected to be moderate, should mitigation measure not be implemented. Alien invader plant species pose an ecological threat as they alter habitat structure, lower biodiversity (both number and “quality” of species), change nutrient cycling and productivity, and modify food webs.</p>
<p>Residual Risks: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.</p>

Table 17: Loss faunal habitat and ecological structure

Loss of faunal habitat and ecological structure		
<p>Nature: The construction phase and operational phase of the road development will result in the loss of faunal habitats within the area. This impact relates to the complete removal or partial destruction/disturbance of existing vegetation by machinery and workers, impacting directly on the ecological condition of natural vegetation and habitat availability. These activities will have an impact on foraging and breeding ecology of faunal species. Loss of vegetation generally affects nutrient cycles, removes the organic litter layer and results in habitat fragmentation and destruction of wildlife corridors.</p> <p>Impacts related to the loss or disturbance of natural vegetation would be similar for Alternative 1 and 2.</p>		
NO GO Option	A No Go Option will not result in the loss of faunal habitats or ecology in the area.	
CONSTRUCTION PHASE		
Rating of Impacts	Without mitigation	With mitigation
Probability	Definite	Definite
Duration	Short Duration	Short Duration

Extent	Limited to Local Area	Limited to Local Area
Magnitude	High	Moderate
Significance	High	Moderate
Status (positive or negative)	Negative	Negative
Reversibility	Moderate	High
Irreplaceable loss of resources?	Low	Low
Can impacts be mitigated?	Yes	
OPERATIONAL PHASE		
Operation of the road and intersections will not impact directly on vegetation and habitat of the area. Any future extensions of the road (next phases) should be carefully planned as to wetlands.		
Mitigation:		
<ul style="list-style-type: none"> • All construction and maintenance activities must be carried out according to the generally accepted environmental best practice and the temporal and spatial footprint of the development must be kept to a minimum. • The boundaries of the development footprint areas are to be clearly demarcated and it must be ensured that all activities remain within the demarcated footprint area. • Edge effects of all construction and operational activities, such as erosion and alien plant species proliferation, which will affect faunal habitats adjacent to the development area, need to be strictly managed. 		
<ul style="list-style-type: none"> • Any natural areas beyond the development footprint, which have been affected by the construction activities, must be rehabilitated using indigenous plant species. • Education and awareness campaigns on faunal species and their habitat are recommended to help increase awareness, respect and responsibility towards the environment for all staff and contractors. 		
Cumulative impacts: Expected to be minimal. It is not envisaged that any Red Data species will be displaced by the habitat transformation that will take place as a result of the construction and operation of the proposed development. The impact on smaller, non-Red Data species that are potentially breeding in the area will be local in extent, in that it will not have a significant effect on regional or national populations.		
Residual Risks: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.		

Table 18: Direct impact on faunal communities

Direct impact on faunal communities		
<p>Nature: Activities involving the clearing/harvesting of natural vegetation will result in the loss of faunal species. Faunal diversity within the study area has already been negatively impacted as a result of historic and on-going disturbances associated with agriculture and housing developments.</p> <p>The expected impact is similar for both alternatives.</p>		
NO GO Option	A No Go Option will not change the status quo of faunal communities within the area.	
CONSTRUCTION PHASE		
Rating of Impacts	Without mitigation	With mitigation
Probability	Definite	Definite
Duration	Short Duration	Short Duration
Extent	Limited to the Local Area	Limited to the Local Area
Magnitude	High	Moderate
Significance	High	Moderate
Status (positive or negative)	Negative	Negative
Reversibility	Low	Moderate
Irreplaceable loss of resources?	Moderate	Low
Can impacts be mitigated?	Yes	
OPERATIONAL PHASE		
Operation of the road and intersections will not impact directly on fauna of the area.		
<p>Mitigation:</p> <ul style="list-style-type: none"> • It is recommended that a speed limit of 30km/h is implemented on all roads running through the study area during all phases in order to minimise risk to fauna from vehicles. • No trapping or hunting of fauna is to take place. Access control must be implemented to ensure that no illegal trapping or poaching takes place. • Should any Red Data faunal species be noted within the development footprint areas, these species must be relocated to similar habitat within the vacant land to the west of the development area with the assistance of a suitably qualified ecologist. • Any fauna directly threatened by the construction activities must be removed to a safe location by the ECO or qualified Ecologist. 		

