



**DRAFT BASIC ASSESSMENT
REPORT**

**DEA REFERENCE:
14/12/16/3/3/1/1262**

**THE REHABILITATION AND
UPGRADE OF NATIONAL ROUTE 1
SECTION 16 BETWEEN WINBURG
INTERCHANGE (KM 78.8) AND THE
INTERSECTION TO WINBURG
STATION (KM 89.0)**

**Prepared for the South African
National Roads Agency Soc Limited**

October 2014



BASIC ASSESSMENT REPORT



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, 2010, 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, 2010 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 **1 September 2012**. 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 on the electronic copy of the report submitted to the competent authority.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?

YES x	NO
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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

The project is located near the town of Winburg on the National Route 1, Section 16 from Winburg Interchange (km 78.8) to the intersection to Winburg Station (km 89.0). The length of the project is approximately 10.2 kilometres but is increased to approximately 16 km to enable the tie in between the new dual carriageway and the existing single carriageway. The ramps and cross roads at all interchanges fall within the limits of the project.

The following is included in the scope of works:

- This section of the N1 consists of a single carriageway road that has surfaced width of 12.4m. Traffic volumes are currently about 10000 vehicles per day. The roadway will be upgraded from a bi-directional single carriageway to a divided dual carriageway with a median by constructing the new carriageway towards the west adjacent to the existing carriageway.
- The existing N1 road will be widened by adding a 12.4m wide carriageway comprising 2 new lanes in a northbound direction, towards the west of the existing N1 carriageway.
- The strengthening of the existing or additional pavement layers and surfacing to new levels and widths on the existing alignment.
- The horizontal alignment of the new carriageway will follow the existing alignment.
- The existing roadway will require full rehabilitation and some re-grades in places to improve the vertical alignment.
- The new carriageway will require permanent land acquisition as the existing road reserve is not wide enough to cater for the dual carriageway roadway towards the west. The road reserve width will be increased from 32 m to 80 m from km 85.75 to km 90.00.

a. Culverts

Drainage forms an integral part of the rehabilitation and upgrade design. There are 3 large culverts that exceed 1.0 meter in height along this section of road. Most of the culverts function as cattle creeps and not as a drainage structures. All these culverts will be widened to accommodate the new Northbound Carriageway.

b. Bridges

Widening of a one road over rail bridge at km 82.6.

c. Mining Areas

There are approximately 6 quarries and/or borrow pits that will need to be opened for this road project in order to provide the necessary material for the upgrade of the road.

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

Listed activity as described in GN R.544, 545 and 546	Description of project activity
<p>Example: GN R.544 Item 11(3): 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.</p>	<p>A bridge measuring 5 m in height and 10m in length, no wider than 8 meters will be built over the Orange river</p>
<p>544, 18 June 2010, Item 11: The construction of: (vi) Bulk storm water outlet structures. Within a watercourse or within 32 metres of a watercourse.</p>	<p>3 existing pipe and/or box culverts to be constructed/lengthened to accommodate the 2 new lanes to be constructed towards the west of the existing N1.</p>
<p>544, 18 June 2010, Item 18: The infilling or depositing of any material of more than 5 cubic metres into: (a) A watercourse.</p>	<p>Material of more than 5m³ will be deposited into water courses at culverts to be constructed (see item 11).</p>
<p>544, 18 June 2010, Item 22: The construction of a road, outside urban areas, With a reserve wider that 13,5 meters.</p>	<p>The current road reserve varies between 80m wide from the start of this section at km 78.0 up to km 85.78. At km 85.78 the original planned road reserve continues towards Henneman but the N1 follows a 32m wide reserve in the direction of Ventersbrug. Two additional lanes will be added towards the west of the existing N1.</p>
<p>544, 18 June 2010, Item 39: The expansion of: (iii) Bridges; (v) Bulk storm water outlet structures. Within a watercourse or within 32 metres of a watercourse.</p>	<p>3 existing pipe and/or box culverts to be constructed/lengthened.</p>
<p>544, 18 June 2010, Item 40: The expansion of: (iv) Infrastructure by more than 50 sq metres Within a watercourse or within 32 m of a watercourse</p>	<p>3 existing pipe and/or box culverts to be constructed/lengthened (more than 50 m² each)</p>
<p>544, 18 June 2010, Item 47: The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 km- (i) Where the existing reserve is wider than 13,5 meters.</p>	<p>The existing N1 road will be widened by 12.4 m with the 2 new lanes to be constructed towards the west of the existing N1.</p>
<p>546, 18 June 2010, Item 14: The clearance of an area of 5 ha or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation.</p>	<p>Clearance of vegetation of 5 ha within existing road reserve to accommodate the 2 new lanes to be constructed towards the west of the existing N1.</p> <p>Opening of approximately 6 culverts and/or</p>

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Listed activity as described in GN R.544, 545 and 546	Description of project activity
	quarries on adjacent farms in order to provide the necessary material for the upgrade of the road.

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 Regulation 22(2)(h) of GN R.543. 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

In the case of linear activities: **There is only 1 site alternative as the N1 is an existing road**

Alternative:	Latitude (S):	Longitude (E):
Alternative S1 (preferred)		
• Starting point of the activity	28°32'57.27"	26°58'45.04"
• Middle/Additional point of the activity	28°29'47.63"	26°59'52.44"
• End point of the activity	28°27'23.41"	27°01'59.10"

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 (Please see Appendix A).

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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.

- b) Lay-out alternatives: **NONE**
- c) Technology alternatives **NONE**
- d) Other alternatives **DESIGN ALTERNATIVES**

Alternative A1 (preferred alternative)
Construction of a new section as a north bound lane to create a divided dual carriageway with an 11.4m cross section with a median.
Alternative A2
Construction of a new section as a north bound lane to create an undivided four lane highway without a median.
Alternative 3
None

- e) **No-go alternative**

Should the road not be upgraded, the traffic on the N1 could experience increasingly unsafe driving conditions. The intersections on this section of the road are not adequate to provide for the heavy traffic experienced in the area, especially during the peak holiday periods. The vertical and horizontal alignments and intersections of the road need to be upgraded to ensure the safety of the traveling public. This will also accommodate the predicted increase in traffic volume and avoid high driver frustration.

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

Indirect impacts:

Possible traffic accidents as a result of poor driving conditions.
Possible injury and death of travelling public.

Cumulative impacts:

High health care costs as a result of traffic accidents.

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

ALTERNATIVE A1: PREFERRED ALTERNATIVE

CONSTRUCTION OF A NEW SECTION AS A NORTH BOUND LANE TO CREATE A DIVIDED DUAL CARRIAGEWAY WITH AN 11.4M CROSS SECTION WITH A MEDIAN

3. PHYSICAL SIZE OF THE ACTIVITY

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

For linear activities:

Alternative:

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

Length of the activity:

	10200 m
	10200 m
	None

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)

Size of the site/servitude:

	(10200m x 80 m) = 816 000 m ²
	(10200m x 80 m) = 816 000 m ²
	None

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

YES x	NO
m	

Describe the type of access road planned:

There is no access road planned. This is an upgrade of an existing road.

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.

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 DWA);
- 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 x	NO	Please explain
The upgrade of the road is undertaken in terms of the South African National Roads Agency Soc Limited (SANRAL's) mandate in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The declaration of the N1 as a national road under section 40(1) of the Act creates the land use right within the declared road reserve.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES x	NO	Please explain
The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The N1 is a national road and falls within the jurisdiction of the SANRAL and the development is not bound by the Municipality's PSDF in order to continue.			
(b) Urban edge / Edge of Built environment for the area	YES x	NO	Please explain
The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The N1 is a national road and falls within the jurisdiction of the SANRAL and the development is not bound by the Municipality's urban edge in order to continue as it is not a residential development or municipal road development.			
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES x	NO	Please explain
The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The N1 is a national road and falls within the jurisdiction of the SANRAL and the development is not bound by the Municipality's IDP in order to continue as it is not a residential development or municipal roads development.			

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(d) Approved Structure Plan of the Municipality	YES x	NO	Please explain
The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The N1 is a national road and falls within the jurisdiction of the SANRAL and the development is not bound by the Municipality's approved structure plan in order to continue as it is not a residential development or municipal roads development.			
(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	YES	NO x	Please explain
The approval of this application will not compromise the integrity of the existing environmental management priorities for the area and it can it be justified in terms of sustainability considerations. No significant long term impact is foreseen as a result of the upgrade of the road.			
(f) Any other Plans (e.g. Guide Plan)	YES	NO x	Please explain
No significant long term impact is foreseen as a result of the upgrade of the road.			
3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	YES x	NO	Please explain
The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The N1 is a national road and falls within the jurisdiction of the SANRAL. The development is not bound by the Municipality's approved SDF in order to continue as it is not a residential development or municipal roads development.			
4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	YES x	NO	Please explain
The area is in dire need of this project and it is a societal priority as numerous accidents occur on the N1 in this area every year with associated loss of lives.			
5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES x	NO	Please explain
The contractor will in all probability make use of municipal water, sewage and waste disposal services during the time of construction. There is adequate capacity available at the local Municipality for these services.			

