



FINAL BASIC ASSESSMENT REPORT

THE PROPOSED CONSTRUCTION OF THE SIDWADENI RIVER BRIDGE AND ACCESS ROAD NEAR MTHATHA

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DOCUMENT CONTROL

Final Basic Assessment Report The Proposed Construction of the Sidwadeni River Bridge and Access Road near Mthatha

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REVISION AND AMENDMENTS

DATE	No.	DESCRIPTION OF REVISION OR AMENDMENT
2013-04-30	0	Draft Basic Assessment Report for the Proposed Construction of the Sidwadeni River Bridge and Access Road
2013-07-04	1	Final Basic Assessment Report for the Proposed Construction of the Sidwadeni River Bridge and Access Road
2013-10-04	2	Final Basic Assessment Report for the Proposed Construction of the Sidwadeni River Bridge and Access Road

SUMMARY DATA

Project: Construction of the Sidwadeni River Bridge and Access Road near Mthatha

Location: Mthatha, Eastern Cape Province

Client: South African National Road Agency Limited

Consultant: Environmental Impact Management Services (Pty) Ltd (EIMS).

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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.

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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 NO
 If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

1. PROJECT DESCRIPTION

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

The project is located within the King Sabata Dalindyebo Local Municipality in the Eastern Cape. This project will involve the construction of:

1. An access road (Bernard Schultz Avenue) directly off the R61 and bridge across the Sidwadeni River (situated 0.2 km from Mthatha):

The proposed new access road and bridge is required to provide all weather access across the Sidwadeni River and thereby ensure pedestrian and vehicular safety.

There is an existing access road which provides access to the R61 from the residential areas south of the R61 (located approximately 150 m upstream of the new proposed bridge site). However, this road crosses the Sidwadeni River using a low level bridge that is constantly flooded. As a result, the low level bridge has become an informal "car wash" for mini-bus taxi's. **The existing access road will also not be suitable for safety reasons due to the new alignment of the R61 as this will create an intersection with the new R61 alignment at an unsuitable angle.**

The road will be approximately 12 metres wide and 175 metres long and will join with the existing Bernard Schultz Drive. The road will be constructed to blacktop standard.



Figure 1: Proposed New R61 Access Road (Bernard Schultz Avenue) (Goba 2013).

2. A new access road to the landowner's residence from the new R61 access road (Remainder Erf 861 Access Road):

The landowner's residence also has an existing access road directly off the R61. However, access to this property will be unsafe considering the proposed widening of the R61 and therefore, needs to be closed. As such, a new access road joining the landowner's residence and the above mentioned new R61 Access Road is proposed.

