Draft Basic Assessment

REHABILITATION OF THE N2 SECTION 18 FROM TETYANA (KM24.00) TO SITEBE KOMKULU (KM41.00)

DEA Reference: 14/12/16/3/3/1/1272

Prepared for:

Prepared by:

March 2015

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 August 2014**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority.

3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.

4. Where applicable **tick** the boxes that are applicable in the report.

5. An incomplete report may be returned to the applicant for revision.

6. The use of “not applicable” in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.

7. This report must be handed in at offices of the relevant competent authority as determined by each authority.

8. No faxed or e-mailed reports will be accepted.

9. The signature of the EAP on the report must be an original signature.

10. The report must be compiled by an independent environmental assessment practitioner.

11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.

12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.

13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.

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

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

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

**INTRODUCTION**

The South African National Roads Agency Ltd. (SANRAL) is proposing the construction of various safety improvements on Section 18 of the N2 National Route from Tetyana (km24.00) to Sitebe Komkulu (km41.00) in the Eastern Cape Province (Figure 1.1). GIBB Engineering, the project managers, contracted EOH Coastal & Environmental Services (CES) as the Environmental Assessment Practitioner (EAP) to undertake the Environmental Impact Assessment.

![Figure 1.1. Location of the proposed upgrade showing the affected road section between Tetyana and Sitebe Komkulu in the Eastern Cape, the red line indicates the proposed upgrade.](image)

The proposed development will consist of the construction of various safety improvements on the N2. These improvements include:

- Construction of temporary deviations
- Reconstruction of the existing road, including widening and re-alignment both within and outside of the current road reserve where necessary.
- Installation of new road drainage.
- New major drainage structures (bridges/major culverts)
- Safety improvements to intersections where necessary
- Resurfacing of Mbashe bridge and replacement of joints
- Widening of the Candu Bridge on the western side.

In addition to the EIA process, water use licence applications (WULAs) will be submitted in accordance with the National Water Act (Act No. 36 of 1998) regulated by the Department of Water and Sanitation (DWS) for new major
drainage structures.

A mining licence application will also be submitted for two quarry sites in accordance with the regulations pertaining to the Minerals and Petroleum Resources Development Act (Act No. 28 of 2002) regulated by the Department of Mineral Resources.

ACTIVITIES ASSOCIATED WITH THE PROPOSED PROJECT

It is important to note that there is an existing Environmental Authorisation (EA) for this section of road (DEA Reference: 12112/20/701 issued on the 19th of April 2010). The new assessment (this report) will not re-assess any activities identified by the existing EA but rather assess the impacts associated with new activities identified taking place outside the existing N2 road reserve. Thus, the old EA will address impacts inside the N2 road reserve while the new EIA will assess any new impacts identified outside the N2 road reserve. A cumulative assessment of activities occurring both inside and outside of the N2 road reserve will also be conducted.

The following activities are associated with the safety improvements on Section 18 on the N2 National Route from Tetyana to Sitebe Komkulu:

Road deviations

Five road deviations are proposed for the N2 road upgrade section (Table 1.1). In this Assessment all five deviations are called Alternative 1 (red) while the original N2 road layout is considered as Alternative 2 (yellow).

Table 1.1. Deviations proposed (in red) for the N2 road upgrade section.

<table>
<thead>
<tr>
<th>Deviation #</th>
<th>Layout</th>
<th>Location: (GPS Coordinates)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><img src="image.png" alt="Diagram" /></td>
<td>31° 55.717'S 28° 26.231'E (@KM27.4)</td>
</tr>
</tbody>
</table>
|   | Image 120x567 to 462x769 | 31° 54.994'S  
28° 27.460'E  
(@KM29.6) |
|---|------------------------|----------------------------------|
| 2 | ![Image](image2.png)   | 31° 54.503'S  
28° 27.839'E  
(@KM31.9) |
| 3 | ![Image](image3.png)   | 31° 52.123'S  
28° 30.330'E  
(@KM38.4) |
| 4 | ![Image](image4.png)   |                                                  |
Bridge/Large culvert upgrades:

Water Use Licences are being applied for from the DWS for the following bridge/large culvert upgrades. Figure 1.2 indicates the position of the perennial and non-perennial river crossings that will require a WULA. There are 19 river crossings.

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Figure 1.2. Map showing the proposed activity locations from Tetyana to Sitebe Komkulu, with the proposed road upgrade (red line) and tributary crossings indicated.
Table 1.2. Details of each affected water crossing.