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<p>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.)</p>	YES x	NO	Please explain
<p>The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The N1 is a national road and falls within the jurisdiction of the SANRAL. The development is not bound by the Municipality's infrastructure planning in order to continue.</p>			
<p>7. Is this project part of a national programme to address an issue of national concern or importance?</p>	YES	NO x	Please explain
<p>The upgrade of the N1 became important as a result of the deterioration of the road and the numerous accidents that occur in this area every year with associated loss of lives.</p>			
<p>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.)</p>	YES x	NO	Please explain
<p>The N1 is an existing national road at Winburg and the area that is earmarked for upgrading is located from km 78.8 to km 89.0. This existing road will be upgraded in terms of SANRAL's mandate in terms of the South African National Roads Agency Limited and National Roads Act, 1998.</p>			
<p>9. Is the development the best practicable environmental option for this land/site?</p>	YES x	NO	Please explain
<p>The activity falls within the N1 road reserve and the widening of the road will be conducted within the widened N1 road reserve. The potential impacts related to the activity were assessed together with specialist engineering and environmental input and the best practicable environmental option and mitigation measures recommended in the report.</p>			
<p>10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?</p>	YES x	NO	Please explain
<p>The benefits of the proposed development will outweigh the negative impacts as the local communities and road users are in dire need of this project as numerous accidents occur in this area every year with associated loss of lives. The road will, therefore, be widened with a low impact to the environmental but a high positive impact to the community.</p>			
<p>11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?</p>	YES	NO x	Please explain
<p>The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The N1 is a national road and falls within the jurisdiction of the SANRAL. This development will therefore not set a precedent for similar activities as it is not bound by the Municipality's infrastructure planning in order to continue.</p>			

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12. Will any person's rights be negatively affected by the proposed activity/ies?	YES	NO x	Please explain
It is not foreseen that any person's rights will be negatively affected by the proposed activity as no community displacement will take place. A public participation process were followed and the comments and concerns taken into account during the environmental process.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	YES	NO x	Please explain
The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The N1 is a national road and falls within the jurisdiction of the SANRAL and the development is not bound by the Municipality's urban edge in order to continue as it is not a residential development or municipal road development.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	YES	NO x	Please explain
This project is not included in any of the SIP projects.			
15. What will the benefits be to society in general and to the local communities?	Please explain		
<p>The proposed road upgrade could offer several benefits to society in general, including:</p> <ul style="list-style-type: none"> • Decrease accidents due to narrow road being widened and at grade intersections safety enhancement; • Safer driving conditions for the road users as the extended road surface will provide opportunities to pass heavy vehicles. Turn movements and safety at the intersections will improve; • With the upgrade of the road, less maintenance on vehicles are anticipated; • Improved traffic flow of commuter traffic, particularly during peak periods; • Reduced congestion; • Less traffic accidents; • Improved drainage and other services. 			
16. Any other need and desirability considerations related to the proposed activity?	Please explain		
<ul style="list-style-type: none"> • Employment opportunities for the local residents during construction. • Less accidents and associated loss of lives. • Improved traffic flow, particularly during peak periods; • Reduced congestion; • Improved drainage and other services. • Drainage channels will be improved 			
17. How does the project fit into the National Development Plan for 2030?	Please explain		
The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa. The N1 is a national road and falls within the jurisdiction of the SANRAL in terms of the South African National Roads Agency Limited and National Roads Act, 1998.			

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

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

- a) Identified, predicted and evaluated the actual and potential impact on the environment as a result of the upgrade of the road as well as the socio-economic conditions and cultural heritage,
- b) Investigated alternatives and options for mitigation of activities, with a view to minimizing negative impacts.
- c) Maximizing benefits to the environment as a result of the upgrade of the road;
- d) Ensured that the effects of activities on the environment received adequate consideration before actions are taken in connection with them;
- e) Ensured adequate and appropriate opportunity for public participation in decisions that may affect the environment;
- f) Ensured the consideration of environmental attributes in management and decision-making which may have a significant effect on the environment; and
- g) Identified and employed the modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in section 2 of the NEMA.

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

The following have been taken into account:

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

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
EIA Regulations GN R. 544 Activities 11, 18, 22, 39, 40, 47.	Listed activities triggered in terms of the EIA Regulations, 2010	Department of Environmental Affairs	18 June 2010
EIA Regulations, 2010 R. 546: Activity 14.			

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Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
<p>Department of Environmental Affairs Departmental Guidelines under www.environment.gov.za</p>	<p>Guidance with regard to the execution of the Basic Assessment process</p>	<p>Department of Environmental Affairs</p>	<p>2010</p>
<p>National Environmental Management Act, 1998 (Act No. 107 of 1998)</p> <p>The National Environmental Management Act, 1998 (Act No. 107 of 1998): [NEMA] was enacted in November 1998. NEMA provides for cooperative governance by establishing principles for decision-making on matters affected the environment, institutions that will promote co-operative governance and procedures for coordinating environmental functions, public participation and sustainable development.</p>	<p>General objectives of Integrated Environmental Management as set out in section 23 of NEMA taken into account</p>	<p>The National Department of Environmental Affairs</p>	<p>27 November 1998</p>
<p>National Water Act (Act No. 36 of 1998)</p> <p>The application for a Water Use License in terms of the National Water Act, 1998.</p>	<p>Stream crossings and possible application of Water Use License or general authorization at the Department of Water Affairs</p>	<p>Department of Water Affairs</p>	<p>20 August 1998</p>
<p>National Heritage Resource Act 1999 (Act No. 25 of 1999)</p> <p>In terms of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) comment was obtained from SAHRA.</p>	<p>Any linear activity that exceeds 300 m in extent requires input from SAHRA.</p>	<p>South African Heritage Resources Agency (SAHRA)</p>	<p>1999</p>
<p>Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)</p>	<p>Any relocation or destruction of a protected plants species requires a permit</p>	<p>Free State Department of Tourism, Environmental & Economic Affairs</p>	<p>1983</p>

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
10 m ³	

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

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

Waste skips will be provided at the construction camp site and strategically along the route. These waste bins will be regularly emptied by a contractor who in turn will dispose of the waste at a recognized waste disposal site.

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

The solid waste will be disposed of at a recognized waste disposal site. Waste will feed into the Masilonyana Local Municipality municipal waste stream.

Will the activity produce solid waste during its operational phase?

YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
m ³	

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

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.

The solid waste will be disposed of in the Masilonyana Local Municipality landfill sites.

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 <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
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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 <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
------------------------------	--

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 <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
m ³	

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 <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
------------------------------	--

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.

BASIC ASSESSMENT REPORT

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

YES	NO x
-----	------

If YES, provide the particulars of the facility:

Facility name:	n/a		
Contact person:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

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

Recycling of wastewater will be undertaken if an asphalt plant with a wet scrubber system will be utilised for the production of asphalt on the road.

c) Emissions into the atmosphere

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

YES	NO x
-----	------

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

YES	NO
-----	----

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:

During the construction phase some dust might be generated. Dust will be suppressed through regular water spraying of surfaces as indicated in the EMPr.

d) Waste permit

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

YES	NO x
-----	------

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?

YES x	NO
-------	----

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

YES	NO x
-----	------

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.

If NO, describe the noise in terms of type and level:

Construction noise will be generated during normal working hours. Mitigation measures for noise generated during construction are included in the EMPr.

13. WATER USE

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

Municipal <input checked="" type="checkbox"/>	Water board	Groundwater	River, stream, dam or lake	Other	The activity will not use water
---	-------------	-------------	-------------------------------	-------	------------------------------------

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?

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

litres	
YES <input checked="" type="checkbox"/>	NO

14. ENERGY EFFICIENCY

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

The following energy efficient measures will be taken on the project:

- Equipment generating energy will be properly insulated to prevent energy loss.
- Compact fluorescent lights will be installed in the site offices;

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

The use of solar geysers will be investigated for use at the contractor camp site during construction. Compact fluorescent lights will be installed in the site offices.

ALTERNATIVE A2:

CONSTRUCTION OF A NEW SECTION AS A NORTH BOUND LANE TO CREATE AN UNDIVIDED FOUR LANE HIGHWAY WITHOUT A MEDIAN

3. PHYSICAL SIZE OF THE ACTIVITY

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

For linear activities:

Alternative:

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

Length of the activity:

	10200 m
	10200 m
	None

BASIC ASSESSMENT REPORT

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)

Size of the site/servitude:

(10200m x 80 m) =	816 000 m ²
(10200m x 80 m) =	816 000 m ²
	None

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

YES x	NO
M	

Describe the type of access road planned:

There is no access road planned. This is an upgrade of an existing road.

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.

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 DWA);
- 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 x	NO	Please explain
The upgrade of the road is undertaken in terms of the South African National Roads Agency Soc Limited (SANRAL's) mandate in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The declaration of the N1 as a national road under section 40(1) of the Act creates the land use right within the declared road reserve.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES x	NO	Please explain
The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The N1 is a national road and falls within the jurisdiction of the SANRAL and the development is not bound by the Municipality's PSDF in order to continue.			
(b) Urban edge / Edge of Built environment for the area	YES x	NO	Please explain
The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The N1 is a national road and falls within the jurisdiction of the SANRAL and the development is not bound by the Municipality's urban edge in order to continue as it is not a residential development or municipal road development.			
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES x	NO	Please explain
The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The N1 is a national road and falls within the jurisdiction of the SANRAL and the development is not bound by the Municipality's IDP in order to continue as it is not a residential development or municipal roads development.			
(d) Approved Structure Plan of the Municipality	YES x	NO	Please explain
The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The N1 is a national road and falls within the jurisdiction of the SANRAL and the development is not bound by the Municipality's approved structure plan in order to continue as it is not a residential development or municipal roads development.			

