Basic Assessment Report

SANRAL NATIONAL ROUTE 11 UPGRADE, SECTION 09 BETWEEN HENDRINA (KM 0.00) AND THE HENDRINA POWER STATION (KM18.56), MPUMALANGA PROVINCE

DEA Reference: 14/12/16/3/3/1/1465



September 2015



environmental affairs

Department: Environmental Affairs REPUBLIC OF SOUTH AFRICA

(For official use only)

File Reference Number: Application Number: Date Received:

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

- 1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
- 2. This report format is current as of **08 December 2014**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
- 3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
- 4. Where applicable tick the boxes that are applicable in the report.
- 5. An incomplete report may be returned to the applicant for revision.
- 6. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
- 7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
- 8. No faxed or e-mailed reports will be accepted.
- 9. The signature of the EAP on the report must be an original signature.
- 10. The report must be compiled by an independent environmental assessment practitioner.
- 11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
- 12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
- 13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.

- 14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
- 15. Shape files (.shp) for maps must be included in the electronic copy of the report submitted to the competent authority.

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SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section? **YES** NO If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

1. PROJECT DESCRIPTION

a) Describe the project associated with the listed activities applied for

• PROJECT DESCRIPTION

South African National Roads Agency SOC Limited (SANRAL) is proposing to upgrade the National Route 11, Section 09 between Hendrina (km 0.00) and the Hendrina Power Station (km 18.56), in the Mpumalanga Province, South Africa.

The proposed road upgrade will entail construction of various improvements on the N11-09, which will include the following:

- Widening of the existing two-lane single carriageway National Route 11-09, Section 9 to provide 2.5 m wide surfaced shoulders and climbing lanes where warranted;
- Vertical re-alignment of N11 carriageway to ensure a 100 km/hr geometric design speed;
- Improvement of the Voortrekker Street at-grade intersection to the roundabout configuration;
- Capacity and safety improvement of the Hendrina Power Station at-grade intersection;
- Replacement of the existing culvert spanning the Bosman River with a new river bridge;
- Widening of the existing Bosmanspanspruit River Bridge;
- Temporary stockpiling of material;
- Cape seal surfacing for rural section;
- 50 mm asphalt surfacing for urban section;
- 45 mm asphalt surfacing for Hendrina Power Station intersection; and
- Temporary bypass roads that will be utilised during the construction phase.



Figure 1.1: Locality map of the proposed N11-09 road upgrade.

Water use licenses (WULs) will be required for the proposed project, and applications thereof will be submitted in accordance with the National Water Act (Act No. 36 of 1998), regulated by the Department of Water and Sanitation (DWS) for the associated construction and upgrade of watercourse structures.

The following bridges and culverts are proposed for sections of the watercourses associated with the proposed N11 road upgrade:

 Major Culvert (26° 8.716'S 29° 42.545'E) Currently a narrow raised (2.200 4.20	Crossing	Crossing details	Proposed Works
	Major Culvert (26° 8.716'S 29° 42.545'E)	 Major culvert at Bosman River 12.23 m long and 10.95 m wide between parapets. Currently a narrow raised sidewalk of 0.5 m is provided leaving a shoulder of 1.3 m wide on either side in addition to two 3.7 m lanes. Total verge width is thus 1.8 m, which is short of the required 2.5 m standard of the road. Steel angle stanchions and rails make up the railing on both deck edges, which does not comply with SANRAL standards. The 15 years return period flood of 62m³/s required for a Class 3 road overtops the structure by far. 	Demolish existing major culvert, replace with new bridge at same position with a width of 12.4 m, with 3 x 5.0 m spans.

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Culvert (26°8'0.3"S 29°42'18.8"E)	Lesser culvert at drainage line	Replace with major culvert of 2 x
26: 8:0 3:'S 29:42:18.8"E 28: 8:0 3:'S 29:42:18.8"E 29: 10: 10: 10: 10: 10: 10: 10: 10: 10: 10	• 2 x 0.9 m diameter	2.4 x 1.2 m cells.
Culvert (26°6'57.2"S 29°41'58.5"E)	Lesser culvert at drainage line	Replace with major culvert of 2 x
28m BILLE & 2002 Districes	• 2 x 0.9 m diameter	2.1 x 1.2 m cells.

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	Bridge at Bosmanspan River	Due to the high cost of
	• 45 m long with spans of 11.26 m,	replacement and marginal
Bridge (26° 4.798'S 29° 41.277'E)	11.17 m, 11.21 m and 11.24 m.	widening being viewed as
	• The overall bridge width between	uneconomical, it is proposed that
and the second	parapets is 10.2 m.	the structure be retained as is
	• Currently a narrow raised	despite the reduced shoulder
	sidewalk of 0.53 m is provided	width. The only improvements
	either side, leaving shoulder of	are removal of the raised
	0.9 m on either side in addition to	sidewalks and provision of new
	two 3.7 m lanes. The total verge	concrete parapets.
	width is thus 1.4 m, which is short	
	of the required 2.5 m standard of	
ala de la companya de	Ine road.	
	• Steel angle stanchions and rails	
	edges which does not comply	
	with SANRAL standards	
	• The 50 years return period flood	
	of 196 m ³ /s leave a 1.0 m	
	freeboard while double this flood	
	leaves a freeboard of 0.64 m	
	meeting the Class 2	
	requirements.	
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Please refer to Appendix C for further details on the proposed designs, as per the attached Design Report.

b) Provide a detailed description of the listed activities associated with the project as applied for

Listed activity as described in GN 734, 735 and 736	Description of project activity
Example: GN 734 Item xx xx): The construction of a bridge where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.	A bridge measuring 5 m in height and 10m in length, no wider than 8 meters will be built over the Orange river
GN R. 983: 19 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;	The construction and widening of bridges and culverts, and the by-passes will require excavation and removal of soil within the Bosman and Bosmanspan Rivers and affected drainage lines.
GN R. 983: 56 The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre-	Widening of the surfaced road with 5.0 m is required outside of an urban area for a distance of about 5.5 km.
 (i) where the existing reserve is wider than 13,5 meters; or (ii) where no reserve exists, where the existing road is wider than 8 metres; 	6.0 m is required for climbing lanes and surfaced shoulders along 12 km of the project road length outside of an urban area.
GN R. 985: 12 The clearance of an area of 300 square metres or more of vegetation where 75% 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.	The clearance of vegetation on the verges of the existing road for approximately 18 km will occur in an area considered sensitive due to the endangered indigenous vegetation (Eastern Highveld Grassland), as identified by SANBI.
(c) In Mpumalanga (ii) Within critical biodiversity areas identified in bioregional plans;	
GN R. 985: 14 The development of: (iii) bridges exceeding 10m ² in size;	The replacement of the existing culvert with a new bridge across the Bosman River and the widening of the existing Bosmanspan River Bridge outside an urban area, in Mpumalanga Province, within a
where such development occurs- (a) within a watercourse;	vulnerable ecosystem as classified by the Mpumalanga Biodiversity Conservation Plan.
(a) in wpumaianga	

ii. Outside urban areas, in:	
(ff) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;	

2. FEASIBLE AND REASONABLE ALTERNATIVES

"alternatives", in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this application as required by Appendix 1 (3)(h), Regulation 2014. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

a) Site alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
Existing site is utilised, no alternative site required	26° 4.798'S	29° 41.277'E
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
None		
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
None		

In the case of linear activities:

Alternative:	Latitude (S):	Longitude (E):
Alternative S1 (preferred)		
 Starting point of the activity 	26° 9.550'S	29° 42.997'E
Middle/Additional point of the activity	26° 4.798'S	29° 41.277'E
End point of the activity	26° 0.328'S	29° 39.017'E
Alternative S2 (if any)		
 Starting point of the activity 		
 Middle/Additional point of the activity 		
 End point of the activity 		
Alternative S3 (if any)		
 Starting point of the activity 		
 Middle/Additional point of the activity 		
End point of the activity		

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment. **See APPENDIX J.**

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A of this form.

b) Lay-out alternatives

Alternative 1 (preferred alternative)			
Description		Lat (DDMMSS)	Long (DDMMSS)
Existing layout and road alignment is utilised, no	layout or	26° 4.798'S	29° 41.277'E
routing alternatives are deemed feasible.			
Alternative 2			
Description		Lat (DDMMSS)	Long (DDMMSS)
Alternative 3			
Description		Lat (DDMMSS)	Long (DDMMSS)

c) Technology alternatives

Alternative 1 (preferred alternative)		
No technology alternatives have been assessed as the upgrade takes place on an existing road using		
acceptable standard road construction technologies.		
Alternative 2		
Alternative 3		

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

Power Station Junction

Alternative Design 1 (Preferred Alternative)

This option excludes the widening of the close-by mine haul road underpass bridge and as a result requires a speed reduction zone (LEO Consulting Preliminary Design Document, 2015).

Alternative Design 2

This option maintains geometric standards but requires the widening of the mine haul road underpass bridge. Any at-grade improvement will, however, reach capacity in the medium term (LEO Consulting Preliminary Design Document, 2015).

Alternative Design 3

This option relocates the crossing further away from the mine haul road underpass bridge and does away with the current staggered T-junctions, and is accommodative of a future diamond interchange (LEO Consulting Preliminary Design Document, 2015).

Preferred alternative motivation

In light of the significantly higher initial investment of Alternative 2 and 3 above, Alternative 1 is recommended from an economical point of view, as a medium term solution.

Schuins-Voortrekker staggered intersection

Alternative Design 1		
Combining into a single four-legged intersection with signalization (LEO Consulting Preliminary Design		
Document, 2015).		
Alternative Design 2		
Converting Voortrekker Street into a one-way street in the direction of the school (LEO Consulting		
Preliminary Design Document, 2015).		
Alternative Design 3 (Preferred Alternative)		
Roundabout (LEO Consulting Preliminary Design Document, 2015).		
Preferred alternative motivation		
The roundabout (alternative 3) is recommended as it neither required street closures, nor a one-way		
street, nor signalization, while maintaining adequate levels of service in the long-term. As a logic point		
of arrival to town it acts as a traffic calming device, making crossing the road safer for learners to and		
from the adjacent school (LEO Consulting Preliminary Design Document, 2015).		

Vertical road alignment

Alternative Alignment 1 (Preferred Alternative)		
100km/hr (LEO Consulting Preliminary Design Document, 2015).		
Alternative 2		
120km/hr (LEO Consulting Preliminary Design Document, 2015).		
Preferred alternative motivation		
The difference between the two grade lines is being accentuated at three localized zones where		
significant regrading will be required. The remainder of the route will be flat or slightly undulating. The		
vertical alignment complying with a 100 km/hr design speed is preferred to align the project road		
section with the improvements along the adjacent road sections which are compliant with a 100 km/hr		
design speed. All cuts and fills for the improvement can be fit within the existing road reserve.		

e) No-go alternative

This refers to the road and bridge upgrades not taking place and the road not being widened and the current situation staying the same. The No-go alternative is not preferred as it will render the road unsafe in the short-term due to the high growth in heavy vehicle traffic causing severe delays to other road users with possible increased accidents and road-user costs.

Paragraphs 3 – 13 below should be completed for each alternative.

3. PHYSICAL SIZE OF THE ACTIVITY

a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:	Size of the activity:
Alternative A1 ⁺ (preferred activity alternative)	m²
Alternative A2 (if any)	m²
Alternative A3 (if any)	m²

or, for linear activities:

Alternative:

Alternative A1 (preferred activity alternative) Alternative A2 (if any) Alternative A3 (if any)

Length of the activity:
18 560 m
- M
m

Size of the site/servitude:

YES

m²

m²

m²

m

NO

b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:

Alternative A1 (preferred activity alternative) Alternative A2 (if any) Alternative A3 (if any)

4. SITE ACCESS

Does ready access to the site exist? If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

Existing roads will be used; no new access roads have been planned.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

¹ "Alternative A.." refer to activity, process, technology or other alternatives.

5. LOCALITY MAP

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.). The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s;)
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).

6. LAYOUT/ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWS);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

8. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

9. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

10. ACTIVITY MOTIVATION

Motivate and explain the need and desirability of the activity (including demand for the activity):

1. Is the activity permitted in terms of the property's existing land use rights?	YES	NO	Please explain
Upgrades and maintenance on a major regional road is a South African National Roads Agency SOC Limited (SANRAL) mandate (SANRAL takes responsibility for upgrades and maintenance of regional routes).			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES	NO	Please explain
Road improvements are stipulated in the Mpumalanga PSDF to improve roads such as relieving traffic congestion, improve road safety, improve	e quality overtakii	of serv	ice on existing ortunities, etc.
(b) Urban edge / Edge of Built environment for the area YES NO Please expla			
The activity is on an existing road and takes place within an existing road reserve.			
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).			
The project is in-line with the Steve Tshwete LM IDP and SDF.			
(d) Approved Structure Plan of the Municipality	YES	NO	Please explain
This project is in-line with the approved structure Plan of the Steve Tshwete LM.			