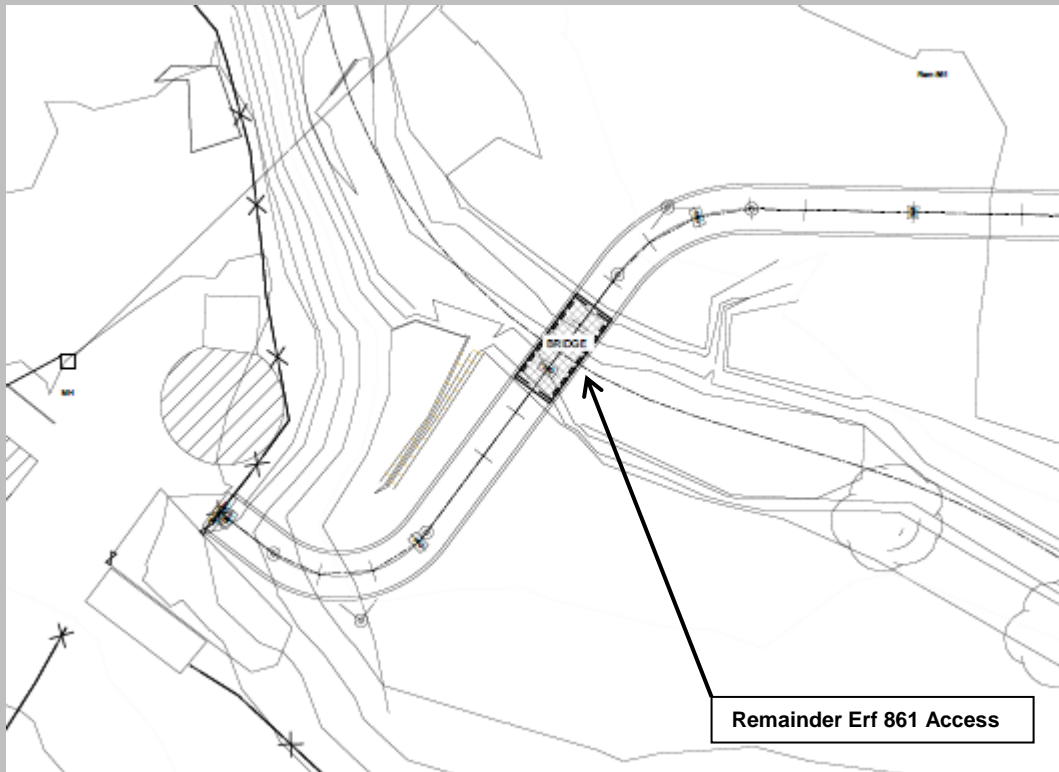


Figure 2: Location of the Remainder Erf 861 Access Road (Goba 2013).

Please refer to Appendix A for more detailed locality maps showing the proposed access roads, location of the construction camp, etc.

It is proposed that the existing access roads and bridge will be closed off from the R61 by guard rail, with the existing road and structures remaining. Construction activities will include the following:

- Clearing the road reserve;
- Clearing river banks to rock level;
- Casting reinforced concrete foundations and abutments;
- Pre-casting of bridge beams and parapets (off-site);
- Construction of approach fills;
- Placing of bridge beams;
- Casting of bridge deck; and
- Placing of parapets.

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
GNR 544, Listing Notice 1, Activity 11: "The construction of: (i) canals; (ii) channels; (iii) bridges; (iv) dams; (v) weirs; (vi) bulk storm	The project will involve the construction of a low-level bridge across the Sidwadeni River. The bridge will be 15.3m wide and have a total length

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<p>water outlet structures; (vii) marinas; (viii) jetties exceeding 50 square metres in size; (ix) slipways exceeding 50 square metres in size; (x) buildings exceeding 50 square metres in size; or (xi) infrastructure or structures covering 50 square metres or more 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>of 25.6m.</p>
<p>GNR 544, Listing Notice 1, Activity 18: “The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil sand shells shell grit, pebbles or rock from (i) a watercourse; (ii) the sea; (iii) the seashore; (iv) the littoral active zone, an estuary or a distance of 100 metres inland of the high water mark of the sea or an estuary, whichever distance is the greater but excluding where such infilling, depositing, dredging, excavation, removal or moving (i) is for maintenance purposes undertaken in accordance with a management plan agreed to by the relevant environmental authority; or (ii) occurs behind the development setback line.”</p>	<p>The construction of the bridge will require the infilling/deposition/excavation of material from the Sidwadeni river.</p>
<p>GNR 546, Listing Notice 3, Activity 12: “The clearance of an area of 300 square meters or more of vegetation where 75% or more of the vegetation cover constitutes indigenous vegetation. (a) Within a critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; (b) Within critical biodiversity areas identified in bioregional plans; (c) Within the littoral active zone or 100 meters inland from high water make of the sea or an estuary, whichever distance is greater, excluding where such removal will occur behind the development setback line on erven in urban areas.”</p>	<p>The construction of the Sidwadeni river bridge and access road will require vegetation to be cleared.</p>

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

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
Bernard Schultz Avenue Alignment	31°35'16.98"S	28°47'55.08"E
Remainder Erf 861 Access Road	31°35'20.82"S	28°47'57.78"E
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Upgrade of existing Access Road	31°35'17.34"S	28°47'50.99"E
Remainder Erf 861 Access Road	31°35'20.82"S	28°47'57.78"E

Please note that the access road to the Landowners house would still be required due to the fact that her access from the R61 will no longer be possible due the new alignment of the R61.