BASIC ASSESSMENT REPORT

<p>(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?)</p>	YES	NO <input checked="" type="checkbox"/>	Please explain
<p>The approval of this application will not compromise the integrity of the existing environmental management priorities for the area and it can be justified in terms of sustainability considerations. No significant long term impact is foreseen as a result of the upgrade of the road.</p>			
<p>(f) Any other Plans (e.g. Guide Plan)</p>	YES	NO <input checked="" type="checkbox"/>	Please explain
<p>No significant long term impact is foreseen as a result of the upgrade of the road.</p>			
<p>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)?</p>	YES <input checked="" type="checkbox"/>	NO	Please explain
<p>The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The N1 is a national road and falls within the jurisdiction of the SANRAL. The development is not bound by the Municipality's approved SDF in order to continue as it is not a residential development or municipal roads development.</p>			
<p>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.)</p>	YES <input checked="" type="checkbox"/>	NO	Please explain
<p>The area is in dire need of this project and it is a societal priority as numerous accidents occur on the N1 in this area every year with associated loss of lives.</p>			
<p>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.)</p>	YES <input checked="" type="checkbox"/>	NO	Please explain
<p>The contractor will in all probability make use of municipal water, sewage and waste disposal services during the time of construction. There is adequate capacity available at the local Municipality for these services.</p>			

BASIC ASSESSMENT REPORT

<p>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.)</p>	YES x	NO	Please explain
<p>The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The N1 is a national road and falls within the jurisdiction of the SANRAL. The development is not bound by the Municipality's infrastructure planning in order to continue.</p>			
<p>7. Is this project part of a national programme to address an issue of national concern or importance?</p>	YES	NO x	Please explain
<p>The upgrade of the N1 became important as a result of the deterioration of the road and the numerous accidents that occur in this area every year with associated loss of lives.</p>			
<p>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.)</p>	YES x	NO	Please explain
<p>The N1 is an existing national road at Winburg and the area that is earmarked for upgrading is located from km 78.8 to km 89.0. This existing road will be upgraded in terms of SANRAL's mandate in terms of the South African National Roads Agency Limited and National Roads Act, 1998.</p>			
<p>9. Is the development the best practicable environmental option for this land/site?</p>	YES x	NO	Please explain
<p>The activity falls within the N1 road reserve and the widening of the road will be conducted within the widened N1 road reserve. The potential impacts related to the activity were assessed together with specialist engineering and environmental input and the best practicable environmental option and mitigation measures recommended in the report.</p>			
<p>10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?</p>	YES x	NO	Please explain
<p>The benefits of the proposed development will outweigh the negative impacts as the local communities and road users are in dire need of this project as numerous accidents occur in this area every year with associated loss of lives. The road will, therefore, be widened with a low impact to the environmental but a high positive impact to the community.</p>			
<p>11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?</p>	YES	NO x	Please explain
<p>The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The N1 is a national road and falls within the jurisdiction of the SANRAL. This development will therefore not set a precedent for similar activities as it is not bound by the Municipality's infrastructure planning in order to continue.</p>			

BASIC ASSESSMENT REPORT

12. Will any person's rights be negatively affected by the proposed activity/ies?	YES	NO x	Please explain
It is not foreseen that any person's rights will be negatively affected by the proposed activity as no community displacement will take place. A public participation process were followed and the comments taken into account during the environmental process.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	YES	NO x	Please explain
The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa in terms of the South African National Roads Agency Limited and National Roads Act, 1998. The N1 is a national road and falls within the jurisdiction of the SANRAL and the development is not bound by the Municipality's urban edge in order to continue as it is not a residential development or municipal road development.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	YES	NO x	Please explain
This project is not included in any of the SIP projects.			
15. What will the benefits be to society in general and to the local communities?	Please explain		
<p>The proposed road upgrade could offer several benefits to society in general, including:</p> <ul style="list-style-type: none"> • Decrease accidents due to narrow road being widened and at grade intersections safety enhancement; • Safer driving conditions for the road users as the extended road surface will provide opportunities to pass heavy vehicles. Turn movements and safety at the intersections will improve; • With the upgrade of the road, less maintenance on vehicles are anticipated; • Improved traffic flow of commuter traffic, particularly during peak periods; • Reduced congestion; • Less traffic accidents; • Improved drainage and other services. 			
16. Any other need and desirability considerations related to the proposed activity?	Please explain		
<ul style="list-style-type: none"> • Employment opportunities for the local residents during construction. • Less accidents and associated loss of lives. • Improved traffic flow, particularly during peak periods; • Reduced congestion; • Improved drainage and other services. • Drainage channels will be improved 			
17. How does the project fit into the National Development Plan for 2030?	Please explain		
The SANRAL is given the power to perform all strategic planning, as well as the planning, design, construction, operation, management, control, maintenance and rehabilitation of all national roads in South Africa. The N1 is a national road and falls within the jurisdiction of the SANRAL in terms of the South African National Roads Agency Limited and National Roads Act, 1998.			

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

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

- h) Identified, predicted and evaluated the actual and potential impact on the environment as a result of the upgrade of the road as well as the socio-economic conditions and cultural heritage,
- i) Investigated alternatives and options for mitigation of activities, with a view to minimizing negative impacts.
- j) Maximizing benefits to the environment as a result of the upgrade of the road;
- k) Ensured that the effects of activities on the environment received adequate consideration before actions are taken in connection with them;
- l) Ensured adequate and appropriate opportunity for public participation in decisions that may affect the environment;
- m) Ensured the consideration of environmental attributes in management and decision-making which may have a significant effect on the environment; and
- n) Identified and employed the modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in section 2 of the NEMA.

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

The following have been taken into account:

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

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
EIA Regulations GN R. 544 Activities 11, 18, 22, 39, 40, 47.	Listed activities triggered in terms of the EIA Regulations, 2010	Department of Environmental Affairs	18 June 2010
EIA Regulations, 2010 R. 546: Activity 14.			

BASIC ASSESSMENT REPORT

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
<p>Department of Environmental Affairs Departmental Guidelines under www.environment.gov.za</p>	<p>Guidance with regard to the execution of the Basic Assessment process</p>	<p>Department of Environmental Affairs</p>	<p>2010</p>
<p>National Environmental Management Act, 1998 (Act No. 107 of 1998)</p> <p>The National Environmental Management Act, 1998 (Act No. 107 of 1998): [NEMA] was enacted in November 1998. NEMA provides for cooperative governance by establishing principles for decision-making on matters affected the environment, institutions that will promote co-operative governance and procedures for coordinating environmental functions, public participation and sustainable development.</p>	<p>General objectives of Integrated Environmental Management as set out in section 23 of NEMA taken into account</p>	<p>The National Department of Environmental Affairs</p>	<p>27 November 1998</p>
<p>National Water Act (Act No. 36 of 1998)</p> <p>The application for a Water Use License in terms of the National Water Act, 1998.</p>	<p>Stream crossings and possible application of Water Use License or general authorization at the Department of Water Affairs</p>	<p>Department of Water Affairs</p>	<p>20 August 1998</p>
<p>National Heritage Resource Act 1999 (Act No. 25 of 1999)</p> <p>In terms of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) comment was obtained from SAHRA.</p>	<p>Any linear activity that exceeds 300 m in extent requires input from SAHRA.</p>	<p>South African Heritage Resources Agency (SAHRA)</p>	<p>1999</p>
<p>Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)</p>	<p>Any relocation or destruction of a protected plants species requires a permit</p>	<p>Free State Department of Tourism, Environmental & Economic Affairs</p>	<p>1983</p>

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
10 m ³	

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

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

Waste skips will be provided at the construction camp site and strategically along the route. These waste bins will be regularly emptied by a contractor who in turn will dispose of the waste at a recognized waste disposal site.

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

The solid waste will be disposed of at a recognized waste disposal site. Waste will feed into the Masilonyana Local Municipality Local Municipality municipal waste stream.

Will the activity produce solid waste during its operational phase?

YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
m ³	

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

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.

The solid waste will be disposed of in the Masilonyana Local Municipality landfill sites.

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 <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
------------------------------	--

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 <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
------------------------------	--

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 <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
m ³	

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 <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
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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.

BASIC ASSESSMENT REPORT

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

YES	NO x
-----	------

If YES, provide the particulars of the facility:

Facility name:	n/a		
Contact person:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

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

Recycling of wastewater will be undertaken if an asphalt plant with a wet scrubber system will be utilised for the production of asphalt on the road.

c) Emissions into the atmosphere

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

YES	NO x
-----	------

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

YES	NO
-----	----

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:

During the construction phase some dust might be generated. Dust will be suppressed through regular water spraying of surfaces as indicated in the EMPr.

d) Waste permit

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

YES	NO x
-----	------

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?

YES x	NO
-------	----

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

YES	NO x
-----	------

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.

If NO, describe the noise in terms of type and level:

Construction noise will be generated during normal working hours. Mitigation measures for noise generated during construction are included in the EMPr.

BASIC ASSESSMENT REPORT

13. WATER USE

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

Municipal <input checked="" type="checkbox"/>	Water board	Groundwater	River, stream, dam or lake	Other	The activity will not use water
---	-------------	-------------	-------------------------------	-------	------------------------------------

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?

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

litres	
YES <input checked="" type="checkbox"/>	NO

14. ENERGY EFFICIENCY

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

The following energy efficient measures will be taken on the project:

- Equipment generating energy will be properly insulated to prevent energy loss.
- Compact fluorescent lights will be installed in the site offices.

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

The use of solar geysers will be investigated for use at the contractor camp site during construction. Compact fluorescent lights will be installed in the site offices.

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):

0

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 <input checked="" type="checkbox"/>	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.

BASIC ASSESSMENT REPORT

Property description/physical address:

Province	Free State
District Municipality	Lejweleputswa District Municipality
Local Municipality	Masilonyana Local Municipality (Winburg)
Ward Number(s)	Wards 4 and 5
Farm name and number	N1 road reserve
Portion number	None (N1 road reserve)
SG Code	None (N1 road reserve)

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

Current land-use zoning as per local municipality IDP/records:

N1 road reserve

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings 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 <input checked="" type="checkbox"/>
-----	--

THERE IS ONLY 1 SITE ALTERNATIVE FOR THIS EXISTING LINEAR PROJECT

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

Flat	1:50 – 1:20 <input checked="" type="checkbox"/>	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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Alternative S2 (if any): None

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper
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Alternative S3 (if any): None

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
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2. LOCATION IN LANDSCAPE

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

2.1 Ridgeline	<input type="checkbox"/>	2.4 Closed valley	<input type="checkbox"/>	2.7 Undulating plain / low hills	<input checked="" type="checkbox"/>
2.2 Plateau	<input type="checkbox"/>	2.5 Open valley	<input type="checkbox"/>	2.8 Dune	<input type="checkbox"/>
2.3 Side slope of hill/mountain	<input type="checkbox"/>	2.6 Plain	<input type="checkbox"/>	2.9 Seafront	<input type="checkbox"/>

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

	Alternative S1:		Alternative S2 (if any): None		Alternative S3 (if any): None	
Shallow water table (less than 1.5m deep)	YES x	NO	YES	NO	YES	NO
Dolomite, sinkhole or doline areas	YES	NO x	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES x	NO	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO x	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO x	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO x	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	NO x	YES	NO	YES	NO
An area sensitive to erosion	YES	NO x	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 ^E	Natural veld with scattered aliens ^E	Natural veld with heavy alien infestation ^E x	Veld dominated by alien species ^E	Gardens
Sport field	Cultivated land	Paved surface x	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?