<table>
<thead>
<tr>
<th>Water crossing 1: Candu River</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GPS Co-ordinates:</strong> 31°55'58.12&quot;S; 28°25'57.79&quot;E</td>
</tr>
<tr>
<td><strong>Distance from start:</strong> 5.48km</td>
</tr>
<tr>
<td><strong>Aerial view:</strong></td>
</tr>
</tbody>
</table>

![Aerial view of Candu River crossing](image1)

**Upstream view:**

![Upstream view of Candu River crossing](image2)

**Downstream view:**

![Downstream view of Candu River crossing](image3)
### Water crossing 2: Candu Tributary

<table>
<thead>
<tr>
<th>GPS Co-ordinates:</th>
<th>31°55'46.17&quot;S; 28°26'1.18&quot;E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance from start:</td>
<td>5.85km</td>
</tr>
</tbody>
</table>

**Aerial view:**

![Aerial view](image)

**Upstream view:**

![Upstream view](image)

**Downstream view:**

![Downstream view](image)
Water crossing 3: Candu Tributary 2

GPS Co-ordinates: 31°55'39.51"S; 28°26'20.22"E
Distance from start: 6.4km
Aerial view:

Upstream view:

Downstream view:
### Water crossing 4: Mbhashe River

<table>
<thead>
<tr>
<th>GPS Co-ordinates: 31°55'11.41&quot;S; 28°26'53.92&quot;E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance from start: 7.8km</td>
</tr>
<tr>
<td>Aerial view:</td>
</tr>
</tbody>
</table>

![Aerial view of Mbhashe River](image)

**Upstream view:**

![Upstream view of Mbhashe River](image)

**Downstream view:**

![Downstream view of Mbhashe River](image)
Water crossing 5: Mbhashe Tributary

GPS Co-ordinates: 31°54'59.01"S; 28°27'7.89"E
Distance from start: 8.3km
Aerial view:

Upstream view:  

Downstream view:
Water crossing 6: Mbhashe Tributary 2

GPS Co-ordinates: 31°54'58.57"S; 28°27'21.43"E
Distance from start: 8.7km
Aerial view:

Upstream view:

Downstream view:
<table>
<thead>
<tr>
<th>Water crossing 7: Mbhashe Tributary 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GPS Co-ordinates:</strong> 31°54'53.04&quot;S; 28°27'54.29&quot;E</td>
</tr>
<tr>
<td><strong>Distance from start:</strong> 9.6km</td>
</tr>
<tr>
<td><strong>Aerial view:</strong></td>
</tr>
</tbody>
</table>

Upstream view: ![Upstream view](image)

Downstream view: ![Downstream view](image)
### Water crossing 8: Mbhashe Tributary 4

<table>
<thead>
<tr>
<th>GPS Co-ordinates:</th>
<th>31°54'33.94&quot;S; 28°27'50.75&quot;E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance from start:</td>
<td>10.5km</td>
</tr>
</tbody>
</table>

**Aerial view:**

**Upstream view:**

**Downstream view:**
### Water crossing 9: Mbhashe Tributary 5

**GPS Co-ordinates:** 31°54'25.49"S; 28°27'51.40"E  
**Distance from start:** 10.6km  
**Aerial view:**

[Google Earth Image]

**Upstream view:**

[Upstream Image]

**Downstream view:**

[Downstream Image]
### Water crossing 10: Kwelerana Tributary

**GPS Co-ordinates:** 31°54'5.13"S; 28°28'5.69"E  
**Distance from start:** 11.3km  
**Aerial view:**

![Aerial view of water crossing](image1)

#### Upstream view:

![Upstream view](image2)

#### Downstream view:

![Downstream view](image3)
Water crossing 11: Kwelerana Tributary 2

GPS Co-ordinates: 31°53'45.86"S; 28°28'9.25"E

Distance from start: 11.9km

Aerial view:

Upstream view:  

Downstream view:
Water crossing 12: Mtentu Tributary

GPS Co-ordinates: 31°52'10.34"S; 28°30'17.89"E

Distance from start: 16.8km

Aerial view:

Upstream view:  
Downstream view:
Water crossing 13: Mtentu Tributary 2

<table>
<thead>
<tr>
<th>GPS Co-ordinates:</th>
<th>31°52'8.73&quot;S; 28°30'19.29&quot;E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance from start:</td>
<td>16.87km</td>
</tr>
<tr>
<td>Aerial photo:</td>
<td><img src="image_url" alt="Aerial photo" /></td>
</tr>
</tbody>
</table>