In the case of linear activities:

Alternative:	Latitude (S):	Longitude (E):
Bernard Schultz Avenue Alignment (preferred)		
• Starting point of the activity	31° 35'16.98"S	28° 47'56.40"E

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• Middle/Additional point of the activity	31° 35'16.98"S	28° 47'55.08"E
• End point of the activity	31° 35'21.72"S	28° 47'53.64"E

Remainder Erf 861 Access Road (preferred)

• Starting point of the activity	31° 35'20.34"S	28° 47'54.72"E
• Middle/Additional point of the activity	31° 35'20.82"S	28° 47'57.78"E
• End point of the activity	31° 35'19.98"S	28° 47'59.94"E

Alternative S2 (if any)

Upgrade of Existing Access Road

• Starting point of the activity	31° 35'16.35"S	28° 47'50.06"E
• Middle/Additional point of the activity	31° 35'17.34"S	28° 47'50.99"E
• Middle/Additional point of the activity	31° 35'19.97"S	28° 47'52.02"E
• End point of the activity	31° 35'22.34"S	28° 47'53.27"E

Remainder Erf 861 Access Road (preferred)

• Starting point of the activity	31° 35'20.34"S	28° 47'54.72"E
• Middle/Additional point of the activity	31° 35'20.82"S	28° 47'57.78"E
• End point of the activity	31° 35'19.98"S	28° 47'59.94"E

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.

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

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

c) Technology alternatives

Alternative 1 (preferred alternative)		
Alternative 2		
Alternative 3		

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

Bridge Design Alternatives

For the Sidwadeni River Bridge, Hatch Goba (2013) reports that three (3) options were investigated that satisfied the hydraulic requirements and other site constraints:

Option A: Involved a one span structure with a clear opening of 25 m. The effective span on the skew would be 29.5 m with a total deck length of 30.8m. This would require a deck with a depth of about 1.5m. This depth together with the required width indicates that an appropriate deck type would be a voided slab. The slab would be supported on cantilever wall type abutments founded on bedrock with wingwalls splayed at 30 degrees.

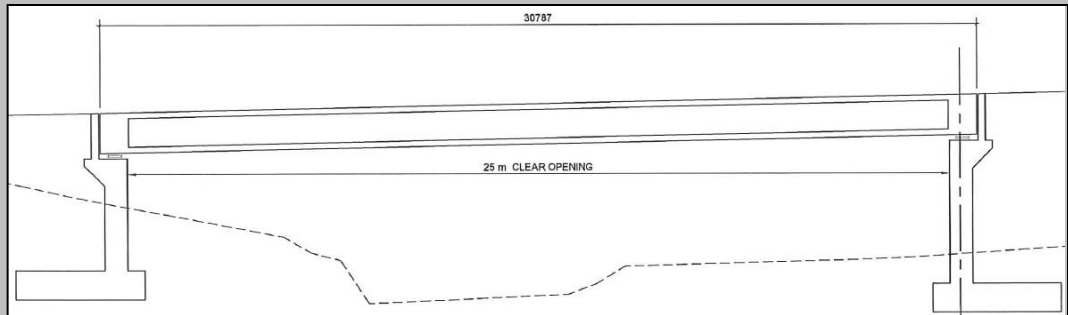


Figure 3: Bridge Design Option A

Alternative 2 (preferred option)

Option B: Involved a two span structure with a two openings of 10 m. One of the openings will be centred over the main channel with the other opening on the southern side will receive flow only for floods causing the main channel to be overtopped. The effective spans on the skew would be 12.2 m with a total deck length of 25.6 m. This would require a solid slab deck with a depth of about 0.63m. The slab would be supported on a wall type pier and cantilever wall type abutments founded on bedrock with wingwalls splayed at 30 degrees.