Only small seasonal streams and drainage lines identified (Appendix D).

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

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

A specialist report was conducted by Eko Environmental dated September 2014 attached in Appendix D i.e. "Report on the biodiversity, ecological and wetland assessment of the proposed rehabilitation and upgrading to dual carriageway of National Route 1, Section 16, Winburg, Free State Province as well as the associated borrow pits and quarries". The report has the following conclusions:

Stream 1 - Small seasonal stream within ravine (Map 4)

This stream is small and seasonal in nature, flowing only after rain events and for short periods only. The stream is unnamed as it is small and not prominent in the landscape. It is not mapped by the National Freshwater Ecosystems Priority Areas (NFEPA) due to its small size. The origin of the stream is highly modified and degraded. The stream is crossed by the N1 road, has been dammed by weirs in the flow channel and due to communal grazing the natural vegetation is highly degraded and transformed. Despite the degraded and modified nature of the stream it still function as a water transporting channel and must therefore be considered sensitive and important in terms of the ecology of the area.

Stream 2 - Small seasonal stream within plains (Map 6)

This stream is small and seasonal in nature, flowing only after rain events and for short periods only. The stream is unnamed as it is small and not prominent in the landscape. It is not mapped by the National Freshwater Ecosystems Priority Areas (NFEPA) due to its small size. The origin of the stream is highly degraded and modified to some extent. The stream is crossed by the N1 road, has been dammed by weirs in the flow channel and due to communal grazing the natural vegetation is highly degraded and transformed. Despite the degraded and modified nature of the stream it still function as a water transporting channel and must therefore be considered sensitive and important in terms of the ecology of the area.

Although these water related systems are in various degrees degraded they remain sensitive ecological areas as they perform vital ecological functions. The rehabilitation and upgrading of the N1 National Road should in no way further alter the flow pattern of these streams. The rehabilitation of the road should endeavour to improve the natural flow pattern of these streams.

Drainage lines 1 – 7

Due to the area consisting of undulating plains with scattered low hills the area contains numerous drainage lines. They are often not readily distinguishable from the surrounding environment and do not form well defined main channels. The vegetation supported by these drainage lines are also not riparian/wetland species. As a result these drainage lines cannot according to definition be regarded as watercourses. Despite the degraded and modified condition of the drainage lines they still function as a water transporting areas and must therefore be considered sensitive and important in terms of the ecology of the area.

Although these water related systems are in various degrees degraded they remain sensitive ecological areas as they perform vital ecological functions. The rehabilitation and upgrading of the N1 National Road should in no way further alter the flow pattern of these streams. The rehabilitation of the road should endeavour to improve the natural flow pattern of these streams.

BASIC ASSESSMENT REPORT

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 x	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 x
Retail commercial & warehousing	Old age home	River, stream or wetland x
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 x	Museum
Power station	Major road (4 lanes or more) ^N	Historical building
Office/consulting room	Airport ^N	Protected Area
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam ^A	Sport facilities	Archaeological site x
Quarry, sand or borrow pit x	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?

None

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:

Following the specialist studies and impact assessment undertaken for the project, the road will be widened with a low impact to the environmental but a high positive impact to the local communities and road users.

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:

None

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

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

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 x	NO
Uncertain	

A specialist heritage study was undertaken by Dr J van Schalkwyk dated September 2014 included in Appendix D called "Cultural heritage impact assessment for the rehabilitation and upgrade of National Route 1 section 16 between Winburg Interchange (km 78.8) and the Intersection to Winburg station (km 89.0), Free State Province". The report contains the following conclusions:

Borrow Pit 2

The remains of a small rectangular house structure were identified at borrow pit 2. Approximately 35 m to the northwest, behind the house structure, three graves were identified. These are only marked with stone cairns and no information about their age or who were buried there could be found. These two features are probably related to each, making it a unit. Any impact would therefore have an impact on the whole.

Both these features seem to occur outside of the proposed borrow pit expansion and it would be possible to avoid them. It is recommended that these sites are left in place and that they are fenced off with danger tape with a buffer of at least 10 metres from the outer most edge of the visible structures for the duration of the activities at the borrow pit. If it is impossible to avoid these sites, they should be documented and excavated by a qualified archaeologist.

Quarry Site 1

The remains of an old farm labourer homestead were identified. It consists of the remains of at least two stone built structures as well as a large refuse dump. It is difficult impossible to date as it does not occur on the older versions of the cadastral maps and the surface finds (glass, metal, etc.) have no diagnostic features. However, the site is viewed to be older than sixty years.

As all these feature seem to occur on the western edge of the quarry site, it would be possible to avoid them. It is recommended that the site is left in place and that it is fenced off with danger tape with a buffer of at least 10 metres from the outer most edge of the visible structures for the duration of the activities at the borrow pit. If it is impossible to avoid the site, it should be documented and excavated by a qualified archaeologist.

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:

BASIC ASSESSMENT REPORT

An independent heritage consultant, Dr J van Schalkwyk was appointed by Chameleon Environmental to conduct a Heritage Impact Assessment (HIA) to determine if any sites, features or objects of cultural heritage significance occur within the boundaries of the area where it is planned to upgrade the existing road.

The following conclusions and recommendations are drawn:

- a. The sites identified by Dr Van Schalkwyk could be avoided and left in place. The sites will be fenced off with danger tape with a buffer of at least 10 metres from the outer most edge of the visible structures for the duration of the activities at the borrow pit.

Therefore, from a heritage point of view it is recommended that the proposed development can continue, on condition of acceptance of the above mitigation measures. It is requested that if archaeological sites or graves are exposed during construction work, it should immediately be reported to a heritage consultant so that an investigation and evaluation of the finds can be made.

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 x
YES	NO x

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:

Masilonyana Local Municipality

Masilonyana Local Municipality is situated between the province's biggest municipality (Mangaung Metropolitan Municipality in the south) and the second-biggest municipality (Matjhabeng Local Municipality in the north). The former administration of the following greater Transitional Local Councils: Theunissen, Brandfort, Winburg, Soutpan and Verkeerdevlei, were amalgamated into the local municipality of Masilonyana. It is an impoverished semi-urban area with a high unemployment rate.

Demographic Information:

Population: 63 334

Households: 17 575

Population Growth: -0.17% p.a.

Unemployment Rate: 38.80%

BASIC ASSESSMENT REPORT

Sources: <http://www.localgovernment.co.za/locals/view/43/masilonyana-local-municipality>

Economic profile of local municipality:

Masilonyana Local Municipality

Other than agriculture and mining, the economy of Masilonyana Local Municipality relies mainly on steel and peanut processing factories. The tourism infrastructure of the region is underdeveloped. There is, however, a potential to upgrade the tourism sector with regard to specific areas such as eco-tourism and game farming in Boshoff, Brandfort and Hertzogville and mining and cultural tourism and some sporting activities in the larger area.

There are 18 633 economically active (employed or unemployed but looking for work) people, and of these 38,8% are unemployed. Of the 9 661 economically active youth (15–34 years) in the area.

http://beta2.statssa.gov.za/?page_id=993&id=masilonyana-municipality

Level of education:

Masilonyana Local Municipality

According to Census 2011, the municipality has a total population of 63 334 people of which 91,6% are black African, 6,7% are white people and with the other population groups making up the remaining 1,7%.

Of those aged 20 years and older, 7,6% have completed primary school, 34,7% have some secondary education, 23,2% have completed matric and 4,5% have some form of higher education.

http://beta2.statssa.gov.za/?page_id=993&id=masilonyana-municipality

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R650 million
What is the expected yearly income that will be generated by or as a result of the activity?	R 0
Will the activity contribute to service infrastructure?	YES x NO
Is the activity a public amenity?	YES x NO
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Approximately 80 per day over a 36 month construction period
What is the expected value of the employment opportunities during the development and construction phase?	Approximately R18 million
What percentage of this will accrue to previously disadvantaged individuals?	Approximately 12 %
How many permanent new employment opportunities will be created during the operational phase of the activity?	None

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What is the expected current value of the employment opportunities during the first 10 years?	None
What percentage of this will accrue to previously disadvantaged individuals?	None

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.

- 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) x	No Natural Area Remaining (NNR)	n/a

There is currently no critical biodiversity plan as per provincial conservation available for the Free State Province.

- 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	0%	
Near Natural (includes areas with low to moderate level of alien invasive plants)	20%	The study area outside the road reserve that will be acquired for the widening of the road.
Degraded (includes areas heavily invaded by alien plants)	80 %	The study area within the N1 road reserve is heavily transformed.
Transformed	0%	

BASIC ASSESSMENT REPORT

(includes cultivation, dams, urban, plantation, roads, etc)		
---	--	--

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 status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Critical	Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)			Estuary		Coastline	
	Endangered							
	Vulnerable							
	Least Threatened x	YES	NO x	UNSURE	YES	NO x	YES	NO x

- 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)**

The vegetation in this area consists of Central Free State Grassland (Gh 6). According to the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) this vegetation type is not currently listed as being of conservational concern. The vegetation type has however been affected by transformation for agriculture and dam construction. The vegetation within the road reserve is degraded and does not present a healthy sample of this vegetation type. It can be considered as transformed. The road reserve cannot be considered as a conservable portion of this vegetation type. The surrounding hills, ridges and plateaus also consist of Winburg Grassy Shrubland (Gh 7) and Bloemfontein Karroid Shrubland (Gh 8) although these do not occur within the road reserve and will therefore not be affected.

No species of concern, i.e. protected, rare or endangered, occur within the existing road reserve. Due to the transformed and degraded nature of the vegetation within the road reserve it is considered unlikely that any such species would occur.

The proposed borrow pits and rock quarries have been rated as being Acceptable in terms of the biodiversity and ecology of the sites.