(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	YES	NO	Please explain
The Steve Tshwete LM does not have an Environmental Management F	ramewo	rk (EMI	-)
(f) Any other Plans (e.g. Guide Plan)	YES	NO	Please explain
The project is in-line with other plans and guidelines and will not compro	mise the	eir integ	rity.
3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	YES	NO	Please explain
The project is in-line with the projects identified in the Steve Tshwete LN a reduced quality of service. Improvements are normally applied to road on existing roads and road reserves, such as relieving traffic cong improve overtaking opportunities, etc.	M IDP. T s to impr estion,	he road ove qu improve	d currently has ality of service e road safety,
4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	YES	NO	Please explain
The project is in-line with national priorities. Road safety improvements may result in fewer accidents and relieve some of the traffic congestion experienced in Hendrina section of the N11.			
5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	¥ES	NO	Please explain
The development is not a municipal competency.			
6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES	NO	Please explain
Upgrades and maintenance on a major regional road is a South Afr Limited (SANRAL) mandate (SANRAL takes responsibility for upgrades routes).	ican Na and ma	tional F iintenar	Roads Agency nce of regional

7. Is this project part of a national programme to address an issue of national concern or importance?	YES	NO	Please explain
SANRAL is currently busy with major upgrades on our national roads	. The Mp	umala	nga provincial
and municipal road authorities are improving cooperation, and are working	ng towar	ds join	t planning and
prioritisation of roads through service level agreements.			
8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	YES	NO	Please explain
The project involves the upgrade of an existing national road within the e	existing ro	bad res	serve;
therefore, land use will not change.			
9. Is the development the best practicable environmental option for this land/site?	YES	NO	Please explain
The development consists of the upgrade of an existing national road wi	thin the e	xisting	road reserve.
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES	NO	Please explain
The road upgrade will improve road safety and reduce road accidents an	nd traffic	conge	stion.
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	YES	NO	Please explain
The development consists of the upgrade of an existing national road.	I		
12. Will any person's rights be negatively affected by the proposed activity/ies?	YES	NO	Please explain
The development consists of the upgrade of an existing national road.			
13. Will the proposed activity/ies compromise the "urban edge"YESNOPlease explainas defined by the local municipality?YESNOPlease explain			
The activity is on an existing road and takes place within an existing road	d reserve		
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	YES	NO	Please explain
The proposed activity will not contribute to any SIPS.			
15. What will the benefits be to society in general and to communities?	the lo	cal	Please explain
There will be job creation during the construction phase for skilled and s	emi-skille	d worl	kers as well as
skills development. The road upgrade will result in a safer and better qua	ality road	for its	users in the
long-term.			
16. Any other need and desirability considerations related to th activity?	e propos	sed	Please explain
The aim of the proposed N11 road upgrade is to improve the quality of	f the roa	d sect	on which may
have an adequate remaining structural life but which has an una	cceptable	e qual	ity of service.
Improvements are normally applied to roads to improve quality of service on existing roads such as			
relieving traffic congestion, improving road safety, improving overtaking opportunities, etc.			

17. How does the project fit into the National Development Plan for 2030?		Please explain
Improved road safety and quality of service of prov	incial routes.	
18. Please describe how the general objective set out in section 23 of NEMA have been tak	s of Integrated Environmental N ten into account.	lanagement as
The following provides an analysis of how the ob (IEM) have been considered in the current SANRA is to:	jectives of integrated environment L N11 road upgrade. The general	al management objective of IEM
(a) promote the integration of the principles of environmental management set out in section 2 into the making of all decisions which may have a significant effect on the environment;	Alignment with NEMA principles of (see Section 19 assessment below	Jescribed below w).
(b) identify, predict and evaluate the actual and potential impact on the environment, socio- economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimizing negative impacts, maximizing benefits and promoting compliance with the principles of environmental management set out in section 2;	Implicit in the current EIA process	
(c) ensure that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them:	Implicit in the current EIA process	
(d) ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment;	 The current EIA process has included a comprehensive PP process, including: Publicised the project through visible signage, local and regional press advertes identification of local stakeholders throug engagement with Steve Tshwete LM, War Councillors and other government official and parastatals. Engagement with public during publi meeting and telephonic, postal and ema correspondence. 	
(e) ensure the consideration of environmental attributes in management and decision-making which may have a significant effect on the environment; and	A comprehensive assessment of of impacts has been conducted as BAR.	the significance s part of the
(f) identify and employ the modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in section 23.	A comprehensive baseline s consideration of environmenta conducted prior to selecting inclusion in this EIA assessment.	tudy, including l issues, was alternatives for

19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account			
2. (1) The principles set out in this section apply throughout the Republic to the actions of all organs of state that may significantly affect the	Not Applicable	Not Applicable	
 (a) shall apply alongside all other appropriate and relevant considerations, including the State's responsibility to respect, protect, promote and fulfil the social and economic rights in Chapter 2 of the Constitution and in particular the basic needs of categories of persons disadvantaged by unfair discrimination; 	The onus is on the proponent to demonstrate to the authorizing agency (DEA) that the State will not be abrogating its responsibility by authorizing the proposed development.	Complies The EIA process has been undertaken in order to provide the relevant decision-makers with the required information. The required EIA should provide sufficient information for the relevant authority to make a defendable and informed decision.	
(b) serve as the general framework within which environmental management and implementation plans must be formulated;	The onus is on the proponent to demonstrate to DEA that the NEMA principles will not compromised.	Complies It is the opinion of this review that the proposed project does not conflict with NEMA principles in such a manner that it places undue risks on the natural or socio-economic environment. Mitigation measures must be effectively implemented	
(c) serve as guidelines by reference to which any organ of state must exercise any function when taking any decision in terms of this Act or any statutory provision concerning the protection of the environment;	The onus is on the proponent to demonstrate to the authorizing agency (DEA) that in providing environmental authorisation the principles of NEMA are duly addressed.	Complies The EIA process has been undertaken in order to provide the relevant decision-makers with the required information. The required EIA should provide sufficient information for the relevant authority to make a defendable and informed decision.	
(d) serve as principles by reference to which a conciliator appointed under this Act must make recommendations; and	Not Applicable	Not Applicable	

(e) guide the interpretation, administration and implementation of this Act, and any other law concerned with the protection or management of the environment.	Not Applicable	Not Applicable
(2) Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.	The EIA process must demonstrate that the needs of local people will be adequately addressed and that the development will serve the interests of the public equitably.	Complies The proposed project will not result in any undue or unacceptable impacts on the local socio-economic environment. Nor will any impacts be unfairly distributed. Recommendations made in the
		BAR must be adopted.
(3) Development must be socially, environmentally and economically sustainable.	The EIA process must demonstrate that the development is socially, environmentally and economically sustainable.	Complies There is no indication that the proposed project would result in undue or environmental, social and economic impacts that would place the sustainability of local natural systems or the project at risk. Recommendations made in the BAR must be adopted.
(4) (a) Sustainable development r	requires the consideration of all rele	vant factors including the
 (i) that the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied; 	The development should not result in a significant loss of biodiversity. Should any loss occur then the project should seek to minimise or remedy the impact or provide suitable off- sets.	Complies Disturbance of local ecosystems must be avoided or impacts must be mitigated. A rehabilitation plan will assist in reducing the impact and providing benefits in terms of the re-establishment of natural vegetation. The recommendations made in the Vegetation Assessment must be adopted

(ii) that pollution and degradation of the environment	Certain activities associated with the project carry risks in	Complies
are avoided, or, where they cannot be altogether avoided	terms of pollution and environmental degradation	The BAR notes that impacts with regard to pollution and
are minimised and remedied;	This includes:	degradation of the environment
	Storm water run-off	can be managed and will not
	from the new road surfaces.	result in an unacceptable impact on the local
		environment.
		The recommendations made in the BAR must be adopted.
		Particular focus must be given
		to the Environmental Management Programme with
		regard to:
		stormwater.
(iii) that the disturbance of	The proponent would need to	Complies
constitute the nation's cultural	impact on sites of valuable	Heritage Impact Assessment
heritage is avoided, or where it	cultural and historical heritage.	conducted
minimised and remedied;		Recommendations made in the
		Heritage Impact Assessment
(iv) that waste is avoided or	Certain activities associated	must be adopted.
where it cannot be altogether	with the project carry risks in	Compileo
avoided, minimised and re-used	terms of pollution and environmental degradation	The BAR notes that impacts with regard to pollution and
otherwise disposed of in a	chritoninontal degradation.	degradation of the environment
responsible manner;		can be managed and will not
		on the local environment.
		The recommendations made in
		the BAR must be adopted.
		Particular focus must be given
		to the Environmental Management Programme
(v) that the use and exploitation	Not Applicable - the project	Not Applicable
of non-renewable natural	does not involve the exploitation	
equitable, and takes into		
account the consequences of		
the depletion of the resource.		

(vi) that the development, use and exploitation of renewable	The project should not involve the unsustainable use or	Complies
resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;	renewable resources and ecosystems, nor should any related secondary impacts result in increased resource	The proponent does not intend to and neither will they support the over-use of groundwater as a renewable resource.
		Mitigation measures must be effectively implemented, especially on-going monitoring of groundwater levels.

11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Environmental Management Act 1998	The activity triggers activities listed in NEMA GN	Department of Environmental Affairs	1998 (Amended in 2014)
(Act No. 107 of 1998)	R983.	(DEA)	
Environmental Impact	The activity triggers	Department of	1998
2014: Government Notice	R983.	(DEA)	
No. R 982, No. R. 983 and			
(Act No. 107 of 1998)			
National Environmental	The project will require a	Department of	2004
Management: Biodiversity	section of vegetation be	Environmental Affairs	
(Act No 10 of 2004)	on the biodiversity of the		
	area.	D	1000
Act No. 36 of 1998	The project occurs within 32 meters of various	Department of Water & Sanitation (DWS)	1998
	watercourses and within		
	500 meters of some wetlands.		
National Heritage	The project may impact	South African Heritage	1999
Resources Act, 1999 (Act No. 25 of 1999)	sensitive heritage	Resources Agency (SAHRA)	
Mpumalanga Nature	The project may implicate	Mpumalanga Tourism	1998
Conservation Act (Act No.	on species listed in this act,	and Parks Agency	
10 01 1990)	weeds and plants.		

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation YES NO

phase?

If YES, what estimated quantity will be produced per month?

10 m³

How will the construction solid waste be disposed of (describe)?

All solid waste will be collected at a central location and will be stored temporarily until it can be removed to an appropriately permitted landfill site near the construction site.

Where will the construction solid waste be disposed of (describe)?

Solid waste to be removed to an appropriately permitted landfill site near the construction site.

Will the activity produce solid waste during its operational phase? If YES, what estimated quantity will be produced per month?

YES NO m³

How will the solid waste be disposed of (describe)?

N/A

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

N/A

Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)? N/A

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA? YES NO If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility? YES NO If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

YES	NO
	m ³
VEC	

If YES, what estimated quantity will be produced per month?

Will the activity produce any effluent that will be treated and/or disposed of on site? **YES NO**

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another YES facility?

If YES, provide the particulars of the facility:

Facility name: N/A Contact person:

NO

Postal address: Postal code:	
Telephone:	Cell:
E-mail:	Fax:

BASIC ASSESSMENT REPORT

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

N/A		

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other that exhaust emissions and dust associated with construction phase activities?

If YES, is it controlled by any legislation of any sphere of government?

If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the emissions in terms of type and concentration:

There could be nuisance dust and exhaust emissions from construction vehicles due to construction activities.

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

e) Generation of noise

Will the activity generate noise? If YES, is it controlled by any legislation of any sphere of government?

Describe the noise in terms of type and level:

Noise generated will be typical construction noise as a result of the movement of hauling trucks and graders. The noise nuisance will be managed in terms of the EMP and the applicable sections of the Occupational Health and Safety Act (OHSA) and relevant Construction Regulations (CR).

Construction activities will only take place during the day, to prevent noise disturbance in the area during the evenings.

13. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

Municipal Water board Groundwater dam or lake Other not use water

YES	NO
YES	NO

NO

NO

NO

YES

YES

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?

YES NO

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

14. ENERGY EFFICIENCY

Describe the design measures, if any, which have been taken to ensure that the activity is energy efficient:

N/A

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

N/A

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

1. For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A):

2. Paragraphs 1 - 6 below must be completed for each alternative.

3. Has a specialist been consulted to assist with the completion of this section? **YES** NO If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

Property	Province Mpumalanga Province			
description/physical	District Municipality	Nkangala District Municipality		
address:	Local Municipality	Steve Tshwete Local Municipality		
	Ward Number(s)	3		
	Farm Name(s) and Number(s)	Farm 1: Bosmanslaagte, 181/IS		
		Farm 2: Boschmansfontein, 182/IS		
		Farm 3: Groot Drakenstein, 157/IS		
		Farm 4: Driepan, 156/IS		
	Portion Number(s)	Farm 1: 1, 16, 21		
		Farm 2: 7		
		Farm 3: 1, 2		
		Farm 4: 1		
	SG Codes	Farm 1: T0IS0000000018100001		
		T0IS0000000018100016		
		T0IS0000000018100021		
		Farm 2: T0IS0000000018200007		
		Farm 3: T0IS0000000015700001		
		T0IS0000000015700002		
		Farm 4: T0IS0000000015600001		
	Where a large number of propertie	s are involved (e.g. linear activities), please		
	attach a full list to this application i	including the same information as indicated		
	above.			
-				
Current land-use	Affected land: Road Reserve			
zoning as per local	Surrounding land: Urban and transformed for cultivation and grazing			
municipality				
IDP/records:	(not affected by the proposed road	upgrade development)		
	In instances where there is more	than one current land-use zoning, please		
	attach a list of current land use zon	nings that also indicate which portions each		
	use pertains to, to this application.			

Is a change of land-use or a consent use application required?

YES NO

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper
						than 1:5
Alternative S2	? (if any):					
Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper
						than 1:5
Alternative S3	} (if any):					
Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper
						than 1:5

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:



3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following?

	Alternative S1:		A	Iternat	tive S2	Alterna	t ive S3
			(i	i f any):		(if any):	
Shallow water table (less than 1.5m deep)	YES	NO		YES	NO	YES	NO
Dolomite, sinkhole or doline areas	YES	NO		YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES	NO		¥ES	NO	<u>YES</u>	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO		YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO		YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO		YES	NO	YES	NO
Any other unstable soil or geological feature	YES	NO		YES	NO	YES	NO
An area sensitive to erosion	YES	NO		YES	NO	YES	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

4. GROUNDCOVER

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition [⊑]	Natural veld with scattered aliens ^E	Natural veld with heavy alien infestation ^E	Veld dominated by alien species ^E	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an "E "is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

5. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River	YES	NO	UNSURE
Non-Perennial River	YES	NO	UNSURE
Permanent Wetland	YES	NO	UNSURE
Seasonal Wetland	YES	NO	UNSURE
Artificial Wetland	YES	NO	UNSURE
Estuarine / Lagoonal wetland	YES	NO	UNSURE

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

A number of rivers were found to occur within 500m of the N11 road, this includes the East Woes-Alleenspruit River, Klein Olifants River (tributary of the Olifants River), , Bosman River, Bosmanpan River and the Zevenfonteinspruit River. However, only the Bosmanpan and Bosman Rivers will be affected by the proposed road upgrade.