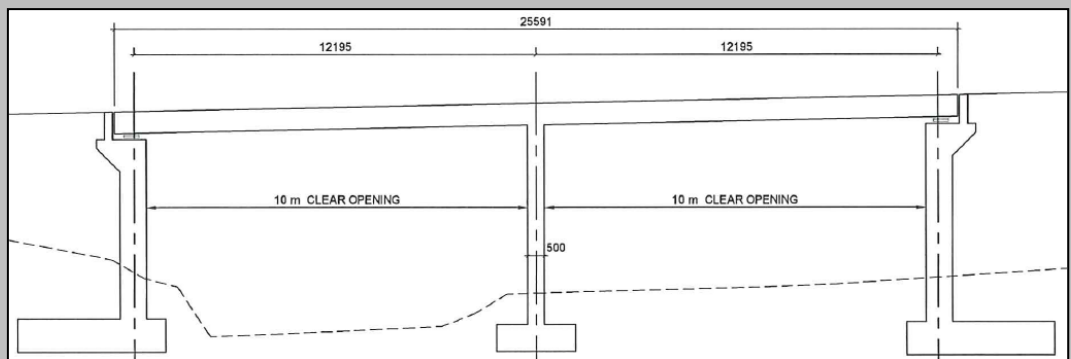


Figure 4: Bridge Design Option B

Alternative 3

Option C: Involved a three span structure with two side openings of 7 m and a central opening of 9m. The side openings would be positioned on either side of the main channel to take the flow when the main channel is overtopped. The effective spans on the skew would be 8.5 m, 10.8 m and 8.5 m with a total deck length of 29.6 m. This would require a solid slab deck with a depth of about 0.55 m. The slab would be supported on wall type piers and cantilever wall type abutments founded on bedrock

with wingwalls splayed at 30 degrees.

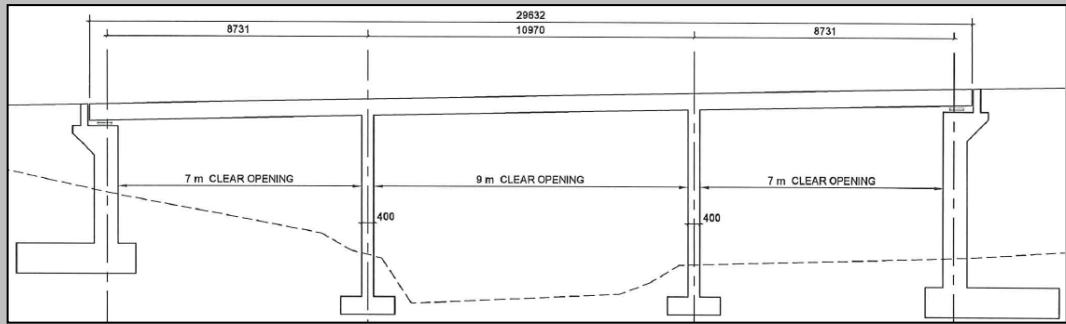


Figure 5: Bridge Design Option C

Goba (2013) reported that the one span structure (Option A above) was not considered feasible due to the following: (1) It is the most expensive option; (2) It will have a visually heavy appearance due to the thick deck; and (3) It will have a relatively low clearance under the soffit.

The three span structure (Option C above) was reported to be is less expensive and had a better visual appearance due to the slender deck. Furthermore, the skew of the bridge together with the short spans and wide piers may result in a closed appearance. This scheme was considered to be the most structurally cost-effective, with the lowest cost per square metre. However, the northern span was not hydraulically efficient due to the steep bank on the northern side of the river and as a consequence not considered feasible.

The two span structure (Option B above) was considered the most feasible option due to the fact that that it was: (1) The to be the cheapest to construct; (2) It will have a low visual impact with a relatively open appearance; (3) The two span option will work well hydraulically with the main channel being accommodated by the northern span and the overland flow on the floodplain being accommodated by the southern span.

As such, due to the visually less intrusive and superior hydraulic capacity of the two span structure (Option B), this structure will be assessed further in this assessment.

Makaluza River Bridge Design (preferred alternative)

Option A: The Makaluza access road is a low order road, and therefore designing the bridge to allow for a 1:5 year flood (see crossing A-B below) would require the approach fills to be some 2 meters high, which is inappropriate for such a low order road. Therefore it was proposed that the bridge be constructed as a steel frame with a concrete slab (see Figure 7) but at the lower level shown in Figure 6 below (C-D).

This will have a lesser impact on the surrounding river banks and will not cause adverse upstream effects.