All of the borrow pits and quarries will be situated at sites which have previously been utilised and are therefore degraded. The habitat within the existing borrow pits and quarries have also been permanently altered and cannot be considered as contributing to diversity. As a result of the degraded condition these existing borrow pits and quarries also do not contain a high diversity of species. The existing borrow pits and quarries are therefore of low conservation value.

However, the surrounding natural area will also be incorporated into the footprint of the borrow pits and quarries. This is of relevance at quarry site 3 where the surrounding area is unique and supports a unique habitat and assemblage of species. This area consists of Bloemfontein Karroid Shrubland (Gh 8). According to Brown & Du Preez 2014 this vegetation type must be considered as endemic to the Free State Province and must be afforded a high conservation status and must be included as a Threatened Ecosystem. This vegetation type is well known to have a high species diversity. As a result of the high diversity and unique habitat this area also contains several protected species. This area has a high conservation value.

The occurrence of this high amount of protected species and diversity in this area has a significant conservation value. This habitat as indicated by Map 3 must be excluded from the footprint of the proposed quarry.

Eko Environmental, 2014

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Volksblad	
Date published	12 September 2014	
Site notice position	Latitude	Longitude

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	28.44459°	27.03336°
	28.48612°	27.00179°
	28.54097°	26.98233°
Date placed	28 September 2014	

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 54(2)(e) and 54(7) of GN R.543.

Key stakeholders (other than organs of state) identified in terms of Regulation 54(2)(b) of GN R.543:

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
Landowners next to road	See full list in Appendix E2.	See full list in Appendix E2.
Mr Sipho Mtakati	Municipal Manager Masilonyana Local Municipality	Tel: 051 881-0003 Fax: 051 881-0439 mtakatis@yahoo.com
Mr John Mabitla	Speaker Masilonyana Local Municipality	Tel: 051 881-0003 Cell: 0823175437 Fax: 051 881-0439 John_Mabitla@yahoo.com
Mr Khotso Sekharume	Ward Councillor Ward 4	speech4kasi@gmail.com
Ms Masetjhaba Tsoaela	Ward Councillor Ward 5	Tel: 051 881-0003 Fax: 051 881-0439 John_Mabitla@yahoo.com

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
Extensive public participation held. See issues and response report in Appendix E3.	Extensive public participation held. See issues and response report in Appendix E3.

BASIC ASSESSMENT REPORT

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
Free State Department of Tourism, Environmental & Economic Affairs	Ms Tshegofatso Lekgari	051 400-4846	051 400-4772	Lekgarit@detea.fs.gov.za	Private Bag X20801 Bloemfontein 9300
South African Heritage Resources Agency	Mr Phillip Hine	021 462 4502	021 462 4509	phine@sahra.org.za (information to be posted on SAHRA website)	PO Box 4637 Cape Town 8000
Department Of Water Affairs	Mr Carlo Schrader	051 405 9000 / 9262	051 4059000	schraderc@dwa.gov.za	PO Box 528 Bloemfontein 9300
Dept. Public Works, Roads & Transport General Manager: Roads & Storm Water	Mr J Letsie	051 410-6743/4 082 579 7671	051 410-7306	jeff.letsie@mangaung.co.za	PO Box 3704 Bloemfontein 9300
Dept of Agriculture Free State Province	Dr L Moorosi	071 218 3197	None	pahod@agric.fs.gov.za	Private Bag X02 Bloemfontein 9300

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.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, 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.

Activity	Impact summary	Significance	Proposed mitigation
Alternative A1 (preferred alternative)			
<u>Planning and design phase</u>	<p>Direct impacts:</p> <ul style="list-style-type: none"> • Placement and access of construction site camp area. • Designs of drainage systems (culverts and pipes) at sensitive riparian areas. • Design of widening of culverts. 	<p>Medium</p> <p>Medium</p> <p>Medium</p>	<ul style="list-style-type: none"> • The final design of the road must include the appropriate siting of all construction camps (i.e. site camps and worker accommodation camps, where required), as well as a site layout plan. • The establishment of a construction yard may only occur in an area that has previously been disturbed. This area must be approved by the Environmental Control Officer (ECO)

BASIC ASSESSMENT REPORT

Activity	Impact summary	Significance	Proposed mitigation
			<p>and must be inspected regularly.</p> <ul style="list-style-type: none"> • Drainage systems shall be adequately designed to allow for run-off from a 1:50 year flood condition. Culverts, pipes and channels shall be concrete lined. In designing culverts along the proposed route, it must be ensured that drainage systems are kept as natural as possible. Natural drainage should be retained, and normal flow ensured at all times.
	<p><i>Indirect impacts:</i> <u>Planning and design phase</u></p> <p>Possible relocation of services i.e. Telkom lines, water pipes and Eskom lines.</p>	<p>High</p>	<ul style="list-style-type: none"> • Where service disruption is inevitable, the Contractor must advise the Project Manager at least 7 days in advance, allowing enough time to inform affected parties. • Any complaints must be included in the complaints register maintained on site. • Updated information boards must be maintained on site and must include contact details for complaints by the public in accordance with details provided by the Engineer.
	<p><i>Cumulative impacts:</i> <u>Planning and design phase</u></p>		

BASIC ASSESSMENT REPORT

Activity	Impact summary	Significance	Proposed mitigation
	There are no cumulative impacts associated with the design phase.	None	None
<u>Construction phase</u>	<p>Direct impacts:</p> <ul style="list-style-type: none"> • Possible impacts to the streams with the extension of culverts and pipes; • Possible impact to streams with the mining of material in borrow pits and quarries; • Possible impact on Bloemfontein Karroid Shrubland (Gh 8) at quarry 3; • Possible impact on protected tree species in the road reserve and in areas to be acquired outside road reserve; • Possible impact on mammals and snakes; • Possible erosion of soils and loss of topsoil; • Possible invasion of exotic species; • Possible pollution of solid waste; • Possible sewage pollution; • Possible pollution of fuels and gas as a result of inadequate storage; • Possible pollution by cement or concrete; • Possible noise pollution; • Possible dust pollution. • Possible impact on archaeological sites and graves in road reserve and at mining areas (The remains of a small rectangular house structure and three graves were identified to the northwest of BP 2 and the remains of an old farm labourer 	<p>High</p> <p>High</p> <p>High</p> <p>High</p> <p>Medium</p> <p>Medium</p> <p>Medium</p> <p>Medium</p> <p>Medium</p> <p>Medium</p> <p>Medium</p> <p>Medium</p> <p>Medium</p> <p>High</p>	<ul style="list-style-type: none"> • Quarry site 1 contains two drainage lines within a distance of 150 and 100 meters from the site. The drainage lines must be excluded from the footprint and a distance of 32 meters kept from these drainage lines. • Quarry site 3 is situated within Bloemfontein Karroid Shrubland (Gh 8) which must be considered as sensitive with a significant conservation value. The portion of the site as indicated on Map 3 must be excluded from the footprint of the quarry and no activities should be allowed within this area. • Scattered specimens of the protected trees, <i>Olea europaea</i> subsp. <i>africana</i> and <i>Celtis africana</i>, occur within the road reserve (Appendix D). Permits must be obtained to remove those specimens that will be affected. • There is a high likelihood that several mammal species may inhabit the road reserve. These are limited to opportunistic, widespread species that are well adapted to the disturbed conditions. No animal species may be harmed in any way and no hunting or capturing

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Activity	Impact summary	Significance	Proposed mitigation
	<p>homestead were identified to the western edge of quarry 1).</p>	<p>High</p>	<p>of animals may be permitted. These animals will move out of the road reserve of their own accord.</p> <ul style="list-style-type: none"> • In the event of poisonous snakes or other dangerous animals encountered on the site an experienced and certified snake handler or zoologist must remove these animals from the site and re-locate them to a suitable area. • The two seasonal streams crossed by the road is small and not prominent in the landscape (Table 4, Map 1, 4, 5). They are not mapped by the National Freshwater Ecosystem Priority Areas (NFEPA) due their small size (Map 2). Although they are degraded and transformed they must still be considered as sensitive and important in terms of the ecology of the area. • The two seasonal streams being crossed by the N1 National Road are in a degraded condition and transformed to a large extent. In spite of this they must be considered as being sensitive areas and no alteration of the flow patterns within these streams must be allowed. The disturbance of the streambanks must be kept to a minimum. The following recommendations should

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Activity	Impact summary	Significance	Proposed mitigation
			<p>be adhered to, to ensure that disturbance of the streams are kept to a minimum:</p> <ul style="list-style-type: none"> □ Where culverts are replaced these should be adequate to allow for sufficient water flow and should not retard water flow. □ Culvert width should be equal to the stream width, this will minimise channel erosion. □ The culvert orientation should follow the main channel flow direction of the streams. <p>Disturbance and sedimentation of the stream bed must be prevented as far as possible. The use of attenuation ponds must be investigated where disturbance of the stream bed will take place.</p> <ul style="list-style-type: none"> □ Installation of culverts should preferably take place during the dry season (June to September) when zero flows are present within these streams. This will prevent water erosion of the stream bed sediments. □ During installation of culverts, rehabilitation of the road along the stream and widening

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Activity	Impact summary	Significance	Proposed mitigation
			<p>of the road at these streams the riparian vegetation (reeds and sedges) should be removed together with the topsoil and replaced afterwards in bare areas. This will speed up recovery of the riparian vegetation.</p> <ul style="list-style-type: none"> □ If it is not possible to install culverts during the dry season only half of the stream may be blocked off during culvert installation (applicable only if main channel flow is present). □ Following completion of the culvert installation the area will be susceptible to erosion. This must be prevented by the use of gabions or other geotextiles. □ The time period for the installation of culverts should be kept to a minimum. □ After cessation of construction the culverts should be regularly inspected for erosion and this should be corrected. <ul style="list-style-type: none"> • Wherever the removal of topsoil is necessary the topsoil should be stockpiled separately and protected against weed infestation and erosion. • Topsoil should be replaced on top of the