The N11 section proposed for upgrade is also in close proximity to a number of wetlands, some of which are associated with the Eastern Temperate Freshwater Wetland vegetation type, as discussed in section 9(d) below. Images of some of the wetlands observed on site can be found in Appendix B below.

6. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

Natural area	Dam or reservoir	Polo fields
Low density residential	Hospital/medical centre	Filling station ^H
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation

Informal residential ^A	Church	Agriculture
Retail commercial & warehousing	Old age home	River, stream or wetland
Light industrial	Sewage treatment plant ^A	Nature conservation area
Medium industrial AN	Train station or shunting yard N	Mountain, koppie or ridge
Heavy industrial AN	Railway line ^N	Museum
Power station	Major road (4 lanes or more) N	Historical building
Office/consulting room	Airport ^N	Protected Area
Military or police	Harbour	Gravovard
base/station/compound		Glaveyalu
Spoil heap or slimes dam ^A	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	Other land uses (describe)

If any of the boxes marked with an "^N "are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)	YES	NO
Core area of a protected area?	YES	NO
Buffer area of a protected area?	YES	NO
Planned expansion area of an existing protected area?	YES	NO
Existing offset area associated with a previous Environmental Authorisation?	YES	NO
Buffer area of the SKA?	YES	NO

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

7. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:

YES	NO	
Uncertain		

A number of potential Historical Period heritage features occur outside and in close proximity of proposed N11 road upgrade and borrow pit areas. A poorly preserved Historical Period farmstead on the Klein Drakenstein is of medium significance but the site occurs away from the road upgrade zones and no direct impact is foreseen on this resource. A small rectangular sandstone enclosure is of medium-low significance and it is located in close proximity of road upgrade zones. A peripheral impact on the structure could occur but the threshold of the potential impact could be limited to a low impact by implementation of mitigation measures. A well preserved rectangular house and a number of farm buildings on the farm Bosmanslaagte occur in close proximity of the road upgrade zones. As such, a peripheral impact on these resources could occur but the threshold can be limited with mitigation measures. A poorly preserved one room square structure and two dilapidated multi-room buildings of more recent age occur on the farm Klein Drakenstein, in close proximity to the road upgrade zone. These are of low significance, and potential impacts on them can be mitigated to a negligible level

It is the opinion of the archaeologist that the proposed N11 road upgrade may proceed from a culture resources management perspective, provided that the mitigation measures as endorsed by the relevant Heritage Resources Agency are implemented.

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

N/A

Will any building or structure older than 60 years be affected in any way? Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

YES	NO			
YES	NO			

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

Steve Tshwete Local Municipality has a total population of about 230 000 people of which 107 000 people are economically active (employed or unemployed but looking for work), and of these, 19.7% are unemployed. Of the 53 630 economically active youth in the area, 27.1% are unemployed (StatsSA, 2011).

Economic profile of local municipality:

Steve Tshwete LM economy is the second dominant economy in Nkangala region. The LM is the host to a number of large industries as well as government departments and as a result strives to provide service to the satisfaction of its customers. Economic activities vary from mining, power generation, metallurgic industries, dry land and subsistence agriculture to eco-tourism. The strong manufacturing

industry is dependent on the relatively cheap supply of coal. Coal mining is mainly carried out by opencast techniques, high extraction underground operations and conventional board-and-pillar underground operations. The coal mines also provide essential fuel to the local power stations.

Agriculture, mining and manufacturing sectors are contributing a large amount to economic growth and employment creation in our municipality. There is a competition between agriculture and mining sectors over land.

Level of education:

The average level of education for individuals aged 20 years and older:				
Level of education	Percentage of total			
No schooling	3.1%			
Matric	18.5%			
Higher education	2.2%			

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?

What is the expected yearly income that will be generated by or as a result of the Unknown activity?

Will the activity contribute to service infrastructure?

Is the activity a public amenity?

How many new employment opportunities will be created in the development and construction phase of the activity/ies?

What is the expected value of the employment opportunities during the development and construction phase?

What percentage of this will accrue to previously disadvantaged individuals? How many permanent new employment opportunities will be created during the operational phase of the activity?

What is the expected current value of the employment opportunities during the first 10 years?

What percentage of this will accrue to previously disadvantaged individuals?

9. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult http://bgis.sanbi.org or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

R 180 million

NO

NO

YES

YES

R 12,000,000

Unknown

Unknown

Unknown

Zero

150

a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)

Systematic Biodiversity Planning Category		If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan			
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	 The project area was assessed using a Spatial Planning tool – Mpumalanga Biodiversity Conservation Plan (MBCP). According to this biodiversity plan, the project area falls into three of its 7 categories, namely: 4 - "Important and Necessary Areas" 6 - "Areas of Least Concern" 7 - "Areas with No Natural Habitat Remaining" 	

b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	15%	The natural habitat in the project area is attributed to the vegetation type Eastern temperate freshwater wetlands, associated with the water courses.
Near Natural (includes areas with low to moderate level of alien invasive plants)	10%	A large portion of the Eastern Highveld Grassland is transformed, a minor portion in the study area remains near natural state.
Degraded (includes areas heavily invaded by alien plants)	15%	There are a number of invasive species present within the study area.
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	60%	A greater portion of the habitat, specifically the vegetation cover of the study area has been transformed due to roads, forest plantations; crop/cultivated land and grazing.

C)

- Complete the table to indicate:
 (i) the type of vegetation, including its ecosystem status, present on the site; and
 (ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		Aquatic Ecosystems						
Ecosystem threat	Critical	Wetland (including rivers,						
status as per the	Endangered	depressions, channellec unchannelled wetlands, seeps pans, and artific		innelled and	Estuary		Coastline	
Environmental	Vulnerable			nd artificial				
Management:	least	wetlands)						
Biodiversity Act (Act Three No. 10 of 2004)	Threatened	YES	NO	UNSURE	YES	NO	YES	NO

d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

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• CLIMATE

The study area normally received about 570 mm rain per year, with most rainfall occurring during summer. The lowest rainfall (0 mm) falls in June and the highest (107 mm) in November. The average midday temperatures range from 15.9°C in June to 24.6°C in January. The region is the coldest during July when the temperatures drop to 0.7°C on average during the night (SA Explorer, 2015) (Figure 9.1).



Figure 9.1: Average rainfall and temperature variation over a 12 month period throughout the study area.

• TOPOGRAPHY

The topography of the study area ranges from 1640 m above sea level to 1660 m above sea level, as indicated in Figure 9.2 below.



Figure 9.2: Topography map of the study area proposed for the N11 road upgrade.

GEOLOGY AND SOILS

The geology of the study area is characterised by red to yellow sandy soils of the Ba and Bb land types found on shales and sandstones of the Madzaringwe Formation (Karoo Supergroup). The land type classification comprises of 65% soil pattern type Bb and 30% soil pattern type Ba. These land types are usually associated with flat or slightly undulating landscapes.

• VEGETATION

According to SANBI (Mucina and Rutherford, 2006) the vegetation type of the study area surrounding the N11 route is the Eastern Highveld Grassland (Gm12) and the Eastern Temperate Freshwater Wetland (AZf3).



Figure 9.3: SANBI vegetation map of the surrounding area for the proposed N11 road upgrade in Hendrina, Mpumalanga.

Eastern Highveld Grassland occurs in Mpumalanga and Gauteng Provinces, it is found on undulating plains and is typically a short dense grassland dominated by *Aristida, Digitaria, Eragrostis, Themeda* and *Tristachya*; with rocky outcrops occurring occasionally that may support woody species such as *Acacia caffra, Celtis africana, Diospyros lycioides, Painari capensis, Protea caffra, Protea welwitschii* and *Rhus magalismontanum*. This vegetation type is listed as "*endangered*" by Mucina and Rutherford (2006).

Eastern Temperate Freshwater Wetlands are found on flat landscapes or shallow depressions temporarily filled with water bodies supporting zoned systems of aquatic and hygrophilous vegetation of temporarily flooded grasslands and ephemeral herblands.

• MPUMALANGA BIODIVERSITY CONSERVATION PLAN (MBCP)

The MBCP has used information obtained through national spatial planning tools which have been mapped at a larger scale, refined them to a finer scale and provided biodiversity planning recommendations which are relevant to the Mpumalanga Province.

According to the MBCP, threatened ecosystems are classified into four categories, namely:

- Critically Endangered;
- Endangered;
- Vulnerable; and
- Protected Ecosystem

This classification is based on the extent of remaining habitat. According to the MBCP, the study area is classified as "*Vulnerable*" as this ecosystem has undergone some ecological degradation with a risk of irreversible transformation.
There are 7 categories of biodiversity in the MBCP map. These categories are ranked according to ecological and biodiversity importance. The categories are as follows:

- 1. Protected areas already protected and managed for conservation;
- 2. Irreplaceable areas no other options available to meet targets protection crucial;
- 3. Highly significant areas protection needed, very limited choice for meeting targets;
- 4. Important and Necessary areas protection needed, greater choice in meeting targets;
- 5. Ecological Corridors mixed natural and transformed areas, identified for long term connectivity and biological movement;
- 6. Areas of Least Concern natural areas with most choices, including for development;
- 7. Areas with no Natural Habitat Remaining transformed areas that make no contribution to meeting targets.

The study area falls within three of the seven categories of biodiversity (Figure 9.4 below). The categories are:

- 4. Important and Necessary areas
- 6. Areas of Least Concern
- 7. Areas with no Natural Habitat Remaining.



Figure 9.4: MBCP Biodiversity map of the study area proposed for the N11 road upgrade in Hendrina, Mpumalanga.

Majority of the study area occurs in "Areas of Least Concern" and "Areas with no Natural Habitat Remaining". The MBCP recommends that for the former areas, all land uses are permitted but there may be several restrictions, wherein the latter have very little biodiversity value.

A smaller portion of the study area falls within the "*Important and Necessary Areas*". The MBCP recommends that these areas should remain unaltered and be managed for biodiversity by various means.

• WATERBODIES

A number of rivers occur within the study area proposed for the N11 road upgrade. This includes the East Woes-

Alleenspruit River, Klein Olifants River, Zevenfonteinspruit River, Bosman River and the Bosmanspan River. However, only the Bosman River and Bosmanspan River will be directly affected by the proposed road upgrade, as the road is within the 32 metre buffer of the two rivers.

The following wetland types are also found within 500m of the current N11 route (refer to Figure 9.5 below):

- Valley Floor : Channelled valley-bottom wetland
 - Small depressional areas within a channelled valley-bottom wetland can result in the temporary containment and storage of water within the wetland. Water generally exits in the form of diffuse surface flow and interflow, with the infiltration and evaporation of water from these wetlands also being potentially significant.

• Bench Flat

A near-level wetland area (i.e. with little or no relief) with little or no gradient, situated on a plain or a bench in terms of landscape setting. The primary source of water is precipitation, with the exception of flats along the coast (usually in a plain setting) where the water table (i.e. groundwater) may rise to the surface or near to the surface in areas of little or no relief because of the location near to the base level of the land surface represented by the presence of the ocean. Dominant hydrodynamics are bidirectional vertical fluctuations, although there may be limited multidirectional horizontal water flow in some cases. Water exits in a flat through evaporation and infiltration.

• Bench depression

 A near-level wetland area (i.e. with little or no relief) with little or no gradient, situated on a plain or a bench in terms of landscape setting. A depression is a landform with closed elevation contours that increases in depth from the perimeter to the central area of the greatest depth, where water accumulates. Water sources are precipitation, ground water discharge, interflow and overland flow.

• Slope seep

 An inclined stretch of ground that is not part of a valley floor, typically located on the side of a mountain, hill or valley. A slope seep is a wetland area located on gently sloping land dominated by the gravity driven movement of material down-slope. Seeps are generally associated with strong, unidirectional flow of water horizontally. Water input is primarily groundwater or precipitation.