<ul style="list-style-type: none"> All staff and contractors must undergo an environmental induction course held by the ECO as well as faunal education and awareness programmes.
<p>Cumulative impacts: Expected to be moderate to minimal, should the recommended mitigation measures not be adequately implemented. The habitat is however already largely transformed and fragmented due to the farming and housing development activities and the site is not a unique habitat within the landscape. It is not envisaged that any Red data species will be present on the site and thus directly impacted as a result of the development.</p>
<p>Residual Risks: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.</p>

Table 19: Impact of disturbance and noise pollution on fauna

Impact of disturbance and noise pollution on fauna		
<p>Nature: Species residing within this landscape often experience varying degrees of disturbance. As a result, disturbance of fauna by the proposed road and interchange is anticipated to be of low significance as most fauna will move away from the area temporarily. Disturbance is created by noise-pollution associated with workers and construction activities can affect local wildlife utilising adjacent habitats, particularly mammalian species. This is likely to be short-lived during the construction phase but will continue to have an impact during the operational life span of the development when noise and emissions from vehicles occur on the road.</p> <p>The level of disturbance of fauna would be similar for both alternatives. The disturbance and noise impact is similar for both alternatives, but due to the additional length of Alternative 2, the impact may be more than for Alternative 1.</p>		
CONSTRUCTION PHASE		
Rating of Impacts	Without mitigation	With mitigation
Probability	Definite	Highly Probable
Duration	Permanent	Permanent
Extent	Limited to Site	Limited to Site
Magnitude	Moderate	Low
Significance	High	Moderate
Status (positive or negative)	Negative	Negative
Reversibility	Low	Moderate

Irreplaceable loss of resources?	Moderate	Low
Can impacts be mitigated?	Yes	
NO GO Option	A No Go Option will not result in additional noise and disturbance in the area.	
OPERATIONAL PHASE		
No significant noise related impacts or disturbances are expected on fauna during operation of the road.		
Probability	Probable	Improbable
Duration	Permanent	Permanent
Extent	Limited to Site	Limited to Site
Magnitude	Moderate	Low
Significance	Moderate	Low
Mitigation:		
<ul style="list-style-type: none"> • Strict control must be maintained over all activities during construction, in line with an approved Construction EMPr. • Any Red Data species identified in this report observed to be roosting and/or breeding in the vicinity, the ECO must be notified. 		
Cumulative impacts: Species at the Suikerbosrand Nature Reserve to the south of the road development route may experience high levels of disturbance. Species are particularly sensitive to disturbance during the breeding season and this must be borne in mind during both the construction and operational phases.		
Residual Risks: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.		

8.2.2. Impact on Wetlands and River courses:

Table 20: Degradation of wetlands areas and drainage systems

Degradation of wetlands areas & drainage systems
Nature: There is a wetland within 500m of the study site. Construction may lead to some direct or indirect loss of or damage to seasonal wetlands or drainage lines. This will lead to localised loss of wetland habitat and may lead to downstream impacts that affect a greater extent of wetlands or impact on wetland function. Where these habitats are already stressed due to degradation and transformation, the loss may lead to increased vulnerability

(susceptibility to future damage) of the habitat. Physical alteration to wetlands can have an impact on the functioning of those wetlands.

CONSTRUCTION PHASE		
Rating of Impacts	Without mitigation	With mitigation
Probability	Definite	Highly probable
Duration	Medium-term	Medium-term
Extent	Limited to Local Area	Limited to Local Area
Magnitude	High	Moderate
Significance	High	Moderate
Status (positive or negative)	Negative	Negative
OPERATIONAL PHASE		
Wetland impacts are expected during operation of the road, further mitigation measures are within the wetland assessment report. Any future extensions of the road should be carefully planned as to avoid the wetland		
Probability	Highly probable	Probable
Duration	Permanent	Permanent
Extent	Limited to Local Area	Limited to the Site
Magnitude	High	Low
Significance	High	Moderate
Status (positive or negative)	Negative	Negative
Reversibility	Low	Moderate
Irreplaceable loss of resources?	Moderate	Low
Can impacts be mitigated?	Yes	
NO GO Option	A No Go Option will not change the status quo of wetlands and rivers in the area.	
Mitigation:		
<ul style="list-style-type: none"> • Buffer zone should be respected by all workers on site; • Access roads to regulate traffic should be respected; • Any vegetation removed within the edge of the wetland, should be minimal and rehabilitation process should seek to repair damage. 		

Further detail on mitigation measures included in the Wetland Report
<p>Cumulative impacts: Expected to be moderate, should mitigation measures not be implemented as changes made to the bed or banks of watercourse channels will cause unstable channel conditions causing erosion, meandering, increased potential for flooding and movement of bed material, which will result in property damage adjacent to and downstream of the site. The impacts would be the similar for Alternative 1 and Alternative 2, as both cross the same water courses and wetlands.</p> <p>Cumulative impacts will be further assessed during the EIA phase. Also see Wetland specialist report.</p>
<p>Residual Risks: Low risk (of damming and flooding at the bridge structure) anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.</p>

Table 21: Pollution of water courses and soil

Pollution of water courses and soil		
<p>Nature: Mismanagement of waste and pollutants like hydrocarbons, construction waste and other hazardous chemicals will result in these substances entering and polluting sensitive natural environments either directly through surface runoff during rainfall events, or subsurface water movement.</p> <p>Impacts would be the similar for Alternative 1 and Alternative 2, as both cross the same water courses & wetlands.</p>		
CONSTRUCTION PHASE		
Rating of Impacts	Without mitigation	With mitigation
Probability	Definite	Highly probable
Duration	Medium-term	Medium-term
Extent	Limited to Local Area	Limited to Local Area
Magnitude	High	Moderate
Significance	High	Moderate
Status (positive or negative)	Negative	Negative
NO GO Option	A No Go Option will not add to pollution of water courses and soil within the area.	
OPERATIONAL PHASE		

No significant pollution related impacts are expected during operation of the road unless maintenance is done without proper implementation of the EMP, and contractor's specifications.