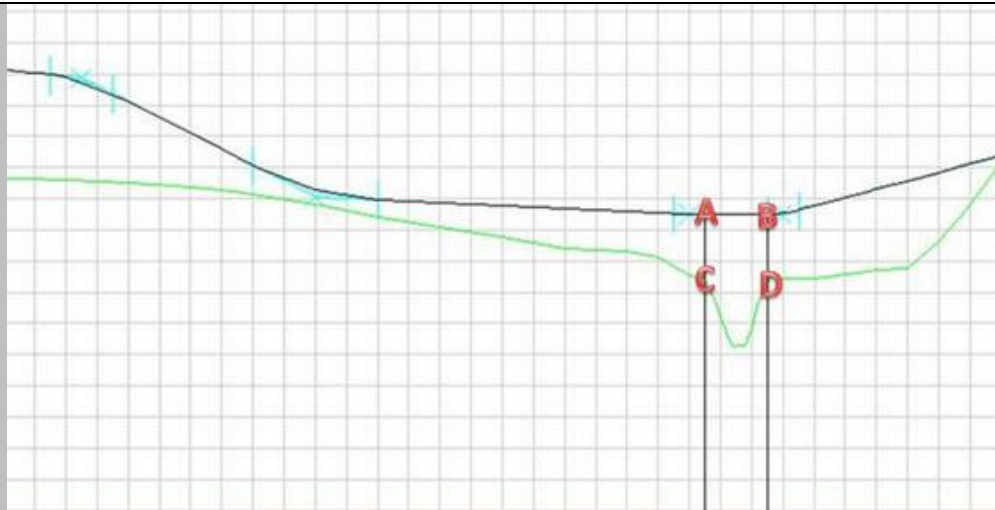


Figure 6: Makaluza River Bridge crossings

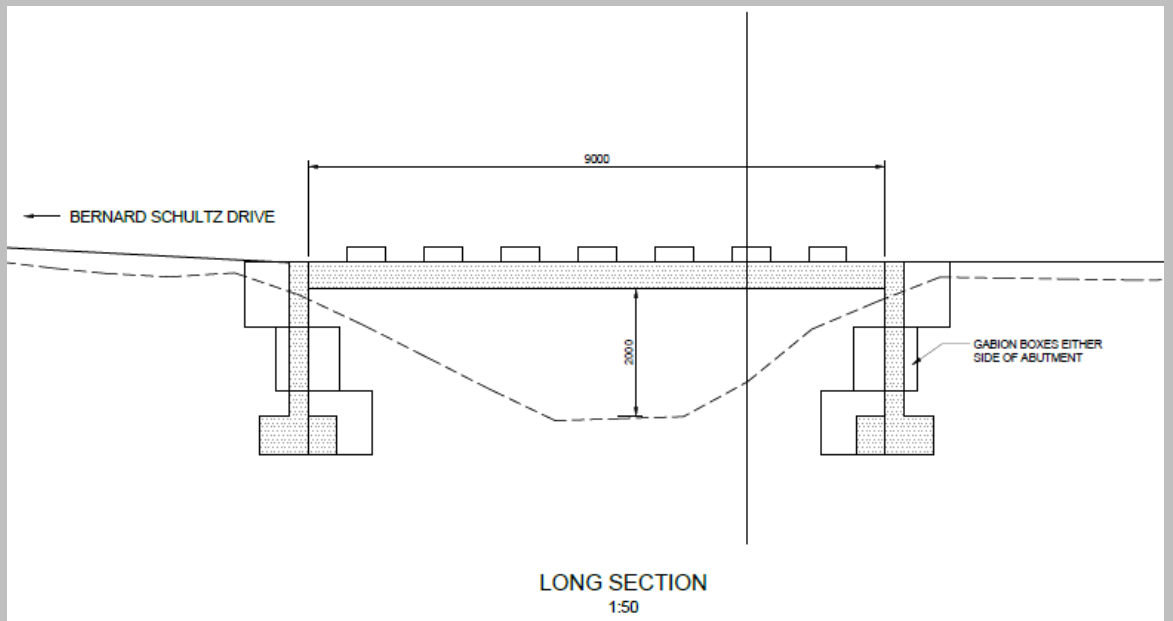


Figure 7: Bridge Design Option A

e) **No-go alternative**

If the no go alternative is considered, this will involve the continued use of the existing access road, but with no upgrade of the road and the continued use of the low level bridge.

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

3. PHYSICAL SIZE OF THE ACTIVITY

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

Alternative:

- Alternative A1¹ (preferred activity alternative)
- Alternative A2 (if any)
- Alternative A3 (if any)

Size of the activity:

	m ²
	m ²
	m ²

or, for linear activities:

Alternative:

- Bernard Schultz Avenue Alignment**
Alternative A1 (preferred activity alternative)
- Remainder Erf 861 Access Road**
Alternative A1 (preferred activity alternative)
- Upgrade Existing Access Road**
Alternative A2 (preferred activity alternative)

Length of the activity:

±175 m
±170 m
±220 m

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

Alternative:

- Bernard Schultz Avenue Alignment**
Alternative A1 (preferred activity alternative)
- Remainder Erf 861 Access Road**
Alternative A1 (preferred activity alternative)
- Upgrade Existing Access Road**
Alternative A2
- Remainder Erf 861 Access Road**
Alternative A2

Size of the site/servitude:

±6 300 m ²
±3 400 m ²
±8 000 m ²
±3 400 m ²

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	NO
	m

Describe the type of access road planned:

Access to development site already exists.