Figure 9.5: NFEPA Wetlands, Rivers and drainage associated with the study area for the proposed N11 road upgrade in Hendrina, Mpumalanga.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	1. Lowvelder Newspaper	
	2. Highvelder Newspaper	
Date published	1. 17 July 2015	
	2. 17 July 2015	
	Latitude	Longitude
	1. 26°9'29.48" S	29°42'57.39" E
	2. 26°8'52.89" S	29°42'29.26" E
Site notice position	3. 26°0'19.49" S	29°39'1.23" E
Sile notice position	4. 26°0'19.55" S	29°39'1.25" E
	5. 26°4'47.75" S	29°41'16.42" E
	6. 26°4'47.72" S	29°41'16.41" E
	7. 26°9'4.44" S	29°42'48.93" E
Date placed	1. 10 July 2015	
	2. 10 July 2015	

Included proof of the placement of the relevant advertisements and notices in Appendix E



12	HOËVELDER	17 Julie 2015
BOEDELKENNISGEWING BOEDELNOMMER: 28275/2014 In die boedel van wydr VRil ANDRIES INKOSI, Identiteits- nommer: 550813 6961 084 van ERF 2588, Dubestraat, Hendrina, 1098, Mpumalanga, datum van afsterve 16 Augustus 2014. Getroud binne gemeenskap van goedere met ene Nomvul Ermah Nicoli (Mazibuko). Krediteure en Debiteure in bovermelde boedel word hierme versoek om hul vordering in te lewer en hulle skulde te betaal by ondergetekende, binne 'n tydperk van 30 (DERIG) dae gereken vand atum van hierdie publikase. STRAUV, MERSKOUTEUR AUTOSTRAAT 10 POSTIMET SUITE BS2 - PRIVAATSAK X 9013 ERMEID, 2351 TEL-017 811 5353 FAKS: 017 811 5353 FAKS: 017 811 5355 IV: CS0128 J./JB STRAUSS / CS EARNIN RESS ODO-+ PER MONTHH WHILE WORKING WITH CHILDREN We are looking for motivated Iadies, with own transport, who are sports orientated and have a	Ons benodig die dienste van 'n V ELEKTRISIËN Vereistes:	Lees Hoëvelder aanlyn
passion for working with children between 2-10 years old You can earn a HIGH INCOME and become financially independent. Control your working hours within a fun and rewarding environment. START-UP FEE OF R6 500 (ONCE-OFF) IS REQUIRED This will indude training (theory and practical), operational manuals and necessary equipment. This operational license is valid countrywide If this this the opportunity you are looking for then FAX DETAILS OF 1-PAGE TO: 086 500 1295 for attention Maria	 Persoon onder 40 jr Leergierig Goeie menseverhoudings - vriendelik, eerlik, pligsgetrou Fisies fiks en gesond - 'n vereiste! Lagspanning Kommersieel Pos onmiddellik beskikbaar. Salaris en voordele onderhandelbaar met onderhoud <i>U is welkom om aansoekvorms by</i> <i>Dimag Konstruksie, Naudéstr 5,</i> <i>Ermelo af te haal.</i> Navrae: Jaco vd Merwe / Magda vd Merwe / Magda de Beer 	
KENNISGEWING VAN VERKOPING SAAKNOMME: 4492/2015 In die Hooggeregshof Suid-Afrika (Gauteng Divisie, Pretoria) in die saak tussen MORGAN ABATTOIR (PTV) ILD, Eksekusie Skuldeiser en LUTTIG VAN HUYSTEEN Noede Eksekusieskuldenaar; LUTTIG VAN HUYSTEEN, Derde Eksekusieskulde- naar; CA VAN HUYSTEEN, Derde Eksekusieskulde- naar; VAN DEKSEN, Derde Eksekusieskulde- naar; VAN HUYSTEEN, Derde Eksekusieskusieskulde- naar; VAN HUYSTEN, DERSENSEN, DERSENSEN, DERSENSENSEN, DERSENSENSENSENSENSENSENSENSENSENSENSENSENS	017 811 2603 MIDTEST ERMELO Murraystraat 51, Ermelo 017 811 2069 Weens die ekonomiese druk het ons gevoel om die publiek te help deur ons pryse vir die toets van motorvoertuie aan te pas na verlede jaar se prys toe en sodoende darem bietjie te help. Met ons 3 ondersoekers sal ons poog om 'n flinke diens te lewer en jou as motoris die gemoedsrus te gee dat die motorvoertuig padwaardig is. Ons wil net vir Mrr. JJ Neethling welkom heet by ons nadat hy die diens van die stadsraad verlaat het en nou voltyds motorvoertuig gaan toets. Die volgende tariewe is van toepassing: LIGTE MOTORVOERTUIG R350 ALLE LIGTE SLEEPWAENS, KARAVANE EN MOTORFIETSE R450 Nommerplate word ook hier vervaardig en kan ook op u voertuig aangebring word. R450 Nommerplate word ook hier vervaardig en kan ook op u voertuig aangebring word. So Midtest is hier om vir alle inwoners van Ermelo en omgewing 'n flinke	CASAPPER MISSION Devision Devision Notation ADVENTISING and NEWS Newson ADVENTISING and NEWS Newson ADVENTISING and NEWS Newson Newson Newson ADVENTISING and NEWS Newson Newson Newson ADVENTISING and NEWS Newson Newson Newson Newson
NOTICE OF BASIC ASSESSMENT AND WATER USE LICENCE APPLICATION AND INITIATION TO REGISTER AS AN I&AP Notice is given in terms of regulation 19 as published in the Government Gazette No 982 Envi- ronmental Impact Assessment (E(A) regulations of the National Environmental Management Act (Act No 107 of 1998, second amended Act of 2013) for intent to submit a Basic assessment to the Depart- ment of Environmental Adhairs (DEA) for environmental Adhairs (DEA) in the Muumalanga Province, Part of this concept is to construct Dypass roads during construction. The South African National Roads Agency SOC Limited (SANRAL) proposes to upgrade various sections of the N11 in Hendina (near Middelburg) in the Mpumalanga Province, Part of this concept is to construct Dypass roads during construction. The good edvelopment will include a Water Use License Application as regulated by the Nation- aldysmith in the south to the Botswana border in the north. The proposed development will include a Water Use License Application as regulated by the Minerals and Petroleum Resources Act (No. 25 of 1999). Mining Right as regulated by the Mineral And Petroleum Resources Act (No. 25 of 1999). Mongenetics You are invited to register as an Interested and Mrest Mercel Party (I&BA). Should you have any comments or queries, please contact: <u>Consultant:</u> EOH Consulta Environmental Services You are invited to register as an Interested and Mrest Mossen EOH Business Park, Block D, 1 Osborne Lane, Bedfordview, Gauteng, 2007 Tel: 0116 07 1100 (/Fax: 011161 922) Email: Shafick.Hoossein@eoh.co.za	So Midtest is hier om vir alle inwoners van Ermelo en omgewing 'n flinke en vriendelike diens te lewer sonder om in lang rye te staan. NOTICE FOR A Notice In respect of a license application in terms of the This notice serves to inform parties that my be interested ter referred to as "the applicant", has submitted an applic G/2015/07/08/0001. ERF 722 CAROLINA 17 KERK STREET, CAROLINA MPUMALANGA The purpose of the application is for the applicant to be of as detailed in the application. Arrangements for viewing the Controller of Petroleum Products by: Tel: 013 658 1400 or fax: 013 656 4898 or Email: MpuPetroleumlicensing@energy.gov.za Any objections to the issuing of a license in respect of thin number above, must be lodged with the Controller of Petroleum from the date of publication of this notice. Such objection Physical address: The Controller of Petroleum Products Department of Energy Cnr Haig & Rhodes Ave, Old Absa Building, Witbank Postal address: The Controller of Petroleum Products Department of Energy P O Box 17851, Witbank, 1035	BERNELLDER ACCOMPARIANCE CONSTRUCTION CC, hereinaf- ation for a RETAIL license, application number granted a license to undertake petroleum retailing activities the application documentation can be made by contacting s application, which must clearly quote the application for products within a period of twenty (20) working days n must be lodged at the following physical or postal address:



2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 733.

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 733

Title, Name and	Affiliation/ key stakeholder	Contact details (tel number or e-
Surname	status	mail address)
	Department of Water and	RamudzuliA@dwa.gov.za
Ms Arinao Ramudzuli	Sanitation (DWS)	
	Department of Environmental	WHector@environment.gov.za
Mr Wayne Hector	Affairs (DEA)	
	Department of Environmental	LMokoena@environment.gov.za
Ms Lerato Mokoena	Affairs (DEA)	
	Mpumalanga Department of	dtswai@mpg.gov.za
	Agriculture and Rural	
Dineo Tswai	Development	
	South African Heritage	neels@exigo3.com
Mr Neels Kruger	Resources Agency (SAHRA)	
	Steve Tshwete LM – IEMU	ericr@stlm.gov.za
Mr Eric Rashivumvu		
	Steve Tshwete – Town Planning	meshackm@stlm.gov.za
Mr Meshack Mahamba		
	Steve Ishwete – Roads	lindiwes@stim.gov.za
Ms Lindiwe Silolo		Autor Tabida a dalara a Odra ara a
	Mpumalanga Department of	Aubrey. I snivnandekano@dmr.gov.za
Mr A Tshivandhekano	Mineral Resources (DMR)	
	Mpumalanga Department of	Lydia.Maphopha@dmr.gov.za
Ms L Maphopha	Mineral Resources (DMR)	
	Ward Councillor	elphusm@gmail.com
Mr Elphus Mathebula		
	Headmaster – Gekombineerde	hendrinaskl@mweb.co.za
Mr Williams	Skool Hendrina	

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
No issues yet, as draft BAR still has to undergo	
public review. No -one from the public has	

responded to the notices as yet.	

4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as Appendix E3.

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address
DWS	Ms Arinao Ramudzuli			RamudzuliA@dwa.gov.za	
DEA	Mr Wayne Hector			WHector@environment.gov.za	
DEA	Ms Lerato Mokoena			LMokoena@environment.gov.za	
Mpumalanga DARD	Dineo Tswai			dtswai@mpg.gov.za	
Mpumalanga DMR	Mr Aubrey Tshivhandekano			Aubrey.Tshivhandekano@dmr.gov.za	

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E4.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as appendix E5.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

NOTICE OF BASIC ASSESSMENT AND WATE NOTIFICATION	R USE LICENCE APPLICATION
EQH	
IMPROVEMENT OF THE NATIONAL ROUTE N11 SECTION 9 BETWEEN HE (KM 18.56) MPUMALANGA PR	NDRINA (KM0.00) AND HENDRINA POWER STATION
Notice is given in terms of regulation 19 as published in the Government G regulations of the National Environmental Management Act (Act No 107 of 1998, assessment to the Department of Environmental Affairs (DEA) for environmental a	azette No 982 Environmental Impact Assessment (EIA) second amended Act of 2013) for intent to submit a Basic iuthorization.
The South African National Roads Agency SOC Limited (SANRAL) proposes to Middelburg) in the Mpumalanga Province. Part of this concept is to construct by SANRAL's program for the staged improvement of the entire N11 route from Lady proposed development will include a Water Use License Application as regulated Right as regulated by the Minerals and Petroleum Resources Development Act i Heritage Resources Agency as regulated by the National Heritage Resources Act) upgrade various sections of the N11 in Hendrina (near pass roads during construction. The project forms part of smith in the south to the Botswana border in the north. The I by the National Water Act (Act No. 36 of 1998), a Mining (Act No. 28 of 2002) and approval from the South African (No. 25 of 1999).
Applicant: South African National Roads Agency SOC Limited	
Consultant: EOH Coastal & Environmental Services	
You are invited to register as an Interested and Affected Party (I&AP). Should you have any comments or queries, please contact: <u>Contact details:</u> Mr S Hoossein EOH Business Park, Block D, 1 Osborne Lane, Bedfordview, Gauteng, 2007 Tel: 011 607 8100 Fax: 011 616 9929 Email: Shafick.Hoossein@eoh.co.za	PROJECT ROAD



Email: www.eoh.co.za | www.cesnet.co.za

NOTICE OF BASIC ASSESSMENT AND WATER USE LICENCE APPLICATION AND INVITATION TO REGISTER AS AN I&AP

Notice is given in terms of regulation 19 as published in the Government Gazette No 982 Environmental Impact Assessment (EIA) regulations of the National Environmental Management Act (Act No 107 of 1998, second amended Act of 2013) for intent to submit a Basic assessment to the Department of Environmental Affairs (DEA) for environmental authorization.

The South African National Roads Agency SOC Limited (SANRAL) proposes to upgrade various sections of the N11 in Hendrina (near Middelburg) in the Mpumalanga Province. Part of this concept is to construct bypass roads during construction. The project forms part of SANRAL's program for the staged improvement of the entire N11 route from Ladysmith in the south to the Botswana border in the north. The proposed development will include a Water Use License Application as regulated by the National Water Act (Act No. 36 of 1998), a Mining Right as regulated by the Minerals and Petroleum Resources Development Act (Act No. 28 of 2002) and approval from the South African Heritage Resources Agency as regulated by the National Heritage Resources Act (No. 25 of 1999).

Applicant: The South African National Roads Agency SOC Limited

Consultant: EOH Coastal & Environmental Services

You are invited to register as an Interested and Affected Party (I&AP). Should you have any comments or queries, please contact:

Contact details:

Mr S Hoossein EOH Business Park, Block D, 1 Osborne Lane, Bedfordview, Gauteng, 2007 Tel: 011 607 8100 Fax: 011 616 9929 Email: Shafick.Hoossein@eoh.co.za

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

A complete impact assessment in terms of Regulation 19(3) of GN 733 must be included as Appendix F.

DISTRIBUTION OF IMPACTS

The following table provides a summary of the distribution of impacts in terms of High, Medium and Low significance, pre and post mitigation.

	PRE-MITIGATION			POST-MITIGATION		
	LOW MODERATE HIGH			LOW	MODERATE	HIGH
Planning and Design	0	6	4	9	1	0
Construction	2	12+1 beneficial	6	17	3+1 beneficial	0
Operation	0	1	0	1	0	0
TOTAL	2	20	10	27	1	0

Summary of impact assessment significance, pre- and post-mitigation

As can be seen, **ALL HIGH** impacts for all project phases can be mitigated to a **MODERATE** or **LOW** level with the implementation of appropriate mitigation measures.

SUMMARY OF SIGNIFICANT IMPACTS (all impacts that are High pre-mitigation)

The proposed development will result in a number of impacts, both positive and negative, during the Planning and Design, Construction and Operation Phases (see table below). The following table provides a summary of the pre-mitigation impacts that were ranked as **HIGH**.