Probability	Highly probable	Probable
Duration	Permanent	Permanent
Extent	Limited to Local Area	Limited to Site
Magnitude	High	Low
Significance	High	Moderate
Status (positive or negative)	Negative	Negative
Reversibility	Low	Moderate
Irreplaceable loss of resources?	Moderate	Low
Can impacts be mitigated?	Yes	

Mitigation:

- All waste generated during construction is to be disposed of as per the Environmental Management Programme and no washing of paint brushes, containers, wheelbarrows, spades, picks or any other equipment adjacent or in drainage channel is permitted.
- Proper management and disposal of construction waste must occur during the lifespan of the project, including during maintenance of the roads and interchanges.
- No release of any substance i.e. cement, oil, that could be toxic to fauna or faunal habitats within the watercourses.
- Portable toilets must be placed 30m away from the edge of the channels.

- Do not locate the construction camp or any depot for any substance which causes or is likely to cause pollution within a distance of 50m from a channel.
- Spillages of fuels, oils and other potentially harmful chemicals must be cleaned up immediately and contaminants properly drained and disposed of using proper solid/hazardous waste facilities (not to be disposed of within the natural environment). Any contaminated soil must be removed and the affected area rehabilitated immediately – consult with a wetland/aquatic specialist if spills occur.

Cumulative impacts: Expected to be moderate, should mitigation measures not be implemented. The impacts would be the similar for Alternative 1 and Alternative 2.

Residual Risks: A low risk (of damming of water at the bridges that will affect the flood plain and flooding) is anticipated. The optimal design of bridges should be done to accommodate water and limit obstruction of water courses.

8.2.3. Impacts on traffic of existing roads

Table 22: Traffic

Traffic		
<p>Nature: Traffic will be congested on the crossing as a result of construction activities. In addition, traffic increase can lead to road damage, erosion, accidents and even traffic delays. Construction machinery and heavy vehicles are likely to generate dust which is likely to be perceptible by adjacent residents. Trucks may potentially distribute dust along internal access roads. During operation, traffic circulation is expected to improve from the current situation.</p> <p>The traffic impact will be similar for both alternatives.</p>		
NO GO Option	A No Go Option means no additional traffic to the area and will prevent disruption on roads.	
CONSTRUCTION PHASE		
Rating of Impacts	Without mitigation	With mitigation
Probability	Probable	Improbable
Duration	Limited to Local Area	Limited to Site
Extent	Low	Minor
Magnitude	Moderate	Low
Significance	Moderate	Low
Status (positive or negative)	Negative	Negative
Reversibility	Low	Low
Irreplaceable loss of resources?	Moderate	Low
Can impacts be mitigated?	Yes	
OPERATIONAL PHASE		
<p>Nature:</p> <ul style="list-style-type: none"> • The proposed upgrading will increase the travel time for coal and timber carrying trucks, increasing company costs to travel distances; • Less accidents in the interchange; • Less dust & pollution due to improved traffic flow; • Access to the school will be improved, as school will most probably be moved to another site, removing the learners from the dangerous traffic situation embodied by the Panbult interchange; 		

<ul style="list-style-type: none"> Improved access for trucks carrying coal from the Driefontein mine to the Panbult siding; 		
Probability	Definite	Definite
Duration	Local	Local
Extent	Medium	Medium
Magnitude	High	High
Significance	High	High
Status (positive or negative)	Positive	Positive
<p>Mitigation:</p> <ul style="list-style-type: none"> Vehicular movement of construction vehicles beyond the property boundaries of the site should be outside the am and pm peak hours. Where new access roads are required, they should disturb as limited an area as possible Areas demarcated as being out of bounds for construction personnel must be sign posted and must be regarded strictly as "no-go" areas. No contractor's personnel, vehicles or machinery may access these areas. Very strict control must be exercised over this aspect of construction activities Ensure that the necessary signage and traffic measures are implemented for safe and convenient access to the site from. Measures must also be put in place to ensure that these access points do not get built up with mud or sand. 		
<p>Cumulative impacts: Expected to be moderate, should the recommended mitigation measures not be adequately implemented. Residents within close vicinity to the proposed infrastructure are expected to be affected.</p>		
<p>Residual Risks: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.</p>		

8.2.4. Social and Socio-economic Impacts

Table 23: Impact on property values

Impact on Property values
<p>Nature: Property values may be impacted upon negatively due to the visual impact during construction. However, it is believed that once the road is operational, properties may increase in value due to the improvement of access and circulation when using the proposed road.</p> <p>This is a positive impact and property values may be impacted equally upon along Alternative 1 and for Alternative 2 .</p>