Upstream view: ![Upstream view](image_url)

Downstream view: ![Downstream view](image_url)
<table>
<thead>
<tr>
<th>Water crossing 14: Mtentu Tributary 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPS Co-ordinates: 31°52'3.02&quot;S; 28°30'31.56&quot;E</td>
</tr>
<tr>
<td>Distance from start: 17.3km</td>
</tr>
<tr>
<td>Aerial view:</td>
</tr>
</tbody>
</table>

Upstream view: ![Upstream view](image1)

Downstream view: ![Downstream view](image2)
Water crossing 15: Mtentu Tributary 4

GPS Co-ordinates: 31°51'53.91"S; 28°30'51.43"E
Distance from start: 17.8km
Aerial view:

Upstream view:  
Downstream view:
Water crossing 16: Mtetu Tributary 5

GPS Co-ordinates: 31°51'50.41"S; 28°30'51.93"E
Distance from start: 18km
Aerial photo:

Upstream view:

Downstream view:
Water crossing 17: Mtentu Tributary 6

GPS Co-ordinates: 31°51'33.62"S; 28°30'54.52"E
Distance from start: 18.5km
Aerial view:

Upstream view:

Downstream view:
## Water crossing 18: Mtentu Tributary 7

**GPS Co-ordinates:** 31°51’13.77”S; 28°30’58.42”E  
**Distance from start:** 19.2km  
**Aerial view:**

![Aerial view of water crossing](image)

### Upstream view:
![Upstream view](image)

### Downstream view:
![Downstream view](image)
**Water crossing 19: Mtenu Tributary 8**

**GPS Co-ordinates:** 31°51'12.56"S; 28°30'58.58"E

**Distance from start:** 19.25km

**Aerial view:**

![Aerial view of water crossing](image)

**Upstream view:**

![Upstream view](image)

**Downstream view:**

![Downstream view](image)
Mining licencing:

Two sites have been identified as potential quarry sites (Figure 1.3 and Table 1.3). An application for a mining right will be submitted to the Department of Mineral Resources (DMR) for both these sites. Both sites are existing mining sites that will be expanded.

![Figure 1.3. Location of the two mining sites](image)

<table>
<thead>
<tr>
<th>Location</th>
<th>Aerial image</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quarry 1:</td>
<td><img src="image" alt="Aerial image of Quarry 1" /></td>
</tr>
<tr>
<td>S31° 57.559’ E28° 20.377’</td>
<td></td>
</tr>
</tbody>
</table>

![Table 1.3. Location of the two mining quarry sites within the N2 Section 18 road upgrade section](image)
BIOPHYSICAL ENVIRONMENT

Climate

The Mthatha area normally receives about 556mm of rain per year, with most rainfall occurring during summer. It receives the lowest rainfall in June (6mm) and highest in March (87mm). The average midday temperature ranges from 19.4°C in July to 25.8°C in February.

Topography

Elevation decreases from 729 meters above sea level (masl) in the southwest (Tetyana) to 454 masl towards the northeast and then increases up to 789 masl (Sitebe Komkulu). The topography can be described as gently undulating terrain along ridges (Fig 1.4).

Geology and Soils

The study area falls within the Main Karoo Basin. This basin was infilled with up to 12 km of sedimentary strata and capped by a 1.4 km thick unit of basaltic lava. Today the remnants of the lava layer are called the Drakensberg Mountains.

More locally, the rocks consist of a sandstone-rich layer called the Katberg Formation, although there are some mudstones present, increasing slightly towards the north. Intra-formational mud-pellet conglomerates are common with red coloured mudstone units and predominant arenaceous sandstones (Fig 1.5). Sandstone layers are intruded by dolerite dykes and sills.
The main soil type are soils with minimal development. These are very shallow soils overlying either rock, diverse hard soils or unconsolidated materials. These soils usually have a high potential for erosion, especially when combined with moderate to steep slopes.

A small section of the N2 around the Mbhashe River occurs on soils with a marked clay accumulation. These soils are considered to occur from recent sedimentation arising as fluvisols from sediments carried in the river.

**Vegetation**

National Spatial Biodiversity Assessment (SANBI)

According to SANBI (Mucina and Rutherford, 2006) the vegetation types found in the area include Eastern Cape Thornveld, Eastern Valley Bushveld and Mthatha Moist Grassland (Figure 1.6).