PLANNING & DESIGN PHASE					
Impacts	Significance pre-mitigation	Significance post- mitigation			
BRIDGE DESIGN	•				
 Bridge design If plans to upgrade and widen bridges over rivers are ineffectively designed they may impede the flow of the rivers and/or cause bank erosion. 	HIGH NEGATIVE	MODERATE NEGATIVE			
HERITAGE					
 Damage to heritage resources Inadequate planning for potential heritage sites that may occur along the road reserve may result in the destruction and exposure thereof. 	HIGH NEGATIVE	LOW NEGATIVE			
ECOLOGICAL					
 Soil erosion and sedimentation Inappropriate road stormwater design may lead to an increase in surface soil erosion and subsequently sedimentation of the surrounding rivers and streams. 	HIGH NEGATIVE	LOW NEGATIVE			
Poor rehabilitation of moderate and high sensitive areas	HIGH	MODERATE			
 Poor planning and design for the utilisation of sensitive aquatic and terrestrial systems could result in the erosion and degradation of water-courses and associated habitats (e.g. wetlands). 	NEGATIVE	NEGATIVE			
	05				
Impacts	CONSTRUCTION PHASE Impacts Significance Significance pre-mitigation				
HAZARDOUS SUBSTANCE STOR	AGE & USAGE				
 Site contamination due to hazardous substance spillage Spillage of any hazardous substances such as fuel, chemicals, paint, etc. could contaminate underlying soil; and surface and groundwater resources. 	HIGH NEGATIVE	LOW NEGATIVE			
WORKER HEALTH AND SAFETY					
 Health and safety risk associated with fires Inadequate attention to fire safety awareness and fire safety equipment could result in an unsafe working environment and the loss of property. 	HIGH NEGATIVE	LOW NEGATIVE			
RIVERS & STREAMS					
 Rivers and streams may be impacted by construction activities Construction activities could pollute and adversely affect 	NEGATIVE	NEGATIVE			
various rivers and streams.					
various rivers and streams. STORMWATER MANAGE	MENT				

 Contaminants such as silt, sand and litter could be transported offsite via surface runoff and contaminate the surrounding environment. 	NEGATIVE	
ECOLOGICAL		
Riparian vegetation may be damaged by construction	HIGH	MODERATE
- Riparian vegetation could be adversely affected by	NEGATIVE	NEGATIVE
construction activities in proximity to river and stream		
crossings.		
HERITAGE		
Damage to heritage resources	HIGH	LOW NEGATIVE
 Construction activities in proximity to heritage sites may result in the destruction and/or exposure thereof. 	NEGATIVE	

2. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment <u>after</u> the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

CONSIDERATION OF ALTERNATIVES

The following alternatives were assessed as part of the Basic Assessment:

- Proposed national road upgrade, with design and alignment alternatives.
- No-Go or no development option.

OPINION OF THE EAP

EOH Coastal & Environmental Services (the EAP) hereby provides the following opinion concerning the proposed upgrade of the N11 route in Hendrina, Mpumalanga Province.

It is the opinion of EOH CES that **NO FATAL FLAWS** are associated with the proposed upgrade of the N11 road in Hendrina and that all impacts can be adequately mitigated to reduce the risk of significance of impacts to an acceptable level.

It is also the opinion of EOH CES that the Basic Assessment Report contains sufficient information to allow DEA to make an informed decision. EOH CES therefore recommends that the application for Authorisation should be approved on condition that the recommended mitigation measures stated herein are effectively implemented.

SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

YES NO

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application.

PLANNING AND DESIGN PHASE

Legislation and policy compliance

 The development must adhere to the relevant legislation and/or policy, e.g. MBCP, Municipal By-laws, SDFs, IDPs, etc.

Stormwater Management

 The drainage systems have been designed by LEO Consulting, a reputable consulting engineering firm registered with CESA and appointed by SANRAL. The stormwater management systems will ensure that no flooding of any facilities occurs, or that sedimentation or erosion of surrounding areas occurs.

Bridge Design

- The bridge and culvert designs must not impede the flow of water or cause erosion in rivers/streams.
- There must be proper drainage of stormwater away from the bridges.
- The design of the bridges must comply with DWS standards and WULAs must be submitted where necessary.

Heritage

 An Archaeological Impact Assessment was conducted, which identified a few resources of medium heritage significance. The recommendation is that these sites and any activity in its surrounds must be monitored in order to avoid the destruction of undetected heritage remains.

Traffic

- Possible demarcation areas for the storage of construction vehicles should be identified.
- An appropriate accommodation of traffic plan must be included in the construction documentation to ensure that the impact of construction vehicles upon the traffic flow is mitigated.

Waste Management

- A proper Waste Management Plan must be designed.

Ecological

- Impacts on surrounding environment and vegetation must be limited to already transformed and degraded areas.
- An Environmental Control Officer (ECO) must be appointed prior construction commencement, to advise on planning that will reduce impact on the surrounding vegetation.
- Appropriate stormwater structures must be designed.

- All road sections situated on slopes must incorporate storm water diversion.
- All stormwater structures must be designed in line with both SANRAL and DWS requirements.
- A 32 metre buffer around all rivers and drainage lines and a 500m buffer around all wetlands must be developed. In areas where this cannot be applied, authorisation must be obtained from DWS.

CONSTRUCTION PHASE

Air pollution

- Cleared surfaces must be dampened whenever possible, especially during dry and windy conditions, to avoid excessive dust generation.
- Any soil excavated, and not utilised for rehabilitation, must be removed from site or covered and no large mounds of soil may be left behind after construction.

Noise pollution

Construction activities close to residential settlements, which include the movement of construction vehicles, should be restricted to normal working hours (7:00am – 17:00pm).

Palaeontology

The EMPr must clearly stipulate that any fossils uncovered during construction should be reported to a palaeontologist.

Hazardous Substances Storage & Usage

- Concrete must not be mixed directly on the ground, or during rainfall events when the potential for transport to the stormwater system is the greatest.
- Concrete must only be mixed in the area demarcated for this purpose and on an impermeable surface.
- Oil trays must be placed under construction machinery to avoid soil contamination.
- All areas affected during the Construction Phase must be rehabilitated.
- Hazardous Chemical Substances Regulations promulgated in terms of the Occupational Health and Safety Act 85 of 1993 and the SABS Code of Practise must be adhered to. This applies to solvents and other chemicals possibly used during the construction process.
- Depending on the nature and extent of the spill, contaminated soil must either be excavated or treated onsite.
- The ECO must have input and review the precise method of treatment of polluted soil. This could involve the application of soil absorbent materials or oil-digestive powders to the contaminated soil.
- If a spill occurs on an impermeable surface such as cement or concrete, the surface spill must be contained using oil absorbent materials.
- Contaminated remediation materials must be carefully removed from the area of the spill so as to prevent further release of petrochemicals to the environment, and stored in suitable containers until appropriate disposal.
- The individual responsible for or the individual who discovers the petrochemical spill must report the incident to the Project Engineer. DEO, ECO and/or Contractor as soon as reasonably possible.
- The petrochemical or hazardous spill must be assessed and the necessary actions required should be undertaken, the immediate response must be to contain the spill.
- The individual(s) that will be handling hazardous materials must be trained to do so.
- Hazardous Chemical Substances Regulations promulgated in terms of the Occupational Health and Safety Act 85 of 1993 and the SABS Code of Practise must be adhered to. This applies to solvents and other chemicals possibly used during construction.
- All hazardous chemicals must be stored properly in a secure, bunded and contained area.

Worker Health & Safety

- The contractor must ensure that operational firefighting equipment is present on site at all times as per Occupational Health and Safety Act.
- All construction foremen must be trained in fire hazard control and firefighting techniques.
- All flammable substances must be stored in dry areas which do not pose an ignition risk to the said substances.
- Open fires must not be permitted on site unless in a demarcated area where the ECO has adequate input and comment.
- No smoking near a flammable substance.
- All cooking shall be done in demarcated areas considered safe in terms of runaway or uncontrolled fires.
- The level of firefighting equipment must be assessed and evaluated thorough a typical risk assessment process.
- Adequate sanitary and ablutions facilities must be provided for construction workers
- The facilities must be serviced regularly to reduce the risk of surface or groundwater pollution.
- Contaminated wastewater must be managed by the Contractor to ensure the existing water resources on the site are not contaminated. All wastewater from general activities in the camp must be collected and removed from the site for appropriate disposal at a licensed facility.

Waste Management

- Construction rubble must be disposed of in predetermined, demarcated spoil dumps that have been approved by Steve Tshwete LM.
- Litter caused by employees must not be tolerated. The DEO and ECO must monitor the sanitation of the work sites as well as the Contractor campsite.
- All construction general waste must be removed from the site and transported to the licenced landfill site located in Hendrina.
- All hazardous waste materials must be stored cautiously as advised by the ECO, and then disposed of
 offsite at the closest licensed hazardous landfill site.
- Contaminants must be stored safely to avoid spillage
- Machinery must be maintained to avoid oil leaks.

Traffic

- A Traffic Management Plan must be designed and implemented.
- Carefully planned traffic diversion lanes should be setup to ensure that traffic flow continues in a safe manner.
- The existing two-way traffic flow on the road should be retained during construction, and no severe delays in travel times are foreseen.

Rivers & Streams

- No construction rubble must be left in or near rivers and streams once construction has been completed.
- Rivers and streams in proximity to the development must be returned to their natural state once construction has been completed.

Stormwater Management

- The site must be managed in a manner that prevents pollution of drains, downstream watercourses or groundwater, due to suspended solids, silt or chemical pollutants.
- Temporary cut-off drains and berms may be required to capture storm water and promote infiltration.

- The area must be monitored by an ECO on a regular basis.

Ecological

- Riparian vegetation must only be removed or relocated under the guidance of a qualified ECO.
- Construction activities must be limited to the designated footprint of the road upgrade route as far as possible.
- Rehabilitation Management Plan and an Erosion Action Plan must be implemented and adhered to for the duration of construction activity.
- The Erosion Action Plan must ensure that all sediment is contained.
- The plans must be incorporated into the EMPr and must draw from the recommendations of the Vegetation Study.

Heritage

Maintenance

 If human graves are exposed during the construction phase, all work activity in the vicinity must cease immediately, and SAHRA, a Heritage Specialist and the SAPS need to be informed.

OPERATIONAL PHASE

- No construction related activities must take place within 20m of visible gravesites.

- SANRAL shall maintain the road

No-Go

If the upgrade does not proceed then none of the negative impacts identified for the planning and design, construction and operational phases will take place.

Is an EMPr attached?

YES NO

The EMPr must be attached as Appendix G.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

Any other information relevant to this application and not previously included must be attached in Appendix J.

NAME OF EAP

SIGNATURE OF EAP

DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information

APPENDIX A MAPS

	MAPS OF THE PROPOSED SITE AREA
1.	Locality Map of the proposed road upgrade
2.	Sensitivity Map
3.	Mpumalanga Biodiversity Conservation Plan (MBCP) Map
4.	Land Use Map
5.	Topography Map
6.	Water bodies Map





Appendix A-1: Locality Map of the study area.



Appendix A-2: Sensitivity Map of the study area.



Appendix A-3: Biodiversity Conservation Map of the study area.



Appendix A-4: Land use Map of the study area.



Appendix A-5: Topography Map of the study area.



Appendix A-6: Water bodies associated with the study area.

APPENDIX B



Middle of Project



End of Project



Some of the wetlands around the study area



APPENDIX C FACILITY ILLUSTRATION(S)









PRELIMINARY DESIGN REPORT

APPENDIX D SPECIALIST REPORTS

- Vegetation Survey and Impact Assessment Heritage Impact Assessment Wetland Study (In progress) Surface Water Report (In progress) _
- _
- _

APPENDIX E PUBLIC PARTICIPATION

Appendix E-1: Proof of advert and signage.

ADVERT PLACED ON LOWVELDER AND HIGHVELDER NEWSPAPERS










Appendix E-2: Stakeholder notification email.

M 🖌 🖌 🖌 🖂	⇒ ↓ SANF	AL Road: Improvement of N	ational Route N11 Secti	on 9 between Hendrina	km 0,00) to	o Hendrina Power Station (km 18,56) - Message (HTML)	
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Delete	Respond	Move	read ¥ Up¥ Tags ⊡	Editing	Zoom		
From: Shafid	k Hoossein <shafick.hoossein@eoh.co.za></shafick.hoossein@eoh.co.za>	>				Sent: Wed 2015/07/22 02:38	PM
To: ericr@	stlm.gov.za; meshackm@stlm.gov.za; lindi	wes@stlm.gov.za; elphusm@gi	nail.com; dtswai@mpg.go	v.za			
Cc: Kim Br Subject: SANR	ent; Andrew Karam AL Road: Improvement of National Rout(e N11 Section 9 between Hen	drina (km 0,00) to Hendr	ina Power Station (km 18,	56)		
🖂 Message 🔁 H	endrina Draft BID.pdf 🛛 🌀 _Certification	htm					
Dear Interested	and Affected Party						5
Dearmiterested	and Arrected Party						
You have been i	dentified as a Stakeholder for the	abovementioned project	t as part of the Envir	onmental Impact Ass	essment, E	Basic Assessment Process in terms of the National Environmental Management Act 1998	
(10/ 01 1356). 11	is serves as formal notification of	the project and a backgr	ounu information uu	cumentis attacheu n	n your inte	ormation.	
Please do not h	esitate to contact me for any furth	er clarity you may requir	e.				
Many thanks							
ch aftal							
Shatick							
	Shafick Hoossein (Pri.Sci.Nat 400064) Gauteng Branch Manager EOH Coastal & Environmental Servici	(11 & Reg EAPSA)					
EOH	EOH Business Park, Block D, 1 Osbor	recence in our industry rne Lane					
	Bedfordview Gauteng South Afric tel: +27 (11) 607 8100 fax: +27 (11) 61	a 6 9929 cell: + 27 72 207 5611					
	shafick.hoossein@eoh.co.za www Consulting Technology Outsour	v.eoh.co.za <u>www.cesnet.co</u> cing	<u>.28</u>				
	u · u · ·						
This e-mail transm attachments hereto authorised to state	ission contains confidential information, , to any person whatsoever. Unauthorise them to be the views of any such entity	which is the property of EOH d disclosure and/or use may . The disclaimer forms part o	Holdings Limited and its result in civil and crimin f the content of this e-m	subsidiaries ("EOH"). No al liability. Any views exp aail in terms of section 11	person, oth ressed in thi of the Elect	her than the recipient (so indicated by the sender) may use or disclose the contents of this message, links or is message are those of the individual sender, except where the message states otherwise and the sender is tronic Communications and Transactions Act, 25 of 2002. Refer to <u>EOH Disclaimer</u>	•
 See more ab 	out: 'Shafick Hoossein'.						•
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Adjacent Landowner Notification Letter