NO GO Option	A No Go Option will not change the status quo of land values.	
CONSTRUCTION PHASE		
Rating of Impacts	Without mitigation	With mitigation
Probability	Probable	Probable
Duration	Short-term	Very short-term
Extent	Limited to the Local Area	Limited to Local Area
Magnitude	Moderate	Moderate
Significance	Low	Low
Status (positive or negative)	Negative	Negative
OPERATIONAL PHASE		
No significant impacts are expected on land values during operation of the road, but improved access may lead to higher marketability of properties.		
Probability	Improbable	Probable
Duration	Very short-term	Very short-term
Extent	Limited to Site	Limited to Site
Magnitude	Low	Low
Significance	Low	Low
Status (positive or negative)	Positive	Positive
Reversibility	Low	Low
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation:		
<ul style="list-style-type: none"> • Negotiations between land owners and SANRAL regarding servitudes are to be undertaken after the environmental authorisation of the EIA is obtained. An independent property valuer must be appointed during negotiations. • All landowners must be informed of the construction processes prior to commencement of construction activities. 		
Cumulative impacts: Possible low positive impact.		
Residual Risks: Low risk anticipated, provided that the mitigation measures are implemented correctly.		

Table 24: Impact on Job Opportunities

Impact on Job opportunities		
<p>Nature: Residents and local businesses can potentially benefit from work opportunities and expenditure. However, contractors appointed by SANRAL may not necessarily come from these areas. Contractors usually have a percentage of permanently employed skilled personnel to work on the project. It is possible that where labour may be sourced from local communities, it will be to perform unskilled work such as land clearing and erecting fences. During operation, maintenance of the road and resurfacing may provide job opportunities in the future. The number of job opportunities would be comparable for both Alternatives,</p>		
NO GO Option	No Go Option will not provide job opportunities in the area. This is a negative impact.	
CONSTRUCTION PHASE		
Rating of Impacts	Without mitigation	With mitigation
Probability	Improbable	Improbable
Duration	Medium-term	Very short-term
Extent	Limited to the Local Area	Limited to Local Area
Magnitude	Moderate	Moderate
Significance	Low	Low
Status (positive or negative)	Positive	Positive
Reversibility	Low	Low
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
OPERATIONAL PHASE		
<p>No significant impacts are expected during operation of the road but job opportunities will exist during maintenance of the road, e.g. grass cutting, etc.</p>		
Probability	Improbable	Probable
Duration	Very short-term	Very short-term
Extent	Limited to Site	Limited to Site
Magnitude	Low	Low
Significance	Low	Low
Status (positive or negative)	Positive	Positive

<p>Mitigation:</p> <ul style="list-style-type: none"> Residents to be informed of the construction processes prior to commencement of construction activities. Notification must include possible timeframes for traffic disruption. Consequences of disturbance and inconvenience must be clearly indicated to all surrounding/affected land owners. Road signage to be used effectively.
<p>Cumulative impacts: Expected positive (temporary) impact to be low.</p>
<p>Residual Risks: None anticipated provided that the mitigation measures are implemented correctly and local labour and suppliers be given the opportunity to participate.</p>

Table 25: Health and Safety issues

Health and safety issues		
<p>Nature: The infrastructure may have a health impacts in the form of traffic at the crossings at the proposed road. The impact of job seekers and the location of the construction camp is a social issue that could result in an increase in HIV/AIDS and crime. This is valid equally for both Alternatives.</p>		
NO GO Option	No Go Option will not bring additional health risks or improved road network to the area.	
CONSTRUCTION PHASE		
Rating of Impacts	Without mitigation	With mitigation
Probability	Improbable	Improbable
Duration	Medium-term	Very short-term
Extent	Limited to the Local Area	Limited to Site
Magnitude	Low	Low
Significance	Moderate	Low
Status (positive or negative)	Negative	Negative
OPERATIONAL PHASE		
<p>No significant impacts are expected on agriculture during operation of the road, when motorists will have to abide by rules for driving within speed limits</p>		
Probability	Improbable	Improbable
Duration	Very short-term	Very short-term
Extent	Limited to Site	Limited to Site
Magnitude	Minor	Minor

Significance	Low	Low
Status (positive or negative)	Negative	Negative (Negligible)
Reversibility	Low	Moderate
Irreplaceable loss of resources?	Moderate	Low
Can impacts be mitigated?	Yes	
Mitigation:		
<ul style="list-style-type: none"> SANRAL Standards and Specifications to be followed during construction, maintenance and operation 		
Cumulative impacts: Expected negative impact to be low to moderate.		
Residual Risks: None anticipated although operation of the road would present the associated risk of road accidents.		

8.2.5. Heritage Impact

Table 26: Heritage impacts

Heritage impacts		
Nature: Potential of excavating items of cultural and national importance		
NO GO Option	No Go Option will not impact on the study site, thus the chance of disturbing features of importance is nil	
CONSTRUCTION PHASE		
Rating of Impacts	Without mitigation	With mitigation
Probability	High	Low
Duration	Medium	Medium
Extent	Local	Local
Magnitude	Medium	Medium
Significance	Medium	Low
Status (positive or negative)	Positive	Positive
Reversibility	Yes	Yes
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
OPERATIONAL PHASE		
No mitigation is proposed because the receiving environment is currently in built up areas, with existing minor reticulation powerlines and township settlements with their associated infrastructure and other bulk and service infrastructures.		
Mitigation:		
<ul style="list-style-type: none"> Should any archaeological, cultural property heritage resources be exposed during excavation or be found on development site, a registered heritage specialist or PHRA official must be called to site for inspection; 		

- Under no circumstances may any archaeological, historical or any physical cultural property heritage material be destroyed or removed from site;
- Should remain and/or artefacts be discovered on the development site during earthworks, all work will cease in the area affected and the Contractor will immediately inform the Construction Manager who in turn will inform Heritage Authority/SAHRA.
- Should any remains be found on site that is potentially human remains, the PHRA and South African Police Service should be contacted.