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

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

5. LOCALITY MAP

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

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

6. LAYOUT/ROUTE PLAN

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

The site or route plans must indicate the following:

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

7. SENSITIVITY MAP

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

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

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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?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	Please explain
A servitude will be registered and the landowner compensated accordingly.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	Please explain
The R61 is a provincial road under the control and responsibility of SANRAL. The access road and associated bridge is required to provide a safe access to the R61 at an appropriate angle and alignment.			
(b) Urban edge / Edge of Built environment for the area	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	Please explain
The activity is within the urban edge of Mthatha			

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<p>(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?).</p>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> X </div>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> NO </div>	<p>Please explain</p>
<p>The King Sabata Dalinyebo Local Municipality SDF mentions: “In addition, the R61 which has also been taken over by the National Road Authority (SANRAL) traverses the town in an east/west direction. The condition of both these national roads within the municipal area is very bad and requires urgent attention. The other link roads that serve to connect the town also require urgent maintenance attention. Currently an attempt is being undertaken by the municipality to repair some of these distributors.”</p> <p>It further states that “A lot of gravel roads have been built in order to meet the infrastructure requirements of the rural population. A lot of these roads become severely eroded with the first rainy season due to the poor construction and finishing.”</p> <p>Since this development will lead to the upgrade of one of these roads, it is anticipated to be in line with the local planning context.</p>			
<p>(d) Approved Structure Plan of the Municipality</p>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> X </div>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> NO </div>	<p>Please explain</p>
<p>The King Sabata Dalinyebo Local Municipality SDF mentions: “In addition, the R61 which has also been taken over by the National Road Authority (SANRAL) traverses the town in an east/west direction. The condition of both these national roads within the municipal area is very bad and requires urgent attention. The other link roads that serve to connect the town also require urgent maintenance attention. Currently an attempt is being undertaken by the municipality to repair some of these distributors.”</p> <p>It further states that “A lot of gravel roads have been built in order to meet the infrastructure requirements of the rural population. A lot of these roads become severely eroded with the first rainy season due to the poor construction and finishing.”</p> <p>Since this development will lead to the upgrade of one of these roads, it is anticipated to be in line with the local planning context.</p>			
<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>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> YES </div>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> X </div>	<p>Please explain</p>
<p>No EMF has been compiled for the area.</p>			
<p>(f) Any other Plans (e.g. Guide Plan)</p>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> YES </div>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> NO </div>	<p>Please explain</p>
<p style="text-align: center;">[Hatched area]</p>			

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<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>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> X </div>	NO	Please explain
<p>The King Sabata Dalinyebo Local Municipality SDF mentions: "In addition, the R61 which has also been taken over by the National Road Authority (SANRAL) traverses the town in an east/west direction. The condition of both these national roads within the municipal area is very bad and requires urgent attention. The other link roads that serve to connect the town also require urgent maintenance attention. Currently an attempt is being undertaken by the municipality to repair some of these distributors."</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>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> X </div>	NO	Please explain
<p>The proposed access road will improve vehicular and pedestrian safety.</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>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> X </div>	NO	Please explain
<p>The proposed development will not require services from the local municipality.</p>			
<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>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> X </div>	NO	Please explain
<p>The R61 is a provincial road under the control and responsibility of SANRAL. The access road and associated bridge is required to provide a safe access to the R61 at an appropriate angle and alignment.</p>			
<p>7. Is this project part of a national programme to address an issue of national concern or importance?</p>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> X </div>	NO	Please explain
<p>As a result of the proposed upgrade of R61, the alignment of the access roads will need to be changed in order to allow for safer access onto the R61.</p>			