45 mm asphalt surfacing for Hendrina Power Station intersection and Temporary bypass roads that will be utilised during the construction phase. . EOH Coastal & Environmental Services respectfully requests that you please sign this letter and fax or mail it to the address details below to confirm that you have received notification with regard to the above prospecting right application. If you have concerns / objections or any comments (including "no objection"), please attach these to this letter. I have / have no concerns/objections to this prospecting right application Name and SurnameDateDate Should you have concerns/comments/objections please list them below: Any queries with regards to this application can be directed to EOH Coastal & Environmental Services at: Mr S Hoossein EOH Business Park, Block D. 1 Osborne Lane, Bedfordview, Gauteng, 2007 Tel: 011 607 8100 Fax: 011 616 9929 Email: Shafick.Hoossein@eoh.co.za Please feel free to contact me if you have any Sincerely, Mr S Hoossein EOH Gauteng

Adjacent Landowner Notification Emails

100 - 10 -	a Landowner Notification - SANRAL Hendrina Road Upgrade - Message (HTML) (Read-Only)	
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ar Sirs		
use find att	ached the landowner notification of the SANRAL upgrade to the N11 adjacent to you property.	
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	Shaflox Heossein (Ph. Sci. Nat 400084111 & Reg EAPSA)	
100000	BOH Coastal & Environmental Services	
EOH	EOH Business Park, Block D, 1 Osloome Lane	
	teb	
	shafek heassandbach caus www.coh.caus www.canst.caus Consulting Technology Outsearching	
See more a	about: Shafick Hoossein.	
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Menage 7	downer Notification - SAVIRAL Henderus Road Upgrede Notification Lettes odf	
	THE THE AND AND AND	
ear Sir		
ease find att	ached the landowner notification of the SANRAL upgrade to the N11 adjacent to you property.	
anu thanks		
any thanks		
nafick		
	Shafick Hoossein (Pri Sci Na) 400064/11 & Reg EAPSA)	
	Gesting Branch Manager EOH Coasta & Environmental Services	
EOH	Celebrating 25 years of making a difference in our industry EOH Business Park, Block D, 1 Osborne Lane	
	Bedtordview Gauterg South Africa tet - 27 (11) 807 8100 fac: -27 (11) 818 9029 cell: -27 72 207 8811	
	shafek hoosaain@eah.ca.za www.eah.ca.za www.caunai.ca.za	
	Casewind Linearcould, Decomposit	
See more a	about: Shafick Hoossen.	

Proof of registered mail sent to adjacent landonwers.

REGISTERED LETTER Post Office GEREGISTREERDE BRIEF Post Office (with an insurance option/met 'n versekeringsopsie) Full tracking and tracing/Volledige volg en spoor	Postage paid Rc Service fee/Diensgeld Rc Insurance/Versekering Rc Total/Totaal R746.66c
Addressed to/Geadresseer aan MR Neels Euger POBOX 538 HERVERFIE DOPS Postcode Postcode Postcode	Insured value of contents Versekerde waarde van inhoud R Enquiries/Navrae. Toll-free number Tolvry nommer 0800 1111 502
The velue of the contents of fulls latter is as indicated and compensation is not payable for a latter received unconditionally. Compensation is limited to R100,00. No compensation is payable without documentaryproci Optional insurance up to F200,001 as available and applies to domisetic-registered latters only. Die waarde van die inhoud van hierdie brief is soot sangedui en vergoeding sal nie belaik word vir "Inhiefwatsondervoorbehoud ontvangvoordne. Vergoeding isbeperktort R100,00, Gen vergoeding is onder dokumentére bewyse betaalbear inc. Optionals versiering tot R2 000,00 is beskikbaar en is obego binnelandse geregistreerde brieve van toepasting.	REGISTERED LETTER with a domestic fuerome aption) Standcul dop 115 52 RD 981 824 472 ZA CUSTOMER COPY 301028R klientafskrif klientafskrif
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Appendix E-3: Comments and Response Trail

None as yet, as report still has to undergo public comment.

Appendix E-4: Authorities and organs of state notification

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From: Shafic To: ericr@ Cc: Kim Br Subject: SANR Message 元H	ck Hoossein <shafick hoossein@eoh.co.za=""> @stm.gov.za; meshackm@stm.gov.za; lindi rent; Andrew Karam RAL Road: Improvement of National Routt lendrina Draft BID.pdf O_certification</shafick>	> iwes@stlm.gov.za; elphusm@gmail.o e N11 Section 9 between Hendrin u_nhm	com; dtswai@mpg.gov.za a (km 0,00) to Hendrina P	Power Station (km 18,56)	Sent: Wed 2015/07/22 02:	8 PM
Dear Interested	d and Affected Party						
You have been (107 of 1998). T	identified as a Stakeholder for the his serves as formal notification of	abovementioned project as the project and a backgroun	part of the Environm d information docum	nental Impact Asses nent is attached for	sment, Bas your inforr	sic Assessment Process in terms of the National Environmental Management Act 1998 mation.	
Please do not h	esitate to contact me for any furth	ner clarity you may require.					
Many thanks							
Shafick							
EOH	Shafick Hoossein (Pri Sci.Nat 400064/ Gauteng Branch Manager ECH Coastal & Environmental Servici Celebrating 25 years of making a dff EOH Business Park, Block D. 1 Osbor Bedford/vev Gauteng South Afric tet: +27 (11)607 8100 fast +27 (11)61 shafick hoossein@enh.oza www Consulting Technology Outsour	/11 & Reg EAPSA) es ference in our industry me Lane 6 9929 cell: +27 72 207 5611 webh.co.za www.cesnet.co.za cring					
This e-mail transm attachments herete authorised to state	nission contains confidential information, io, to any person whatsoever. Unauthorise a them to be the views of any such entity	which is the property of EOH Hold ed disclosure and/or use may resu /. The disclaimer forms part of the	lings Limited and its subs It in civil and criminal liat content of this e-mail in	sidiaries ("EOH"). No p bility. Any views expres n terms of section 11 of	erson, other sed in this n the Electron	than the recipient (so indicated by the sender) may use or disclose the contents of this message, links or message are those of the individual sender, except where the message states otherwise and the sender is nic Communications and Transactions Act, 25 of 2002. Refer to <u>EOH Disclaimer</u>	•
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Appendix E-5: Interested & Affected Parties – Database

Hendrina Road - IAP Database							
Name/Organisation	Contact person	Address	Tel:	Fax:	cell	e-mail	Method of notice
Initially identified IAPs							
Mpumalanga Department of Water Affairs	Mr Shabangu Sampie	35 Brown Street, Ne	013 759 7440		083 7	shabanguh@dwa.gov.za	E-mail
Department of Environmental Affairs	Mr Wayne Hector and Ms Lerato	Environment House,	012 399 9000	012 359 3625		WHector@environment.gov.za; LMokoena@	E-mail
Mpumalanga Department of Agriculture and Rural	Dineo Tsw ai		013 690 1358		07664	dtswai@mpg.gov.za	E-mail
South African Heritage Resources Agency							
Steve Tshwete - IEMU	Mr Eric Rashivumvu	Corner Walter Sisulu	013 249 0757			ericr@stlm.gov.za	E-mail
Steve Tshw ete - Tow n Planning	Mr Meshack Mahamba	Corner Walter Sisulu	013 249 7306		082 6	meshackm@stlm.gov.za	E-mail
Steve Tshw ete - Roads	Ms Lindiw e Silolo	Corner Walter Sisulu	013 249 7350			lindiw es@stlm.gov.za	E-mail
Ward Councillor	Mr Elphus Mathebula	Corner Walter Sisulu	Street & Wand	erers Avenue,	082 9	elphusm@gmail.com	E-mail
Headmaster: Gekombineerde Skool Hendrina		Schuim Street, Hendrina,					
Mournalance Department of Mineral Resources	Mr A Tshiyandekano	Province House, C/o Paul Kruger & Botha Street	013 653 0500	013 690 3288		Auhrey Tshivbandekano@dmr.gov.za	Fmail
		Province House, C/o Paul Kruger &					
Mpumalanga Department of Mineral Resources	Ms L Maphopha	Botha Street,	013 653 0500	013 690 3288		Lydia.Maphopha@dmr.gov.za	Email
Hendrina Ratepayers Association							
Adjacent Landow ners							
Willie de Klerk	e-mailed					w adeklerk@mw eb.co.za	
Hannes Scheepers	e-mailed					hannesscheepers@lantic.net	
Willie de Klerk	e-mailed					w adeklerk@mw eb.co.za	
Donevan van Rensburg	e-mailed					donevanjvr@gmail.com	
Neels Kruger	Registered letter sent						
Stinus Breedt	Registered letter sent						

Appendix E-6: Meeting Minutes – Department of Environmental Affairs (DEA)

	M	EETING MINUTES
EOH	CLIENT	South African National Roads Agency SOC Limited (SANRAL)
	DATE	30 June 2015
Coastal & Environmental Services	VENUE	Department of Environmental Affairs (DEA), Pretoria
Johannesburg	TIME OF MEETING	12:00pm-14:00pm
EOH Business Park	MINUTES BY	Shafick Hoossein
Block D, 1 Osborne Lane	CIRCULATION DATE	10 July 2015
Bedfordview, 2007 Tel: +27 (11) 607 8100 Fax: +27 (11) 616 9929 Email: www.eoh.co.za		

. /	Attendance
	Department of Environmental Affairs Officials, EAPs: Shafick Hoossein and Andrew Karam (E CES) and Consulting Engineers: Peter Nganjo and Dawie de Meyer (Leo Consulting).
. /	Apologies
1	None
. 1	Presentation of the Proposal
((Presentation commenced)
	ssues, Statements and Queries RESPONSE/ACTION
	 Introduction from EAPs (EOH CES) and Consulting Engineers (Leo Consultin
	 This meeting was held in order to establish and confirm the correct listing noti which the Hendrina road will trigger;
	Design report was explained and expanded upon by Dawie de Meyer and Pet
	Nganjo of Leo Consulting. A summary is as follows:
	 Hendrina Road consists of 2.5m surface shoulders with climbing lanes
	 Need to widen bridges and replace existing culverts;
	 There may need to be temporary bridges constructed during the overa construction phase;
	 Vertical realignment of the road will be needed in some places;
	 SANRAL has mentioned that there is a busy intersection in the town or
	Hendrina (this forms the starting point of the Hendrina Road Project).
	intersection, thus, needs to be rehabilitated;
	 Surface shoulders on both sides of the Hendrina Road, using existing shoulder (1.5m);
	 Climbing lanes and shoulders will require an EIA;
	 The two gravel borrow pits identified are adjacent to the road;
	 There are no roads leading to the gravel borrow pits.
	For the NEMA list of listed activities EOH CES provided, the DEA cannot prec
	which activities will be triggered. Thus, the listing notice activities should be an and removed as the project progresses:
	Based on the current regulations, scoping report and EIA is not required and the current regulations are specified as a second sec
	process based on the information presented and available is a Basic Assessn
	 EAPs should inform the DEA which notices will be triggered and which ones y
	Gravel borrow pits require no licencing according to the Department of Minera
	Resources (DMR) and only comprehensive Environmental Management
	Programmes :
	r togrammes ,

•	The Mpumalanga Department of Economic Development, Environment and Tourism
	will act as the commenting party for which the draft basic assessment report will be
	assessed during the public participation process (PPP);
	• Must contact Ms Dineo Tsoaio from the Mpumalanga Provincial Department.
	Assessment report must also be sent to the other Departments involved (i.e.
	Mpumalanga Department of Water and Sanitation);
	Heritage assessment is currently taking place with no red flags thus far;
•	According to the new regulations, the application form can be submitted after the completion of all the relevant work (20-30 days extension);
•	DEA requests that the PPP with basic assessment report should be completed as soon as possible with any other activities;
•	There will be temporary deviations from the main road during construction with some needing to cross over drainage lines;
	 With these deviations, the DEA has requested that the listing notices be altered if need be (i.e. include what will be triggered as the road deviations take place during construction;
	If need be, EAPs must apply for triggers and sub-triggers;
•	Address the bypassing of drainage lines in the impact section with any potential mitigation measures;
	Application form must accompany the draft assessment report;
	If all the work has been conducted upfront, it will be commented on by the DEA after
	30 days. A final decision will be made after 107 days.
6 Clos	ure
DEA anyo	Officials thanked EOH CES and Leo Consulting for attending the meeting and encouraged ne to submit any further comments in writing.