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Activity	Impact summary	Significance	Proposed mitigation
			<p>soil surface where it has been removed as soon as possible.</p> <ul style="list-style-type: none"> • Stormwater flow should be managed to promote free draining borrow pits and quarries. • The use of hydro-seeding should be investigated for rehabilitation of the road reserve as well as the borrow pit and quarry sites where the establishment of vegetation does not occur within a reasonable time period after cessation of construction. • The heritage structures identified seem to occur outside of the proposed borrow pit expansion and it would be possible to avoid them. It is recommended that these sites are left in place and that they are fenced off with danger tape with a buffer of at least 10 metres from the outer most edge of the visible structures for the duration of the activities at the borrow pit. If it is impossible to avoid these sites, they should be documented and excavated by a qualified archaeologist.
	<p>Indirect impacts:</p> <ul style="list-style-type: none"> • Possible weed invaders as a result of disturbance of soil. • Possible erosion at stream banks 	<p>Medium</p> <p>High</p>	<ul style="list-style-type: none"> • All alien vegetation in the road reserve should be removed upon completion of construction. • Bank vegetation cover should be monitored to ensure that sufficient

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Activity	Impact summary	Significance	Proposed mitigation
	<p>Cumulative impacts:</p> <ul style="list-style-type: none"> • Possible additional traffic on the roads during construction; • Possible influx of people in the area during construction. 	<p>High</p> <p>Medium</p>	<p>vegetation is present to bind the bankside soils and prevent further bankside erosion.</p> <ul style="list-style-type: none"> • The additional traffic will be managed by the contractor through the traffic management as included in the tender document to the project. • A Public Liaison Officer (PLO) should be appointed through the relevant ward councillor to manage the employment opportunities on the project.
<p><u>Operational phase (Maintenance phase)</u></p>	<p><u>Direct impacts:</u></p> <ul style="list-style-type: none"> • Possible increase in alien vegetation; • Possible bank failure at aquatic systems present 	<p>Medium</p> <p>High</p>	<ul style="list-style-type: none"> • Mechanical control of alien plants around disturbed areas to be implemented within three months of completion of construction. Thereafter every six months. Mechanical control to be of such a nature as to allow local, indigenous grasses and other pioneers to colonise the previously disturbed areas, thereby keeping out alien invasives. • No chemical control (herbicides) of alien plants to be used. Herbicides could get into the water system and will have a detrimental effect on the environment. • Areas around foundations, culverts, gabions, etc. need to be

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Activity	Impact summary	Significance	Proposed mitigation
			<p>check before and after the summer rainy season for signs of soil erosion due to stormwater run-off. Such sites need to be modified and rehabilitated to prevent ongoing erosion. These sites need to be monitored more closely than other sites which show no or minimal signs of erosion.</p> <ul style="list-style-type: none"> No inspection or other vehicles to drive through watercourses except where there are existing bridges, roads and other existing crossovers.
	<p>Indirect impacts:</p> <p>There is no indirect impacts associated with the maintenance phase</p>	None	None
	<p>Cumulative impacts:</p> <p>There is no cumulative impacts associated with the maintenance phase</p>	None	None
<p><u>Decommissioning and closure phase.</u></p> <p>This phase only pertains to the decommissioning of the construction camp site. The road itself will not be decommissioned in the foreseeable future.</p>	<p>Direct impacts:</p> <ul style="list-style-type: none"> To ensure that disturbed areas, borrow pits and quarries and the construction site camp are rehabilitated after construction has been completed. 	High	<ul style="list-style-type: none"> The use of hydro-seeding should be investigated for rehabilitation of the road reserve as well as the borrow pit and rock quarry sites where the establishment of vegetation does not occur within a reasonable time period after cessation of construction. After construction the areas cleared of vegetation will be

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Activity	Impact summary	Significance	Proposed mitigation
			<p>susceptible to infestation by invader weed species. The road reserve should be monitored for the presence of invader weed species (Refer to Appendix D of specialist report by Eko Environmental for likely invader species to be removed).</p> <ul style="list-style-type: none"> • All overburden and spoils should be replaced in the borrow pits and rock quarries and the surrounding areas should be levelled to its original state once excavation activities has ceased. • Areas that have become compacted due to construction activities should be ripped. • After cessation of activities on the site the area should be rehabilitated to acceptable standards. • After construction has ceased all construction materials should be removed from the road reserve. • The hydro-seeding mixture must be certified weed free.
	<p>Indirect impacts:</p> <p>There is not indirect impacts associated with the decommissioning phase</p>	None	None
	<p>Cumulative impacts:</p> <p>There is not indirect impacts associated with the decommissioning phase</p>	None	None

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Activity	Impact summary	Significance	Proposed mitigation
Alternative A2			
<u>Planning and design phase</u>	<p>Direct impacts:</p> <ul style="list-style-type: none"> • Placement and access of construction site camp area. • Designs of drainage systems (culverts and pipes) at sensitive riparian areas. • Design of widening of culverts. 	<p>Medium</p> <p>Medium</p> <p>Medium</p>	<ul style="list-style-type: none"> • The final design of the road must include the appropriate siting of all construction camps (i.e. site camps and worker accommodation camps, where required), as well as a site layout plan. • Drainage systems shall be adequately designed to allow for run-off from a 1:50 year flood condition. Culverts, pipes and channels shall be concrete lined. In designing culverts along the proposed route, it must be ensured that drainage systems are kept as natural as possible. Natural drainage should be retained, and normal flow ensured at all times.
	<p>Indirect impacts: <u>Planning and design phase</u></p> <p>Possible relocation of services i.e. Telkom lines, water pipes and Eskom lines.</p>	<p>High</p>	<ul style="list-style-type: none"> • Where service disruption is inevitable, the Contractor must advise the Project Manager at least 7 days in advance, allowing enough time to inform affected parties. • Any complaints must be included in the complaints register maintained on site. • Updated information boards must be maintained on site and

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Activity	Impact summary	Significance	Proposed mitigation
			<p>must include contact details for complaints by the public in accordance with details provided by the Engineer.</p>
<u>Construction phase</u>	<p><u>Cumulative impacts: Planning and design phase</u></p> <p>There are no cumulative impacts associated with the design phase.</p> <p><u>Direct impacts:</u></p> <ul style="list-style-type: none"> • Possible impacts to the streams with the extension of culverts and pipes; • Possible impact to streams with the mining of material in borrow pits and quarries; • Possible impact on protected trees in areas to be acquired outside road reserve; • Possible impact on mammals and snakes; • Possible erosion of soils and loss of topsoil; • Possible invasion of exotic species; • Possible pollution of solid waste; • Possible sewage pollution; • Possible pollution of fuels and gas as a result of inadequate storage; • Possible pollution by cement or concrete; • Possible noise pollution; • Possible dust pollution; • Possible impact on archaeological sites and graves (The remains of a small rectangular house structure and three graves were identified to the 	<p>None</p> <p>High</p> <p>High</p> <p>High</p> <p>High</p> <p>Medium</p> <p>Medium</p> <p>Medium</p> <p>Medium</p> <p>Medium</p> <p>Medium</p>	<ul style="list-style-type: none"> • Quarry site 1 contains two drainage lines within a distance of 150 and 100 meters from the site. The drainage lines must be excluded from the footprint and a distance of 32 meters kept from these drainage lines. • Quarry site 3 is situated within Bloemfontein Karroid Shrubland (Gh 8) which must be considered as sensitive with a significant conservation value. The portion of the site as indicated on Map 3 must be excluded from the footprint of the quarry and no activities should be allowed within this area. • Scattered specimens of the protected trees, <i>Olea europaea subsp. africana</i> and <i>Celtis africana</i>, occur within the road reserve (Appendix D). Permits must be obtained to remove those specimens that will be affected. • There is a high likelihood that several mammal species may inhabit the

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Activity	Impact summary	Significance	Proposed mitigation
	<p>northwest of BP 2 and the remains of an old farm labourer homestead were identified to the western edge of quarry 1).</p> <ul style="list-style-type: none"> • 	<p>Medium</p> <p>Medium</p> <p>Medium</p> <p>Medium</p> <p>High</p> <p>High</p>	<p>road reserve. These are limited to opportunistic, widespread species that are well adapted to the disturbed conditions. No animal species may be harmed in any way and no hunting or capturing of animals may be permitted. These animals will move out of the road reserve of their own accord.</p> <ul style="list-style-type: none"> • In the event of poisonous snakes or other dangerous animals encountered on the site an experienced and certified snake handler or zoologist must remove these animals from the site and re-locate them to a suitable area. • The two seasonal streams crossed by the road is small and not prominent in the landscape (Table 4, Map 1, 4, 5). They are not mapped by the National Freshwater Ecosystem Priority Areas (NFEPA) due their small size (Map 2). Although they are degraded and transformed they must still be considered as sensitive and important in terms of the ecology of the area. • The two seasonal streams being crossed by the N1 National Road are in a degraded condition and transformed to a large extent. In spite of this they must be considered as being sensitive areas

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Activity	Impact summary	Significance	Proposed mitigation
			<p>and no alteration of the flow patterns within these streams must be allowed. The disturbance of the streambanks must be kept to a minimum. The following recommendations should be adhered to, to ensure that disturbance of the streams are kept to a minimum:</p> <ul style="list-style-type: none"> □ Where culverts are replaced these should be adequate to allow for sufficient water flow and should not retard water flow. □ Culvert width should be equal to the stream width, this will minimise channel erosion. □ The culvert orientation should follow the main channel flow direction of the streams. <p>□ Disturbance and sedimentation of the stream bed must be prevented as far as possible. The use of attenuation ponds must be investigated where disturbance of the stream bed will take place.</p> <ul style="list-style-type: none"> □ Installation of culverts should preferably take place during the dry season (June to September) when zero flows are present within these streams. This will prevent water erosion of the stream bed sediments. □ During installation of culverts, rehabilitation of the road along the