BASIC ASSESSMENT REPORT

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.)	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	Please explain
Although an existing access road is present, the new alignment of the R61 requires that the access road be re-aligned to facilitate appropriate and safe access to the R61 from the neighbouring communities.			
9. Is the development the best practicable environmental option for this land/site?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	Please explain
The bridge designs for this access road take into account the likely flood events and provides for safe and adequate passage in the event of flood events. Flow of water will also not be impeded significantly due to bridge design. A General Authorisation has been issued by the DWA for this development.			
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	Please explain
The negative impacts will be restricted to the construction phase and will be mitigated in line with the EMPR for this development. The benefits include improved road infrastructure, and safer and appropriate crossing of the Sidwadeni River.			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	Please explain
This access road is in line with the SANRAL mandate to ensure provision of suitable and safe access to the provincial road R61.			
12. Will any person's rights be negatively affected by the proposed activity/ies?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	Please explain
The landowner is currently negotiating suitable compensation for the affected portion of her land and has consented to the development proceeding on the land.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	Please explain
The activity will fall within the urban edge of Mthatha.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	Please explain
The project may contribute to infrastructure and road maintenance programmes within the municipality (SIP 6: Integrated municipal infrastructure project).			
15. What will the benefits be to society in general and to the local communities?	Please explain		
The development will provide safe access to and from the communities located in close proximity to the development site. <u>The existing Sidwadeni river bridge and access road is unsafe as it is regularly flooded and will not align well with the future planned upgrade of the R61 to a dual carriage way.</u> Additionally, there will be employment opportunities created for local residents.			

BASIC ASSESSMENT REPORT

16. Any other need and desirability considerations related to the proposed activity?	Please explain
Local residents will be provided with adequate road infrastructure for vehicles and safer access to the adjacent communities (including New Brighton).	
17. How does the project fit into the National Development Plan for 2030?	Please explain
The Sidwadeni river bridge and access road aligns with the National Development Plan in that it will provide improved infrastructure to the local community through safer access, as the existing access road and bridge is regularly flooded and does not align well with the planned upgrade of the R61 to a dual carriage way.	
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 general objectives have been taken into account in that: a) The Basic Assessment Report has identified and evaluated potential impacts from the proposed development (see Section D) b) Public Participation has been conducted according to the regulations (see the Issues and Responses Report in Appendix E). c) The impacts of the development have been given adequate consideration by both the Environmental Assessment Practitioner (EAP) and the Ecological and Heritage Specialists.	
19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.	
This development does comply with the principles of environmental management in that: a) It places people and their needs at the forefront by accessing the best possible alternative for the local community (safer access) and by providing the public with an opportunity to comment and raise concerns, if any, through the public participation process b) Assessing different alternatives helps ensure that the development takes into consideration the best outcome in terms of social, environmental, and economic aspects. c) Disturbance to the receiving environment (ecological and social) and potential pollution from the development has been taken into consideration through thorough investigations by an Ecological and Heritage Specialist and by the EAP. Mitigation measures for all impacts identified have been included in an Environmental Management Plan which will be used to monitor the development.	

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
NEMA (Act 107 of 1998), GNR 544 Listing Notice 1 Activity 11	The project will involve the construction of a low-level bridge across the Sidwadeni River. The bridge will be 15.3m wide and have a total length of 25.6m.	Department of Environmental Affairs	18 June 2010

BASIC ASSESSMENT REPORT

NEMA (Act 107 of 1998), GNR 544 Listing Notice 1 Activity 18	The construction of the bridge will require the infilling/deposition/excavation of material from the Sidwadeni river.	Department of Environmental Affairs	18 June 2010
NEMA (Act 107 of 1998), GNR 546 Listing Notice 3 Activity 12	The construction of the Sidwadeni river bridge and access road will require vegetation to be cleared.	Department of Environmental Affairs	18 June 2010

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

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

<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
± 20 m ³	

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

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

The solid waste produced during the construction phase will be kept to a minimum. This waste will be disposed of at a suitably registered waste disposal site. It is important to note that construction solid waste will be composed of standard building rubble.

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

Construction solid waste will be disposed of at a registered waste disposal site.

Will the activity produce solid waste during its operational phase?

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

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

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

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

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

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?

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

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Is the activity that is being applied for a solid waste handling or treatment facility? YES NO

If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system? YES NO

If YES, what estimated quantity will be produced per month? m³

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

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

Will the activity produce effluent that will be treated and/or disposed of at another facility? YES NO

If YES, provide the particulars of the facility:

Facility name:			
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:

Waste water will be reused where possible when washing construction equipment or during mixing of mortar.