Cumulative impacts: *The upgrading the Panbult interchange may lead to cumulative visual impacts to the landscape if it were to be constructed. This may be of concern and will detract peoples' experience of the general regional sense of place.*

Residual Risks: Low risk provided mitigation measures are adhered to

9. PLAN OF STUDY FOR ENVIRONMENTAL IMPACT ASSESSMENT

A "plan of study for environmental impact assessment" means a study contemplated in Regulation 2 which forms part of a scoping report and sets out how an environmental impact assessment will be conducted. As per 2, (2)(i) to the EIA Regulations the plan of Study for Environmental Impact Assessment is a document which forms part of a scoping report and sets out how an environmental impact assessment must be conducted and must include:

- i. A description of the **alternative to be considered** and assessed within the preferred site, including the option of not proceeding with the activity;
- ii. A description of the **aspects to be assessed** as part of the environmental impact assessment process;
- iii. Aspects to be assessed by **specialist**;
- iv. A description of the **proposed method of assessing** the environment aspects;
- v. A description of the **proposed method of assessing** the environmental aspects, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialist;
- vi. A description of the proposed **method of assessing duration and significance**;
- vii. An indication of **the stages** at which the competent authority will be consulted;
- viii. Particulars of the **public participation process** that will be conducted during the environmental impact assessment process; and
- ix. A description of the **tasks** that will be undertaken as part of the environmental impact assessment process;
- x. **Identify suitable measures** to avoid, reverse, mitigate or manage identified impacts and determine the extent of the residual risks that need to be managed and monitored.

9.1. Description of Tasks

The aim of the impact assessment phase is to:

- Conduct a detailed impact assessment of the issues identified
- Undertake specialist studies
- Identify potential mitigation measures to reduce impacts
- Ensure information is disseminated to Interested and / or Affected parties and there is a constant flow of communication.

The following tasks will form part of the Environmental Impact Assessment Phase:

- A comprehensive Public Participation Process (as above)
- Conduct specialist studies
- Assess alternatives
- Compilation of an Environmental Impact Report (EIR)
- Compilation of an Environmental Management Programme
- Make Draft EIR available for public comment
- Submit Final EIR to DEA
- Await decision

9.2. Authority Consultation

The stages at which the competent authority will be consulted are as follows:

- Submission of Draft Scoping Report and Plan of Study for EIA;
- Submission of Draft and Final Environmental Impact Report; and
- Response from competent authority regarding acceptance of Final Environmental Impact Report.
- Appeal process

Additional consultation may occur with DEA during the EIA process should the need arise.

9.3. Specialist studies in EIA Phase

The full impact of construction activities will be described in the EIAR after the integration of all available specialist study findings has occurred. Assumptions made and the specialist will explicitly state any uncertainties and gaps in knowledge. An indication will be provided by the specialist of the methodology used in determining the significance of potential environmental impacts. Lyma Consulting will ensure that the methodology is consistent across all specialist studies in order to facilitate informed integrated decision making.

Studies that have been commissioned during the Scoping Phase, included:

- Delineation of the wetland and river boundaries using the requisite techniques based upon the latest Wetland Classification systems (SANBI, 2009);
- Noise Impact Assessment;
- Socio-Economic Assessment for the area;
- Assessment of the possible impacts on the Heritage resources of the area.

The following specialist studies will form part of the Environmental Impact Report:

9.3.1 Ecological Assessment

The ecological assessment will entail field verification which will be utilised to assess the potential impacts and issues that have been identified. These are listed below.

- Loss of natural vegetation;
- Impact on sensitive vegetation;
- Loss of habitat for faunal species;

The aspects that are identified as sensitive during the Scoping Phase such as wetland or areas of intact vegetation. The areas which have been identified as sensitive during the Scoping Phase will be analysed in detail during the EIA phase.

Based on the findings of the Scoping Report, the applicable investigations at EIA phase could involve site specific surveys for the following faunal groupings, mammals, avifauna, reptiles, amphibians, and invertebrates.

The study will focus on habitat provision and the potential occurrence of Red Data species on the site. Sensitivity mapping will be undertaken for all faunal groupings assessed.

The study will culminate in the compilation of a Biodiversity Impact Assessment as well as mitigation measures which will feed into the Environmental Management Programme (EMPr).

9.4. Public Participation Process of the EIA phase

During the EIA Phase, additional data would be gathered by means of consultation with the stakeholders and affected parties.