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Activity	Impact summary	Significance	Proposed mitigation
			<p>stream and widening of the road at these streams the riparian vegetation (reeds and sedges) should be removed together with the topsoil and replaced afterwards in bare areas. This will speed up recovery of the riparian vegetation.</p> <ul style="list-style-type: none"> □ If it is not possible to install culverts during the dry season only half of the stream may be blocked off during culvert installation (applicable only if main channel flow is present). □ Following completion of the culvert installation the area will be susceptible to erosion. This must be prevented by the use of gabions or other geotextiles. □ The time period for the installation of culverts should be kept to a minimum. □ After cessation of construction the culverts should be regularly inspected for erosion and this should be corrected. <ul style="list-style-type: none"> • Wherever the removal of topsoil is necessary the topsoil should be stockpiled separately and protected against weed infestation and erosion. • Topsoil should be replaced on top of the soil surface where it has been removed as soon as possible. • Stormwater flow should be managed to promote

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Activity	Impact summary	Significance	Proposed mitigation
			<p>free draining borrow pits and quarries.</p> <ul style="list-style-type: none"> • The use of hydro-seeding should be investigated for rehabilitation of the road reserve as well as the borrow pit and quarry sites where the establishment of vegetation does not occur within a reasonable time period after cessation of construction. • The heritage structures identified seem to occur outside of the proposed borrow pit expansion and it would be possible to avoid them. It is recommended that these sites are left in place and that they are fenced off with danger tape with a buffer of at least 10 metres from the outer most edge of the visible structures for the duration of the activities at the borrow pit. If it is impossible to avoid these sites, they should be documented and excavated by a qualified archaeologist.
	<p>Indirect impacts:</p> <ul style="list-style-type: none"> • Possible weed invaders as a result of disturbance of soil. • Possible erosion at stream banks 	<p>Medium</p> <p>High</p>	<ul style="list-style-type: none"> • All alien vegetation in the road reserve should be removed upon completion of construction. • Bank vegetation cover should be monitored to ensure that sufficient vegetation is present to bind the bankside soils

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Activity	Impact summary	Significance	Proposed mitigation
	<p>Cumulative impacts:</p> <ul style="list-style-type: none"> • Possible additional traffic on the roads during construction; • Possible influx of people in the area during construction. 	<p>High</p> <p>Medium</p>	<p>and prevent further bankside erosion.</p> <ul style="list-style-type: none"> • The additional traffic will be managed by the contractor through the traffic management as included in the tender document to the project. • A Public Liaison Officer (PLO) should be appointed through the relevant ward councillor to manage the employment opportunities on the project.
<p><u>Operational phase (Maintenance phase)</u></p>	<p><u>Direct impacts:</u></p> <ul style="list-style-type: none"> • Possible increase in alien vegetation; • Possible bank failure at aquatic systems present 	<p>Medium</p> <p>High</p>	<ul style="list-style-type: none"> • Mechanical control of alien plants around disturbed areas to be implemented within three months of completion of construction. Thereafter every six months. Mechanical control to be of such a nature as to allow local, indigenous grasses and other pioneers to colonise the previously disturbed areas, thereby keeping out alien invasives. • No chemical control (herbicides) of alien plants to be used. Herbicides could get into the water system and will have a detrimental effect on the environment. • Areas around foundations, culverts, gabions, etc. need to be checked before and after the summer rainy

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Activity	Impact summary	Significance	Proposed mitigation
			<p>season for signs of soil erosion due to stormwater run-off. Such sites need to be modified and rehabilitated to prevent ongoing erosion. These sites need to be monitored more closely than other sites which show no or minimal signs of erosion.</p> <ul style="list-style-type: none"> No inspection or other vehicles to drive through watercourses except where there are existing bridges, roads and other existing crossovers.
	<p>Indirect impacts:</p> <p>There is no indirect impacts associated with the maintenance phase</p>	None	None
	<p>Cumulative impacts:</p> <p>There is no cumulative impacts associated with the maintenance phase</p>	None	None
<p><u>Decommissioning and closure phase</u></p> <p>This phase only pertains to the decommissioning of the construction camp site. The road itself will not be decommissioned in the foreseeable future.</p>	<p>Direct impacts:</p> <ul style="list-style-type: none"> To ensure that disturbed areas, the construction site camp and borrow pits/quarries are rehabilitated after construction has been completed. 	High	<ul style="list-style-type: none"> The use of hydro-seeding should be investigated for rehabilitation of the road reserve as well as the borrow pit and rock quarry sites where the establishment of vegetation does not occur within a reasonable time period after cessation of construction. After construction the areas cleared of vegetation will be susceptible to infestation by invader weed species.

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Activity	Impact summary	Significance	Proposed mitigation
			<p>The road reserve should be monitored for the presence of invader weed species (Refer to Appendix D of specialist report by Eko Environmental for likely invader species to be removed).</p> <ul style="list-style-type: none"> • All overburden and spoils should be replaced in the borrow pits and rock quarries and the surrounding areas should be levelled to its original state once excavation activities has ceased. • Areas that have become compacted due to construction activities should be ripped. • After cessation of activities on the site the area should be rehabilitated to acceptable standards. • After construction has ceased all construction materials should be removed from the road reserve. • The hydro-seeding mixture must be certified weed free.
	<p>Indirect impacts:</p> <p>There is not indirect impacts associated with the decommissioning phase</p>	None	None
	<p>Cumulative impacts:</p> <p>There is not indirect impacts associated with the decommissioning phase</p>	None	None
No-go option			
	<p>Direct impacts:</p> <ul style="list-style-type: none"> • Increase in unsafe driving conditions; 	High	Upgrade the road

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Activity	Impact summary	Significance	Proposed mitigation
	<ul style="list-style-type: none"> • Increase in traffic accidents; • Increase in loss of lives. 		
	<p>Indirect impacts: Possible traffic accidents as a result of poor driving conditions. Possible injury and death of travelling public.</p>	High	Upgrade the road
	<p>Cumulative impacts: High health care costs as a result of traffic accidents.</p>	High	None

A complete impact assessment in terms of Regulation 22(2)(i) of GN R.543 must be included as Appendix F.

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 after 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.

Alternative A1 (preferred alternative)

1. Introduction

The project is located near the town of Winburg on the National Route 1, Section 16 from Winburg Interchange (km 78.8) to the intersection to Winburg Station (km 89.0). The preferred alternative is the construction of a new section as a north bound lane to create a divided dual carriageway with an 11.4m cross section.

2. This option is favoured for the following reasons

- This option accommodates future capacity upgrades if required.
- It is anticipated that the traffic accidents that occur on this road will be reduced with this option.
- The existing culverts out/in-let structures will only have to be lengthened and replaced on the western side of the road.
- It is anticipated that the road upgrade will cater for future traffic demand and will support economic growth. This will benefit the communities in the area including local residents, motorists, the road freight industry and its customers. The upgrade of the road will, therefore, ensure safer driving conditions for the traveling public by enabling vehicles to travel more efficiently and smoothly with less congestion.

3. Possible Environmental Impacts

The main possible environmental impacts associated with this alternative is the following:

- Possible impacts to the streams with the extension of culverts and pipes;
- Possible impact to streams with the mining of material in borrow pits and quarries;
- Possible impact on protected trees in areas to be acquired outside road reserve;
- Possible impact on Bloemfontein Karroid Shrubland (Gh 8) at quarry 3;
- Possible impact on mammals and snakes;
- Possible erosion of soils and loss of topsoil;
- Possible invasion of exotic species;
- Possible pollution of solid waste;
- Possible sewage pollution;
- Possible pollution of fuels and gas as a result of inadequate storage;
- Possible pollution by cement or concrete;
- Possible noise pollution;
- Possible dust pollution;
- Possible impact on archaeological sites and graves (An informal cemetery west of the road at km and two old farm labourer homesteads and stone cairn at borrow pit 8 will not be impacted upon).

Should the mitigation measures as included in the EMPr for the project are adhered to, the possible impacts related to this project will be medium to low.

4. Specialist Studies Undertaken

Two specialist studies were undertaken for this project i.e.

- a. Report on the biodiversity, ecological and wetland assessment of the proposed rehabilitation and upgrading to dual carriageway of National Route 1, Section 16, Winburg, Free State Province as well as the associated borrow pits and quarries undertaken by Eko Environmental dated September 2014.
- b. Cultural Heritage Impact Assessment for the rehabilitation and upgrade of National Route 1 Section 16 between Winburg Interchange (km 78.8) and the Intersection to Winburg Station (km 89.0), Free State Province undertaken by Dr J van Schalkwyk dated September 2014.

5. Recommendations by Specialist Reports

The following recommendations were included in the specialist reports and included in the EMPr for the project:

5.1 Biodiversity, Ecological and Wetland Assessment

The following are recommended by this study (Appendix D):

- The establishment of a construction yard may only occur in an area that has previously been disturbed. This area must be approved by the Environmental Control Officer (ECO) and must be inspected regularly.
- Quarry site 1 contains two drainage lines within a distance of 150 and 100 meters from the

site. The drainage lines must be excluded from the footprint and a distance of 32 meters kept from these drainage lines.