Appendix E-6: Meeting Minutes – Department of Water and Sanitation (DWS)

		EOH Coastal & Environmental Ser	Vices						
		ME	ETING MINUTES						
	FOH	CLIENT	South African National Roads						
		DATE	1 July 2015						
Coas	tal & Environmental	VENUE	Nelspruit, Mpumalanga						
	Services	TIME OF MEETING	11:00am-12:30pm						
Johanr	nesburg	MINUTES BY	Shafick Hoossein						
EOH Bu	usiness Park	CIRCULATION DATE	10 July 2015						
Biock D Bedford	dview, 2007								
Tel: +27	7 (11) 607 8100								
Email:	/7 (11) 616 9929 www.eoh.co.za								
www.ce	esnet.co.za								
1	Welcome and Introduction								
	Mr Shabangu Sampie welco	med and thanked those presen	t. Introduction from Shafick Hoossein and						
	Andrew Karam (EOH CES).	-							
2.	Attendance	nolonge Department of Weter A	ffeire) Chefield Lessenin and Andrew						
	Karam (FOH CES)	nalanga Department of Water A	mairs), Shanck Hoossein and Andrew						
3.	Apologies								
	None								
4.	Presentation of the Propos	sal							
5	(Presentation commenced)	Jorian	RESPONSE/ACTION						
5.	Introduction from (Shafick Hoossein and Andrey	V Karam (EOH CES):						
		an tasked by SANRAL to do	a basic assessment for the ungrade of						
	 LOTI CLO has been a road in Hendring 	Moumalanda:	a basic assessment for the upgrade of						
		, mputhalanga, s mosting was to discuss the	project and onguiro about the						
	 The purpose of the necessary details 	s meeting was to discuss the	ed for a water use licence:						
	Increased by utilalis	ridges and sulverts clong the							
	Opgrades to the bi Several river erest	indges and curverts along the	Toad will require a water use licence,						
	Several liver closs eressing over drait		the bridges and cuiverts will involve						
		Section 21 FOLLOFS require	an advice regarding the water use						
	Interms of NEIMA	Section 21, EOR CES requir	es advice regarding the water use						
	Beth the bridges of	nd sulverte must be included	in the application process, consciently						
	 Both the bhuyes a when there are riv 	ar crossings involved. The or	In the application process, especially						
	culvorte oxist who	er crossings involved. The or	e.						
		e mere are no river crossing	s,						
	 The licence issued must be accompation 	and by the deographical coo	rdinates:						
	Subsection c) and	i) of NEMA Section 21 will a	poly to the Hendrina Road ungrade:						
	The application for	ms are available on the inter	net.						
	Mr Sampie will als	o be kent as an interested ar	net, ad affected person (I&AP) during the						
	 Ivir Sample will also be kept as an interested and affected person (I&AP) during the process; 								
	Mr Sampie has sent through the water use license sheeklist								
	The applicant is the relevant outbority of SANDAL:								
	The applicant is the bridges and a	e relevant autionity at SANK	AL,						
		uiverts along the road will be	extended and widehed;						
	The phages and c There will be a D4	14.00 authorization administra							
	 The bhoges and c There will be a R1 	14.00 authorisation admin fe	e;						
	 The bridges and c There will be a R1 The road reserver 	14.00 authorisation admin fe nust, therefore, be determine	e; ed;						
	 The bridges and c There will be a R1 The road reserver It is also possible t 	14.00 authorisation admin fe must, therefore, be determine to request licencing assistance	e ; ed; ce from the Ecological Services (ES)						

	 The assessment of all the risks involved should be summarised and should focus
	primarily on the impacts affecting the river as per the requirements of the checklist for
	a water use licence;
	The engineering consultants from Leo Consulting will determine all the technical
	aspects involved;
	EOH CES must confirm whether or not SANRAL has obtained the necessary
	authorisation for the water to be utilised during the construction phase (i.e. the
	construction water);
	There should be method statements for the crossing of water courses;
	Occurrences of wetlands and the delineation thereof is a crucial aspect of the water
	use licence checklist:
	• All the mitigation measures must be done properly without any compromise;
	The ecological status of the areas surrounding the Hendrina Road is crucially
	important;
	 Regarding the culverts, u-blocks must be utilised instead of round blocks;
	• During the design of the new bridges and culverts, the engineers must ensure that
	there will be no back flooding once the bridges and culverts have been rehabilitated;
	• The current status of the river/stream beds together with the extent of the seasonal
	flooding should be mimicked upon completion of the construction phase;
	• The application for a water use licence also includes any disturbances which might
	occur to the river/stream banks, as well as the river bed;
	 The application for the water use licence can be done parallel to the public
	participation process (PPP).
6	Closure
	Thanked EOH CES for attending the meeting and encouraged anyone to submit any further
	comments in writing.

Appendix E-7: Hendrina Public Open Day – 14 August 2015

Attendance Register

Date	Time	Name and Surname	Contact Number	E-mail Address	Signature
015/08/14	09:45	Danie de Meyer	012 333 9705	daviedne koronink a	1.2a 4
015/08/14	09:45	Elzanne V.Cl. Kolf	012 333 9705	elzannevelkalegconsull.	(0.29 Evok
015/08/14	09:47	hodren Karam	0115421765	ames a Misuicer	And
05/08/14	13.150	Aww. Ulans	0824516675	herdningh I Pre web k	(P)
				-	

Photos



APPENDIX F IMPACT ASSESSMENT (TABLE)

PLANNING AND DESIGN PHASE										
			Pre mitig	gation				Post mitigation		
Issue	Impact Description	Nature of impact	Temporal	Spatial	Likelihood	Severity	Significance	Mitigation	Significance	
LEGISLATION & POLIC	Y COMPLIANCE							•		
Legislation & policy compliance.	If the proposed development is not consistent with relevant environmental policy and legislation, during the planning and design phase, the environment may be adversely impacted.	<u>DIRECT</u>	<u>Permanent</u>	Localised	Possible	Severe	MODERATE NEGATIVE	 The development must adhere to the relevant legislation and/or policy, e.g. MBCP, Municipal By- laws, SDFs, IDPs, etc. 	LOW NEGATIVE	
STORMWATER										
Drainage systems.	Inappropriate road design may result in traffic congestion and safety risks as a result of inadequate storm water drainage planning.	<u>DIRECT</u> <u>INDIRECT</u> <u>CUMULATIVE</u>	Long term	Localised	Possible	Moderate Severe	MODERATE NEGATIVE	 The drainage systems have been designed by LEO Consulting, a reputable consulting engineering firm registered with CESA and appointed by SANRAL. The 	LOW NEGATIVE	
Stormwater management.	Inappropriate plans for routing storm water will lead to stream sedimentation and erosion of the surrounding area.	DIRECT INDIRECT CUMULATIVE	Long term	Localised	Possible	Moderate Severe	MODERATE NEGATIVE	stormwater management systems will ensure that no flooding of any facilities occurs, or that sedimentation or erosion of surrounding areas occurs.	LOW NEGATIVE	
BRIDGE DESIGN							1			
Bridge design.	If plans to upgrade and widen bridges over rivers are ineffectively designed they may impede the flow of the rivers and/or cause bank erosion.	DIRECT INDIRECT CUMULATIVE	Long term	Project Level	Definite	Severe	HIGH NEGATIVE	 The bridge and culvert designs must not impede the flow of water or cause erosion in rivers/streams. There must be proper drainage of stormwater away from the bridges. The design of the bridges must comply with DWS standards and WULAs must be submitted where necessary. 	MODERATE NEGATIVE	
HERITAGE				•			·	•		
Damage to heritage resources	Inadequate planning for potential heritage sites that may occur along the road reserve may result in the destruction and exposure thereof.	DIRECT	Long term	Project level	Possible	Severe	HIGH NEGATIVE	 An Archaeological Impact Assessment was conducted, which identified a few resources of medium heritage significance. The recommendation is that these sites and any activity in its surrounds must be monitored in order to avoid the destruction of 	LOW NEGATIVE	

	PLANNING AND DESIGN PHASE								
			Pre mitig	gation					
Issue	Impact Description	Nature of impact	Temporal	Spatial	Likelihood	Severity	Significance	Mitigation	
								undetected he	
TRAFFIC		<u> </u>							
Construction vehicles	Inadequate planning for high volume construction vehicles on the surrounding roads will negatively impact traffic flow.	DIRECT CUMULATIVE	<u>Short Term</u>	Localised	Definite	Moderately severe	MODERATE NEGATIVE	 Possible dem the storage vehicles shoul An appropriate traffic plan mu construction ensure that construction traffic flow is m 	
WASTE MANAGEMENT	-	•							
Waste storage.	The failure to plan for waste management storage can lead to unsanitary conditions & poor waste management practices.	DIRECT INDIRECT	<u>Medium term</u>	Localised	Definite	Moderately severe	MODERATE NEGATIVE	 A proper W Plan must be of 	
ECOLOGICAL									
Loss of indigenous vegetation.	High levels of transformation could result in the loss of indigenous vegetation types in the area.	DIRECT	Localised	Short-term	Definite	Moderately severe	MODERATE NEGATIVE	 Impacts environment a be limited to a and degraded An Environmed (ECO) must construction a advise on plan impact on vegetation. 	
Soil erosion and sedimentation.	Inappropriate road stormwater design may lead to an increase in surface soil erosion and subsequently sedimentation of the surrounding rivers and streams.	<u>DIRECT</u>	Localised	Long-term	Probable	Severe	HIGH NEGATIVE	 Appropriate st must be design All road set slopes must water diversion All stormwater designed in SANRAL and 	
Poor rehabilitation of moderate and high sensitive areas.	Poor planning and design for the utilisation of sensitive aquatic and terrestrial systems could result in the erosion and degradation of water-courses and associated habitats (e.g. wetlands).	DIRECT	Study area	Long-term	Possible	Moderately severe	HIGH NEGATIVE	 A 32 metre bu and drainage buffer around a developed. In cannot be ap must be obtair 	

Post mitiga	tion
	Significance
ritage remains.	
narcation areas tor of construction d be identified. e accommodation of ist be included in the documentation to the impact of vehicles upon the nitigated.	LOW NEGATIVE
Vaste Management designed.	LOW NEGATIVE
on surrounding and vegetation must already transformed areas. ental Control Officer be appointed prior commencement, to nning that will reduce the surrounding	LOW NEGATIVE
tormwater structures	LOW NEGATIVE
ned. ctions situated on incorporate storm n. r structures must be line with both DWS requirements.	
Iffer around all rivers lines and a 500m all wetlands must be n areas where this oplied, authorisation ned from DWS.	MODERATE NEGATIVE

	CONSTRUCTION PHASE										
			Pre mitigation					Post mitigation			
lssue	Impact Description	Nature of Impact	Temporal	Spatial	Likelihood	Severity	Significance	Mitigation	Significance		
AIR POLLUTION											
Air pollution in the form of dust.	Dust (air) pollution caused by grading and levelling exposed land can cause a nuisance to nearby traffic and neighbouring residential areas.	<u>DIRECT</u>	<u>Short Term</u>	Localised	Probable	Moderately severe	MODERATE NEGATIVE	 Cleared surfaces must be dampened whenever possible, especially during dry and windy conditions, to avoid excessive dust generation. Any soil excavated, and not utilised for rehabilitation, must be removed from site or covered and no large mounds of soil may be left behind after construction. 	LOW NEGATIVE		
NOISE POLUTION		DIDEOT				0"-11	MODEDATE				
Noise pollution.	Noise pollution caused by construction activities could potentially be a nuisance to neighbouring residential areas.		Short Term	Localised	Possible	Slight	NEGATIVE	 Construction activities close to residential settlements, which include the movement of construction vehicles, should be restricted to normal working hours (7:00am – 17:00pm). 	LOW NEGATIVE		
PALAENTOLOGY											
Fossils in sedimentary layers.	Inappropriate planning for the presence of fossils in the surrounding sedimentary layers could result in the damage of fossils and sedimentary layers.	<u>DIRECT</u>	<u>Permanent</u>	Project level	Possible	Severe	MODERATE NEGATIVE	 The EMPr must clearly stipulate that any fossils uncovered during construction should be reported to a palaeontologist. 	BENEFICIAL		
HAZARDOUS SUBSTANCE	STORAGE & USAGE										
Site contamination due to hazardous substance <i>usage</i> .	Cement, tar and bitumen mixing techniques and diesel/oil spillage occurring as a result of poorly maintained machinery could lead to soil pollution.	DIRECT	Short Term	Localised	Possible	Moderately severe	MODERATE NEGATIVE	 Concrete must not be mixed directly on the ground, or during rainfall events when the potential for transport to the stormwater system is the greatest. Concrete must only be mixed in the area demarcated for this purpose and on an impermeable surface. Oil trays must be placed under construction machinery to avoid soil contamination. All areas affected during the Construction Phase must be rehabilitated. 	LOW NEGATIVE		
Site contamination due to hazardous substance <i>spillage</i> .	Spillage of any hazardous substances such as fuel, chemicals, paint, etc. could contaminate underlying soil; and surface and groundwater resources.	DIRECT	<u>Short Term</u>	Localised	Possible	Severe	HIGH NEGATIVE	 Hazardous Chemical Substances Regulations promulgated in terms of the Occupational Health and Safety Act 85 of 1993 and the SABS Code of Practise must be adhered to. This applies to solvents and other chemicals possibly used during the construction process. Depending on the nature and extent of the spill, contaminated soil must either be excavated or treated on-site. 	LOW NEGATIVE		

	CONSTRUCTION PHASE										
			Pre mitigation					Post mitigation			
Issue	Impact Description	Nature of Impact	Temporal	Spatial	Likelihood	Severity	Significance	Mitigation	Significance		
	Inannropriate responses to	DIRECT	Long Term	Localised	Possible	Severe	MODERATE	 The ECO must have input and review the precise method of treatment of polluted soil. This could involve the application of soil absorbent materials or oil-digestive powders to the contaminated soil. If a spill occurs on an impermeable surface such as cement or concrete, the surface spill must be contained using oil absorbent materials. Contaminated remediation materials must be carefully removed from the area of the spill so as to prevent further release of petrochemicals to the environment, and stored in suitable containers until appropriate disposal. 			
	petrochemical or hazardous spill could have adverse effects on the underlying soil; and surface and groundwater resources.	DIRECT		Locansed	POSSIDIE	Severe	NEGATIVE	 The individual responsible for or the individual who discovers the petrochemical spill must report the incident to the Project Engineer. DEO, ECO and/or Contractor as soon as reasonably possible. The petrochemical or hazardous spill must be assessed and the necessary actions required should be undertaken, the immediate response must be to contain the spill. 	LOW NEGATIVE		
Site contamination due to inappropriate storage of hazardous substances.	The inappropriate storage of hazardous material can lead to spillages and contamination of soil; and surface and ground water resources.	DIRECT	Long Term	Localised	Possible	Moderately severe	MODERATE NEGATIVE	 The individual(s) that will be handling hazardous materials must be trained to do so. Hazardous Chemical Substances Regulations promulgated in terms of the Occupational Health and Safety Act 85 of 1993 and the SABS Code of Practise must be adhered to. This applies to solvents and other chemicals possibly used during construction. All hazardous chemicals must be stored properly in a secure, bunded and contained area. 	LOW NEGATIVE		

	CONSTRUCTION PHASE										
			Pre mitigation					Post mitigation			
Issue	Impact Description	Nature of Impact	Temporal	Spatial	Likelihood	Severity	Significance	Mitigation	Significance		
Health and safety risk associated with fires.	Inadequate attention to fire safety awareness and fire safety equipment could result in an unsafe working environment and the loss of property.	DIRECT INDIRECT	Long Term	Project Level	Possible	Very Severe	HIGH NEGATIVE	 The contractor must ensure that operational firefighting equipment is present on site at all times as per Occupational Health and Safety Act. All construction foremen must be trained in fire hazard control and firefighting techniques. All flammable substances must be stored in dry areas which do not pose an ignition risk to the said substances. Open fires must not be permitted on site unless in a demarcated area where the ECO has adequate input and comment. No smoking near a flammable substance. All cooking shall be done in demarcated areas considered safe in terms of runaway or uncontrolled fires. The level of firefighting equipment must be assessed and evaluated thorough a typical risk assessment process. 	LOW NEGATIVE		
Sanitation and water.	Failure to provide adequate onsite sanitation and clean drinking water may result in runoff transferring contaminants into the surrounding environment.	DIRECT	Short Term	Localised	Possible	Moderately Severe	MODERATE NEGATIVE	 Adequate sanitary and ablutions facilities must be provided for construction workers The facilities must be serviced regularly to reduce the risk of surface or groundwater pollution. Contaminated wastewater must be managed by the Contractor to ensure the existing water resources on the site are not contaminated. All wastewater from general activities in the camp must be collected and removed from the site for appropriate disposal at a licensed facility. 	LOW NEGATVE		
Building construction	Construction rubble left onsite	DIRECT	Short Term	Localised	Possible	Slight	LOW NEGATIVE	Construction rubble must be disposed of in	LOW NEGATIVE		
rubble management.	may attract vermin and							predetermined, demarcated spoil dumps that			
	opportunistic alien vegetation.							nave been approved by Steve Tshwete LM.			