The team will study and analyse the information gathered by the biophysical studies (e.g. information related to technical, environmental, economic and demographic aspects

and land-use changes, impact on other facilities, services, and so forth) done in parallel with the public participation process. This would assist the team to assess the impact of the proposed development on the direct (land owners and surrounding communities) and indirect (regional) environment.

During the Environmental Impact Assessment phase, the FINAL EIA report will be made available for public review and comments at the following places:

- St Andrews Primary School
- Local Council Offices
- Ward Councillor's Offices
- Sonae Novobord

All stakeholders and registered I&AP's will be notified via e-mail, fax, SMS's and post (depending on the preferred method of communication by stakeholders and I&AP's). The Draft EIA report will be made available for 30 days to the I&AP's and Organs of state. I&AP's will be informed of the review process by advertisements in the Regional Newspaper. Relevant organs of state shall be sent the Draft copies of the EIR to obtain comments.

During the EIA review phase the Public/Community and Focus Group meetings will be held with respective stakeholders, communities and I&AP's. The purpose of these meetings is to present the findings of the EIA and provide all respective stakeholders to make input/comments.

Comments on the DEIR will be incorporated into the EIAR and the EIAR and EMPr will be submitted to DEA within 50 days after the draft has been submitted to DEA (thus 30 plus 20 days after the review period). At the end of the review period of the EIA Report, all comments/input from stakeholders and I&AP's will be captured in the Issues and Response Report (IRR) which will form part of the Final EIA Report. All I&AP's on the project database will be notified of the submission of the Final EIAR report.

All stakeholders and registered I&AP's will be notified about the Authority's decision, that is expected within 107 days from submission of the Final EIAR. The notifications will be done via e-mail, fax, SMS's and post.

9.5. Proposed Methodology of Assessing Issues and Alternatives

In accordance with 3 of the **2014 Regulations**, Consultant will assess each identified potential significant impact and report the findings in the Environmental Impact Assessment Report (EIAR) and will include:

- (j) an assessment of each identified potentially significant impact and risk, including-
 - (i) cumulative impacts;
 - (ii) the nature, significance and consequences of the impact and risk;
 - (iii) the extent and duration of the impact and risk;
 - (iv) the probability of the impact and risk occurring;
 - (v) the degree to which the impact and risk can be reversed;
 - (vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and
 - (vii) the degree to which the impact and risk can be mitigated;

- (k) where applicable, a summary of the findings and recommendations of any specialist report complying with 6 to these Regulations and an indication as to how these findings and recommendations have been included in the FINAL assessment report;

- (l) an environmental impact statement which contains-
 - (i) a summary of the key findings of the environmental impact assessment;
 - (ii) a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and
 - (ii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;

- (m) based on the assessment, and where applicable, recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation;

- (n) the proposed alternatives which respond to the impact management measures, avoidance, and mitigation measures identified through the assessment;

(o) any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation

(p) a description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed;

(q) a reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;

(r) where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required and the date on which the activity will be concluded and the post construction monitoring requirements finalised;

(s) an undertaking under oath or affirmation by the EAP in relation to:

(i) the correctness of the information provided in the reports;

(ii) the inclusion of comments and inputs from stakeholders and I&APs;

(iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and

(iv) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties;

(t) where applicable, details of any financial provisions for the rehabilitation, closure, and

ongoing post decommissioning management of negative environmental impacts;

(u) an indication of any deviation from the approved scoping report, including the plan of study, including-

(i) any deviation from the methodology used in determining the significance of potential environmental impacts and risks; and

(ii) a motivation for the deviation;

(v) any specific information that may be required by the competent authority; and

(w) any other matters required in terms of section 24(4)(a) and (b) of the Act.

Alternatives will be assessed according to the impact of the specific alignment on the surrounding environment. Since the impacts of all three alignments will be the same in generic surroundings, the environment on which these will impact will be the variable which will govern the decision of a recommended alignment. I.e. the sensitive areas through which each route alignment passes.

Thus far in the Scoping Report, the following alternatives have been presented:

Option A- Preferred Alternative - From a traffic and geometric perspective Option A is the preferred scheme because it provides a free-flow movement for trucks on a separate link. Option A is less complex than Option B.



Figure 1 – Option 1 preferred

Option B – Alternative - This option was explored as the preferred option in the previous EIA process. Many objections were received against this option from affected landowners. This is in view of the fact that the route was take up land from the businesses in one form or the other and affected more businesses than in Option A above.