- Quarry site 3 is situated within Bloemfontein Karroid Shrubland (Gh 8) which must be considered as sensitive with a significant conservation value. The portion of the site as indicated on Map 3 must be excluded from the footprint of the quarry and no activities should be allowed within this area.
- Scattered specimens of the protected trees, *Olea europaea subsp. africana* and *Celtis africana*, occur within the road reserve (Appendix C). Permits must be obtained to remove those specimens that will be affected.
- There is a high likelihood that several mammal species may inhabit the road reserve. These are limited to opportunistic, widespread species that are well adapted to the disturbed conditions. No animal species may be harmed in any way and no hunting or capturing of animals may be permitted. These animals will move out of the road reserve of their own accord.
- In the event of poisonous snakes or other dangerous animals encountered on the site an experienced and certified snake handler or zoologist must remove these animals from the site and re-locate them to a suitable area.
- The two seasonal streams crossed by the road is small and not prominent in the landscape (Table 4, Map 1, 4, 5). They are not mapped by the National Freshwater Ecosystem Priority Areas (NFEPA) due their small size (Map 2). Although they are degraded and transformed they must still be considered as sensitive and important in terms of the ecology of the area.
- The two seasonal streams being crossed by the N1 National Road are in a degraded condition and transformed to a large extent. In spite of this they must be considered as being sensitive areas and no alteration of the flow patterns within these streams must be allowed. The disturbance of the streambanks must be kept to a minimum. The following recommendations should be adhered to, to ensure that disturbance of the streams are kept to a minimum:
 - Where culverts are replaced these should be adequate to allow for sufficient water flow and should not retard water flow.
 - Culvert width should be equal to the stream width, this will minimise channel erosion.
 - The culvert orientation should follow the main channel flow direction of the streams.
 - Disturbance and sedimentation of the stream bed must be prevented as far as possible. The use of attenuation ponds must be investigated where disturbance of the stream bed will take place.
 - Installation of culverts should preferably take place during the dry season (June to September) when zero flows are present within these streams. This will prevent water erosion of the stream bed sediments.
 - During installation of culverts, rehabilitation of the road along the stream and widening of the road at these streams the riparian vegetation (reeds and sedges) should be removed together with the topsoil and replaced afterwards in bare areas. This will speed up recovery of the riparian vegetation.
 - If it is not possible to install culverts during the dry season only half of the stream may be blocked off during culvert installation (applicable only if main channel flow is present).
 - Following completion of the culvert installation the area will be susceptible to erosion. This must be prevented by the use of gabions or other geotextiles.
 - The time period for the installation of culverts should be kept to a minimum.
 - After cessation of construction the culverts should be regularly inspected for erosion and this should be corrected.
 - Wherever the removal of topsoil is necessary the topsoil should be stockpiled separately and

protected against weed infestation and erosion.

- Topsoil should be replaced on top of the soil surface where it has been removed as soon as possible.
- Stormwater flow should be managed to promote free draining borrow pits and quarries.
- The use of hydro-seeding should be investigated for rehabilitation of the road reserve as well as the borrow pit and quarry sites where the establishment of vegetation does not occur within a reasonable time period after cessation of construction.
- After construction the areas cleared of vegetation will be susceptible to infestation by invader weed species. The road reserve should be monitored for the presence of invader weed species (Refer to Appendix D for likely invader species to be removed).
- All overburden and spoils should be replaced in the borrow pits and quarries and the surrounding areas should be levelled to its original state once excavation activities has ceased.
- Areas that have become compacted due to construction activities should be ripped.
- After cessation of activities on the site the area should be rehabilitated to acceptable standards.
- After construction has ceased all construction materials should be removed from the road reserve.

5.2 Heritage Assessment

The following is recommended by this study (Appendix D):

The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural significance found within the area in which it is proposed to upgrade a section of the N1 national road, as well as fourteen borrow pits and quarries that are to be used for these upgrades.

The cultural landscape qualities of the region essentially consist of a rural setup. In this the human occupation is made up of a pre-colonial element consisting of limited Stone Age and Iron Age occupation, as well as a much later colonial (farmer) component. In recent years an urban element developed, expanding as a result of mining development in the region.

The following sites, features and objects of cultural heritage significance have been identified to occur within the study area:

Borrow Pit 2

The remains of a small rectangular house structure were identified. Approximately 35 m to the northwest, behind the house structure three graves were identified. These are only marked with stone cairns and no information about their age or who were buried there could be found. These two features are probably related to each, making it a unit. Any impact would therefore have an impact on the whole.

Both these features seem to occur outside of the proposed borrow pit expansion and it would be possible to avoid them. It is recommended that these sites are left in place and that they are fenced off with danger tape with a buffer of at least 10 metres from the outer most edge of the visible structures for the duration of the activities at the borrow pit. If it is impossible to avoid these sites, they should be documented and excavated by a qualified archaeologist.

Quarry Site 1

The remains of an old farm labourer homestead. It consists of the remains of at least two stone built structures as well as a large refuse dump. It is difficult impossible to date as it does not occur on the older versions of the cadastral maps and the surface finds (glass, metal, etc.) have no diagnostic features. However, the site is viewed to be older than sixty years.

As all these feature seem to occur on the western edge of the borrow pit, it would be possible to avoid them. It is recommended that the site is left in place and that it is fenced off with danger tape with a buffer of at least 10 metres from the outer most edge of the visible structures for the duration of the activities at the borrow pit. If it is impossible to avoid the site, it should be documented and excavated by a qualified archaeologist.

From a heritage point of view we therefore recommend that the proposed development can continue, on condition of acceptance of the above mitigation measures. We request that if archaeological sites or graves are exposed during construction work, it should immediately be reported to a heritage consultant so that an investigation and evaluation of the finds can be made.

6. Advantages and Disadvantages of the Preferred Alternative

(i) Advantages

- The safety to the traveling public will be significantly improved as the traffic will be flowing optimally.
- The road could be upgraded to acceptable horizontal and vertical geometric requirements.
- This option drastically lowers the possibilities of head-on collisions.

(ii) Disadvantages

- Possible protected tree species will require relocation.

7. Sustainable Development

It will be attempted to implement the following:

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

8. Final Conclusion

This is the preferred alternative for the construction project from an economic and practicality perspective and will increase the level of service to acceptable standards for the long term. The

impacts related to the extension of the culverts will be high during construction but is not anticipated to have any long term impact as the flow dynamics will not be altered.

The vegetation that is currently in the road reserve is regarded as degraded and heavily invaded by alien plants. The impact related to the clearing of vegetation in the road reserve, is therefore, considered low. The protected trees in areas to be acquired outside road reserve should be transplanted before construction commences.

From a heritage point of view, it is recommend that the proposed development can continue, on condition of acceptance of the mitigation measures as included in the report. Should an archaeological sites or graves are exposed during construction work, it should immediately be reported to a heritage consultant so that an investigation and evaluation of the finds can be made.

The traffic disruption during the 36 month construction period is considered high but is a short term impact. The construction related impacts are also considered to be short terms and with mitigation measures, to be of low impact.

The primary findings for the upgrade of National Route 1 section 16 between Winburg Interchange (km 78.8) and the intersection to Winburg station (km 89.0) by upgrading the bi-directional single carriageway to a divided dual carriageway with a median by constructing the new carriageway adjacent the N1 towards the west of the existing carriageway would probably result in:

- No negative environmental impacts of high significance with mitigation;
- Positive impacts related to improved traffic flow and reduced traffic accidents;
- Potential positive impacts due to increased economic activity, employment and training and capacity building.

Therefore, alternative 1 (preferred alternative) presents a better option than the alternative 2 for the proposed project in terms of the parameters investigated. The essence of the Basic Assessment process is aimed at ensuring informed decision-making and environmental accountability, and to assist in achieving environmentally sound and sustainable development. No long-term environmental impact should arise with this alternative. We believe that the urgency to complete this project due to safety concerns warrants the request for urgent authorization of this project.

In conclusion, it is believed the information contained in this report and the documentation attached hereto is sufficient to make a decision in respect of the activity applied for. This report covers the full suite of potential environmental issues related to the proposed development, and that sufficient information regarding the identification, assessment and potential mitigation of impacts has been presented to facilitate informed decision making by the appropriate authorities.

Based on the specialist studies undertaken within this BA, both benefits and negative impacts are anticipated as a result of the proposed project. The findings of this BAR have highlighted these impacts and prioritised them in terms of high, medium or low significance. It is therefore recommended that this project be authorized by the authorities with the condition that the mitigation measures as stipulated in the EMP should be adhered to. The authorities need to use this document to aid the decision- making process with respect to the future outcome of this proposal.

An Environmental Management Programme is included detailing the management of the environmental aspects during the design, construction and decommissioning period.

Alternative A2

Alternative B entails the construction of a new section as a north bound lane to create an undivided four lane highway without a median.

The possible environmental impacts identified and construction related impacts will be similar to that of Alternative A.

1. Advantages and Disadvantages of this Alternative

(i) Advantages

- May upgrade road to acceptable horizontal and vertical geometric requirements.

(ii) Disadvantages

- The possibility of had head-on collisions will not be lowered. This alternative is, therefore, less safe for the traveling public that alternative A1.
- Could be impractical from a geometric perspective due to the location of the bridge piers of the road-over-road bridges at the interchanges. The geometry of such an option will increase construction cost as well as create abortive areas on the existing roadway, which was excluded from the economic model, and will therefore become less viable should it be included in some way.
- Possible protected tree species will require relocation.

From information received from the consulting engineers and potential environmental impacts that were identified during the Basic Assessment process that are associated with this alternative, the construction of this alternative is, therefore, not recommended.

Alternative A3

None

No-go alternative (compulsory)

Should the road not be upgraded, the traffic on the N1 could experience increasingly unsafe driving conditions. The vertical and horizontal alignments and intersections of the road need to be upgraded to ensure the safety of the traveling public. This will also accommodate the predicted increase in traffic volume and avoid high driver frustration.

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

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 x	NO
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BASIC ASSESSMENT REPORT

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).

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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.

- | |
|--|
| <ul style="list-style-type: none">• The mitigation measures included in the EMPr should be adhered to;• A designated Environmental Officer should be appointed during the construction period. The DEO will be responsible for the monitoring, reviewing and verifying of compliance with the EMPr by the applicant.• Regular environmental audits should be undertaken, both internal and external by an independent auditor.• During the construction phase, the premises and the works site must be maintained by the contractor in a reasonably neat and orderly condition and free from accumulation of waste materials and rubbish during the entire construction period. |
|--|

Is an EMPr attached?

YES x	NO
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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.

Preparation of Basic Assessment Report

This Basic Assessment Report was prepared by Dr Jenine Bothma of Chameleon Environmental Consultants:

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Dr Bothma is certified as an Environmental Assessment Practitioner with the Interim Certification Board for Environmental Assessment Practitioners of South Africa.

Assumptions and Limitations

- a. The following assumptions have been made for the purposes of this report:
 - All information received from sources contributing to this project is correct;
 - That the SANRAL would consider the recommendations derived from this study, and
 - The Department of Environmental Affairs would be the decision making authority with regard to this application.

- b. Limitations
 - None.

- c. Knowledge Gaps
 - None

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.

Dr Josephine Bothma _____
NAME OF EAP



SIGNATURE OF EAP

2014-10-27 _____
DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps and co-ordinates taken every 250 meters

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