	CONSTRUCTION PHASE									
			Pre mitigation							
lssue	Impact Description	Nature of Impact	Temporal	Spatial	Likelihood	Severity	Significance			
Litter management.	Litter on site may attract vermin, detract from the visual appeal of the area, and pollute the surrounding areas.	<u>DIRECT</u>	<u>Short Term</u>	Localised	Possible	Slight	LOW NEGATIVE	 Litter cause tolerated. monitor the well as the 0 All construct removed from the licence Hendrina. 		
Hazardous waste management.	Hazardous waste, such as used oils and offcuts could pollute surface and groundwater resources if it is not contained properly.	DIRECT	<u>Short Term</u>	Localised	Possible	Moderately Severe	MODERATE NEGATIVE	 All hazardo stored cauti and then dis licensed ha Contaminar avoid spillag Machinery oil leaks. 		
TRAFFIC			1				1			
Construction vehicles impacting on the traffic flow.	Construction activities are likely to adversely affect the flow of traffic	DIRECT	Short Term	Project Level	Definite	Moderately severe	MODERATE NEGATIVE	 A Traffic designed a Carefully p should be flow contin The existir road sho constructio travel times 		
SOCIAL						1	1			
Job creation during construction.	Temporary job opportunities will be created.	INDIRECT	Short Term	Localised	Definite	Beneficial	MODERATE BENEFICIAL	No mitigation is		
Rivers and streams may	Construction activities could	DIRECT	Short term	Project level	Definite	Moderately severe	HIGH NEGATIVE	- No constru		
be impacted by construction activities.	pollute and adversely affect various rivers and streams.							- Rivers and developme natural sta		
STORM WATER MANAGE	MENI									

Post mitigation	
Mitigation	Significance
d by employees must not be The DEO and ECO must sanitation of the work sites as Contractor campsite. ction general waste must be on the site and transported to ed landfill site located in	LOW NEGATIVE
us waste materials must be ously as advised by the ECO, sposed of offsite at the closest zardous landfill site. Its must be stored safely to ge must be maintained to avoid	LOW NEGATIVE
Management Plan must be nd implemented. lanned traffic diversion lanes setup to ensure that traffic ues in a safe manner.	LOW NEGATIVE
ng two-way traffic flow on the buld be retained during n, and no severe delays in s are foreseen.	MODERATE NEGATIVE
required.	MODERATE BENEFICIAL
ation while must be left in an	MODEDATE
n has been completed. If streams in proximity to the nt must be returned to their te once construction has been	NEGATIVE

	CONSTRUCTION PHASE									
			Pre mitigation					Post mitigation		
Issue	Impact Description	Nature of Impact	Temporal	Spatial	Likelihood	Severity	Significance	Mitigation	Significance	
Offsite contamination due to runoff.	Contaminants such as silt, sand and litter could be transported offsite via surface runoff and contaminate the surrounding environment.	<u>DIRECT</u>	Long Term	Localised	Probable	Severe	HIGH NEGATIVE	 The site must be managed in a manner that prevents pollution of drains, downstream watercourses or groundwater, due to suspended solids, silt or chemical pollutants. Temporary cut-off drains and berms may be required to capture storm water and promote infiltration. The area must be monitored by an ECO on a regular basis. 	LOW NEGATIVE	
ECOLOGICAL										
Riparian vegetation may be damaged by construction. Poor rehabilitation of moderate and high sensitive areas.	Riparian vegetation could be adversely affected by construction activities in proximity to river and stream crossings. Poor rehabilitation of sensitive vegetation may lead to the permanent loss of ecosystems and result in the spread of alien invasive vegetation species.	DIRECT DIRECT	Short term Long-term	Localised Project level	Possible Probable	Severe Moderately severe	HIGH NEGATIVE MODERATE NEGATIVE	 Riparian vegetation must only be removed or relocated under the guidance of a qualified ECO. Construction activities must be limited to the designated footprint of the road upgrade route as far as possible. Rehabilitation Management Plan and an Erosion Action Plan must be implemented and adhered to for the duration of construction activity. The Erosion Action Plan must ensure that all sediment is contained. The plans must be incorporated into the EMPr and must draw from the recommendations of the Vegetation 	MODERATE NEGATIVE LOW NEGATIVE	
HERITAGE								Study.		
Damage to heritage resources.	Construction activities in proximity to heritage sites may result in the destruction and/or exposure thereof.	DIRECT	Long term	Project level	Possible	Severe	HIGH NEGATIVE	 If human graves are exposed during the construction phase, all work activity in the vicinity must cease immediately, and SAHRA, a Heritage Specialist and the SAPS need to be informed. No construction related activities must take place within 20m of visible gravesites. 	LOW NEGATIVE	

		OPERATIONAL PHASE									
		Post mitigation									
lssue	Impact Description	Nature of impact	Temporal	Spatial	Likelihood	Severity	Significance	Mitigation	Significance		
Road Maintenance	Poor maintenance of the road could cause deterioration of the surrounding environment	DIRECT	Long-term	Project level	Definite	Moderately Severe	MODERATE NEGATIVE	SANRAL shall maintain the road	LOW NEGATIVE		

	NO-GO OPTION									
			Pre miti	igation				Pos	t mitigation	
Issue	Impact Description	Nature of impact	Temporal	Spatial	Likelihood	Severity	Significance	Mitigation	Significance	
Proposed upgrade of the N11 will not proceed	The No-Go Option entails no road upgrades and safety improvements to the N11 between the R38 intersection and mine road underpass bridge.	DIRECT	Long-term	Project level	Definite	Moderately Severe	MODERATE NEGATIVE	<i>No mitigation proposed.</i> If the upgrade does not proceed then none of the negative impacts identified for the planning and design, construction and operational phases will take place.	MODERATE NEGATIVE	
No loss of indigenous and riparian vegetation.	The No-Go Option could preserve the integrity of the indigenous and riparian vegetation along the proposed road upgrade route.	DIRECT	Long-term	Project level	Definite	Beneficial	MODERATE BENEFICIAL	No mitigation required.	MODERATE BENEFICIAL	
Job opportunities.	The No-Go Option would result in the loss of construction job opportunities.	<u>DIRECT</u>	Short-term	Localised	Definite	Moderately Severe	MODERATE NEGATIVE	No mitigation proposed.	MODERATE NEGATIVE	
Traffic congestion in Hendrina.	The No-Go Option would result in ongoing congestion of traffic within and around Hendrina.	DIRECT	Long-term	Localised	Probable	Moderately Severe	MODERATE NEGATIVE	No mitigation proposed.	MODERATE NEGATIVE	
Condition of the road and bridges.	The No-Go option could result in the gradual degradation of the road and bridges.	<u>DIRECT</u>	Long-term	Project level	Definite	Moderately Severe	MODERATE NEGATIVE	No mitigation proposed.	MODERATE NEGATIVE	

APPENDIX G ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)

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APPENDIX H DETAILS OF EAP AND EXPERTISE

Coastal & Environmental Services (CES) was established in 1990 as a specialist environmental consulting company. Recently EOH Group of Companies acquired the shares in CES. EOH is the largest provider of enterprise applications, technology, outsourcing, cloud and managed services. The group is active in South Africa, Africa and the United Kingdom and has a strong Black Economic Empowerment profile. This integration will allow CES to combine EOH's great reach and reputation with CES's recognised excellence in environmental and social advisory services, thus maximising CES's strengths and comprehensive offerings in the environmental and social fields.

Dr Alan Carter

Alan is the executive of the CES East London Office. He holds a PhD in Marine Biology and is a certified Public Accountant, with extensive training and experience in both financial accounting and environmental science disciplines with international accounting firms in South Africa and the USA. He has 25 years' experience in environmental management and has specialist skills in sanitation, coastal environments and industrial waste. Dr Carter is registered as a Professional Natural Scientist under the South African Council for Natural Scientific Professions (SACNASP).



The Interim Certification Board for Environmental Assessment Practitioners of South Africa Alan Robert Carter was certified as an **ENVIRONMENTAL ASSESSMENT** PRACTITIONER on this 1st day of March 2012 Mathe Secretary hairperson

APPENDIX I SPECIALIST'S DECLARATION OF INTEREST

Declaration by Heritage (Archaeological) Specialist

ygu	Innovation in Sustainability
CES: N11 Road Upgrade	Archaeological Impact Assessment Report
DECLARAT	ION
I, Nelius Le Roux Kruger, declare that –	
I act as the independent specialist;	to the proposed N11 Read Upgrade Project in an
I am conducting any work and activity relating objective memory even if this results in views and	findings that are not foreurable to the client:
 I declare that there are no circumstances that n work: 	nadings that are not havourable to the client; nay compromise my objectivity in performing such
 I have the required expertise in conducting the 	specialist report and I will comply with legislation
including the relevant Heritage Legislation (Natio	nal Heritage Resources Act no. 25 of 1999, Humar
Tissue Act 65 of 1983 as amended, Removal of	Graves and Dead Bodies Ordinance no. 7 of 1925
Excavations Ordinance no. 12 of 1980), the Minin	num Standards: Archaeological and Palaeontologica
Components of Impact Assessment (SAHRA, AMA	FA and the CRM section of ASAPA), regulations and
any guidelines that have relevance to the propose	d activity;
I have not, and will not engage in, conflicting inter	ests in the undertaking of the activity;
I undertake to disclose to the applicant and the	competent authority all material information in my
possession that reasonably has or may have the	potential of influencing - any decision to be taken
with respect to the application by the competent	authority; and - the objectivity of any report, plan o
document to be prepared by myself for submissio	n to the competent authority;
 All the particulars furnished by me in this declarat 	ion are true and correct.
Ille	
Signature of specialist	
Company: Exigo Sustainability Date: 5 July 2015	

APPENDIX J ADDITIONAL INFORMATION

Co-ordinates taken at every 250m of the N11 route proposed for upgrade.

	Latitude (S)	Longitude (E)
Start	26° 9.550'S	29° 42.997'E
	26° 9.391'S	29° 42.978'E
	26° 9.221'S	29° 42.971'E
	26° 9.154'S	29° 42.786'E
	26° 9.018'S	29° 42.662'E
	26° 8.853'S	29° 42.593'E
Bosman River Crossing	26° 8.716'S	29° 42.545'E
	26° 8.517'S	29° 42.487'E
	26° 8.322'S	29° 42.426'E
	26° 8.121'S	29° 42.366'E
	26° 7.956'S	29° 42.302'E
	26° 7.785'S	29° 42.252'E
	26° 7.613'S	29° 42.192'E
	26° 7.415'S	29° 42.133'E
	26° 7.415'S	29° 42.133'E
	26° 7.218'S	29° 42.065'E
	26° 7.056'S	29° 42.008'E
	26° 6.860'S	29° 41.942'E
	26° 6.662'S	29° 41.874'E
	26° 6.463'S	29° 41.808'E
	26° 6.298'S	29° 41.767'E
	26° 6.111'S	29° 41.703'E
	26° 5.927'S	29° 41.646'E
	26° 5.715'S	29° 41.576'E
	26° 5.519'S	29° 41.509'E
	26° 5.324'S	29° 41.453'E
	26° 5.151'S	29° 41.396'E
	26° 4.944'S	29° 41.332'E
(Middle) Bosmanspanspruit Crossing	26° 4.798'S	29° 41.277'E
	26° 4.598'S	29° 41.224'E
	26° 4.413'S	29° 41.148'E
	26° 4.249'S	29° 41.049'E
	29° 40.925'E	29° 40.925'E
	26° 3.895'S	29° 40.796'E
	26° 3.736'S	29° 40.676'E
	26° 3.569'S	29° 40.554'E
	26° 3.401'S	29° 40.420'E
	26° 3.220'S	29° 40.295'E
	26° 3.036'S	29° 40.158'E
	26° 2.806'S	29° 40.059'E
	26° 2.627'S	29° 39.979'E
	26° 2.388'S	29° 39.886'E

	Latitude (S)	Longitude (E)
	26° 2.159'S	29° 39.780'E
	26° 1.928'S	29° 39.691'E
	26° 1.694'S	29° 39.597'E
	26° 1.473'S	29° 39.509'E
	26° 1.262'S	29° 39.418'E
	26° 1.011'S	29° 39.321'E
	26° 0.778'S	29° 39.222'E
	26° 0.543'S	29° 39.118'E
End	26° 0.328'S	29° 39.017'E