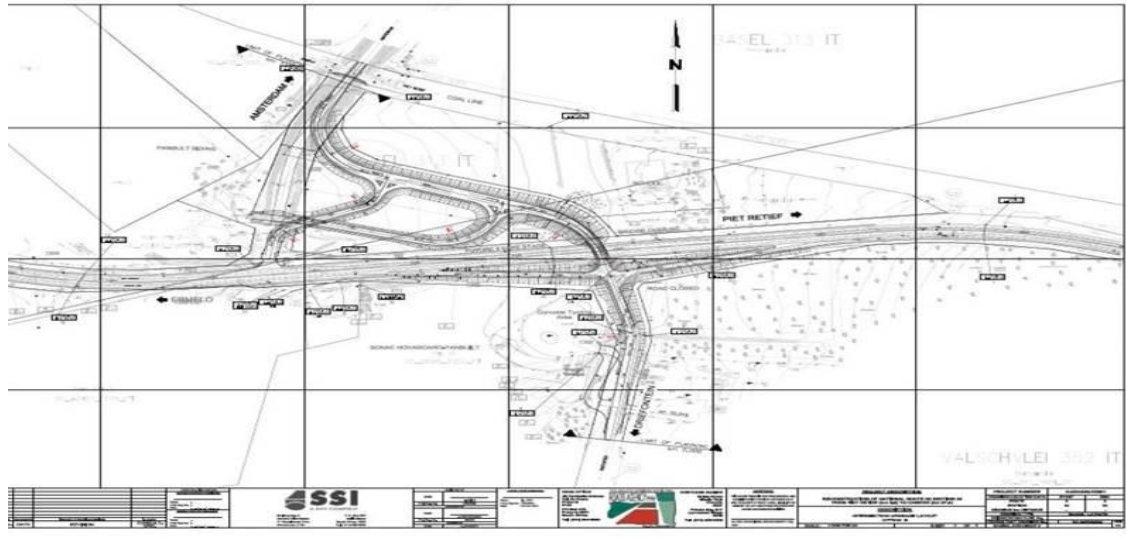


Figure 2 - Alternative

No Go option - The Kangra Coal (Pty) Ltd Mine is situated in Mpumalanga Province to the south -east of Ermelo and to the west of Piet Retief). Coal produced by the mine is transported by road from Maquasa East Plant to the Panbult Siding, a distance of approximately 32km. Most of this distance is on unpaved road and interlink vehicles / trucks with an average capacity of 30 tons each are used to transport coal. At Panbult Siding the coal is off-loaded from the trucks to a stockpile. The stockpiled coal is mechanically loaded onto railway trucks and then transported by rail to Richards Bay.

The coal mine is located to the south of the existing N2/34 highway and the Panbult Siding is to the north of this road. Heavy vehicles transporting the coal to the Panbult Siding from the coal mine enter and travel along the N2/34 between staggered intersections located 390m apart. SANRAL has identified the continuous movement of mine-related heavy vehicles transporting coal to Panbult Siding across the N2 as a safety issue which should be addressed through an upgrade of the Panbult Intersection.

Traffic studies have shown that heavy vehicles transporting coal from the Kangra Coal Mine to the Panbult Railway comprise a significant proportion of the total traffic on the D803, N2 and P97/2. If nothing is done, an increase in traffic can be expected over the operation horizon of the mine in future. Space constraints, land use and ownership, and road safety concerns around the N2/34 will remain a permanent risk.

9.5.1. Impact Evaluation methodology

Activities within the framework of the proposed development and their respective construction and operational phases, give rise to certain impacts.

The activities arising from the Construction Phase and Operational Phase have been included in the tables. The assessment endeavours to identify activities, which require certain environmental management actions to mitigate the impacts arising from them. The criteria against which the activities were assessed are given in the next section.

Direct, indirect and cumulative impacts of the issues identified through the scoping study, as well as all other issues identified in the EIA phase must be assessed in terms of the following criteria:

- The **nature**, which shall include a description of what causes the effect, what will be affected and how it will be affected.
- The **extent**, wherein it will be indicated whether the impact will be local (limited to the immediate area or site of development) or regional, and a value between 1 and 5 will be assigned as appropriate (with 1 being low and 5 being high):
- The **duration**, wherein it will be indicated whether:
 - very short duration (0–1 years) – assigned a score of 1;
 - short duration (2-5 years) - assigned a score of 2;
 - medium-term (5–15 years) – assigned a score of 3;
 - long term (> 15 years) - assigned a score of 4; or
 - permanent - assigned a score of 5
- The **consequences (magnitude)**, quantified on a scale from 0-10, where 0 is small and will have no effect on the environment, 2 is minor and will not result in an impact on processes, 4 is low and will cause a slight impact on processes, 6 is moderate and will result in processes continuing but in a modified way, 8 is high (processes are altered to the extent that they temporarily cease), and 10 is very high and results in complete destruction of patterns and permanent cessation of processes.
- The **probability of occurrence**, which shall describe the likelihood of the impact actually occurring. Probability will be estimated on a scale of 1–5, where:
 - 1 is very improbable (probably will not happen),
 - 2 is improbable (some possibility, but low likelihood),
 - 3 is probable (distinct possibility),

4 is highly probable (most likely) and
5 is definite (impact will occur regardless of any prevention measures).

- the **status**, which will be described as either positive, negative or neutral.
- the degree to which the impact can be **reversed** (low, moderate, high).
- Whether the impact may cause **irreplaceable loss of resources** (Yes/No).
- Whether the impact can be **mitigated**.
- the **significance**, which shall be determined through a synthesis of the characteristics can be assessed as low, medium or high; and will be calculated by combining the criteria in the following formula: $S = (E+D+M) \times P$

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability The **significance weightings** for each potential impact are as follows:

< 30 points: **Low** (i.e. where this impact would not have a direct influence on the decision to develop in the area),

30-60 points: **Medium** (i.e. where the impact could influence the decision to develop in the area unless it is effectively mitigated),

> 60 points: **High** (i.e. where the impact must have an influence on the decision process to develop in the area).

The table below is an example of the tables that will be used in the EIA Report to assess the impacts that were identified for the project.

9.5.2. Assessment Table Example

Figure 28 – Assessment table template

Anticipated impact: _____		
Nature: _____ The impact of Alternative 1 will be _____ The impact of Alternative 2 will be _____		
CONSTRUCTION PHASE		
Rating of Impacts	Without mitigation	With mitigation
Probability	1 = very improbable 2 = low likelihood),3 = probable 4 = most likely 5 = definite	1 = very improbable 2 = low likelihood),3 = probable 4 = most likely 5 = definite
Duration	Very short/short/medium/long term/permanent	Very short/short/medium/long term/permanent
Extent	Local/regional/national (1-5)	Local/regional/national (1-5)
Magnitude	0= no effect 2 = minor 4 = low 6 = moderate 8 = high 10 = very high	0= no effect 2 = minor 4 = low 6 = moderate 8 = high 10 = very high
Significance (preferred Alternative)	Low/Medium/High	Low/Medium/High
Status (positive or negative)	Negative/Positive	Negative/positive
OPERATIONAL PHASE		
Probability	1 = very improbable 2 = low likelihood),3 = probable 4 = most likely 5 = definite	1 = very improbable 2 = low likelihood),3 = probable 4 = most likely 5 = definite
Duration	Very short/short/medium/long term/permanent	Very short/short/medium/long term/permanent

Extent	Local/regional/national (1-5)	Local/regional/national (1-5)
Magnitude	0= no effect 2 = minor 4 = low 6 = moderate 8 = high 10 = very high	0= no effect 2 = minor 4 = low 6 = moderate 8 = high 10 = very high
Significance (Preferred alternative)	Low/Medium/High	Low/Medium/High
Significance Alternative 2	Low/Medium/High	Low/Medium/High
Status (positive or negative)	Negative/positive	Negative/positive
Reversibility	Low/medium/high	Low/medium/high
Irreplaceable loss of resources?	Yes/No	Yes/No
Can impacts be mitigated?	Yes/No	
No Go Alternative		
Recommended mitigation measures:		
Cumulative impacts:		
Residual Risks: Low/medium/high risk anticipated if the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.		

Table 19 - Key activities and anticipated timeframes

Activity	Anticipated dates
Draft Scoping Report and Public Review period	16 August – 15 January 2017
Submit Final Scoping Report and Plan of Study for the Impact Assessment to the Competent Authority	18 January 2017
Specialist Study investigation	10 January- 30 December 2016
Draft Environmental Impact Assessment Report Public Review Period	01 February 2017-01 March 2017
Submit FINAL Environmental Impact Assessment Report to the Competent	05 March 2017
Issuing of Environmental Authorisation	30 May 2017

10. CONCLUSION AND RECOMMENDATION

The negative impacts that are identified in this Scoping Phase are to be earmarked for further in depth studies during the EIA Phase. The main issues identified from the scoping of potential environmental and socio-economic risks and impacts for the proposed project are as follows:

- The proposed new layout will affect the existing St Andrews Primary School, an informal dwelling house and graves in the property.
- The school will have to be relocated and negotiations are currently underway for the relocation of the school.
- There is an existing cemetery within the project area. The issue of cemeteries is being addressed as part of the heritage impact study to be conducted by a specialist.
- A section of the new layout footprint is on an existing wetland.
- New access roads will be developed as part of the upgrade to ensure right of way for farmers in the area.
- The main landowner affected by the proposed interchange is Mr Hans Gerken, who own land main utilised for commercial forestry.
- There will be fewer properties affected as opposed to the previous layout that had received objections from the landowners.
- The Project Engineering team has consulted the affected landowners who in principle were in agreement with the new proposal.
- A pedestrian crossing, with retaining walls would be built to ensure safety of the pedestrians.

From a traffic and geometric perspective Option A is the preferred scheme because it provides a free-flow movement for trucks on a separate link. Option A is less complex

than Option B.

This option was explored as the preferred option in the previous EIA process. Many objections were received against this option from affected landowners. This is in view of the fact that the route has land take up implications from the businesses in one form or the other and affected more businesses than in Option A.

The project will enable the connection of existing road networks to improve circulation and allow for development of the area. Socio-economic benefits are likely to result from the proposed project and might include job creation, which cannot be achieved with a No Go Alternative.

This Scoping Report has been prepared to allow public review and comments that will guide the EIA phase and allow decision making by the authorities regarding the need for information and specialist investigations that may be required during the EIA phase.

Detailed mitigation and management measures will be developed during the Environmental Management Programme (EMPr) phase of the project, in following the detailed assessment. Should this project receive a positive environmental authorisation, the EMPr will guide the project proponent and appointed contractor(s) through the FINAL design, construction and operational phases of the proposed project.