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

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:

Emissions will result from dust during the construction phase. However, due to the relatively small size and short duration of the construction (± 3 months) it is anticipated that there will be minimal dust generated, should dust suppression measures be implemented successfully. The rate of emissions shall comply with the national air quality standard of PM₁₀ promulgated under the National Environmental Management: Air Quality Act (Act 39 of 2004).

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms YES NO

BASIC ASSESSMENT REPORT

of the NEM:WA?

	YES
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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	NO
YES	NO

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

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:

Noise will result from construction activities on site during the construction phase. During the operational phase, noise will be generated by vehicles utilising the road. However, the existing access road, which is located approximately 150m towards a westerly direction from the proposed new access road site, will be closed to traffic. Furthermore, the proposed access road provides access to a busy road (R61) and therefore, it is anticipated that there will not be a significant change in noise levels during the operational phase.

13. WATER USE

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

Municipal	Water board	Groundwater	River, stream, dam or lake	Other	The activity will not use water
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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:

		litres
YES	NO	

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.

Please refer to attachment in Appendix H for Water Use License Application proof of submission

14. ENERGY EFFICIENCY

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

The activity will not make use of energy from the national grid and energy requirements will be limited to the use of fuel for construction activities and equipment. Efficient use of fuel would be ensured by minimizing the amount of trips undertaken by construction vehicles and by ensuring that the construction vehicles are properly serviced.

The activity will not require any energy during the operational phase.

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

No alternative energy sources will be utilised during the construction or operational phases.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

- 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): 1

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

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

Property description/physical address:

Province	Eastern Cape Province
District Municipality	OR Tambo District Municipality
Local Municipality	King Sabata Dalindyebo Local Municipality
Ward Number(s)	
Farm name and number	
Portion number	Remainder of Mthatha Erf 861 and Remainder of Mthatha Erf 862
SG Code	C-1-10-0001-00000861-00000

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:

Residential

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~~

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1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

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

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

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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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"/>
2.2 Plateau	<input type="checkbox"/>	2.5 Open valley	<input type="checkbox"/>
2.3 Side slope of hill/mountain	<input type="checkbox"/>	2.6 Plain	<input type="checkbox"/>
		2.7 Undulating plain / low hills	<input type="checkbox"/>
		2.8 Dune	<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):	Alternative S3 (if any):			
Shallow water table (less than 1.5m deep)	YES	NO	YES	NO	YES	NO
Dolomite, sinkhole or doline areas	YES	NO	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES	NO	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	NO	YES	NO	YES	NO
An area sensitive to erosion	YES	NO	YES	NO	YES	NO

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

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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	Veld dominated by alien species ^E	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

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

5. SURFACE WATER

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

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

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

A small tributary of the Mthatha River

6. LAND USE CHARACTER OF SURROUNDING AREA

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

Natural area	Dam or reservoir	Polo fields
Low density residential	Hospital/medical centre	Filling station^H
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential ^A	Church	Agriculture
Retail commercial & warehousing	Old age home	River, stream or wetland
Light industrial	Sewage treatment plant ^A	Nature conservation area
Medium industrial ^{AN}	Train station or shunting yard ^N	Mountain, koppie or ridge
Heavy industrial ^{AN}	Railway line ^N	Museum
Power station	Major road (4 lanes or more) ^N	Historical building

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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
Quarry, sand or borrow pit	Golf course	Other land uses (describe)

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

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:

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:

The filling station is situated about 465 meters in a westerly direction away from the development site and, as such, will not have an impact on the proposed development as a result of the width of the valley between the two facilities. Conversely, the proposed development will not have an impact on the filling station given the reason above.

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

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

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

7. CULTURAL/HISTORICAL FEATURES

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

YES	NO
Uncertain	

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:

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The following is a brief summary of the heritage assessment (HA) specialist findings:

As far as can be gauged no culturally sensitive pre-18th century artefacts have been found in the zone although oral history (not required in this study) might show that different groups (such as Early, Middle and Stone Age man, San, Khoekhoen and Black Xhosa speaking peoples) once lived in this area. The weir at Sidwadeni River crossing on the outskirts of Mthatha appears to be the only historical structure to be considered. The community should be consulted regarding its current use as an informal car wash facility. SAHRA or ECPHRA needs to be informed and permit issued if any significant structures, buildings, graves, walls or historic trees older than 60 years are to be altered, cleared or demolished. If any unusual or sensitive material is found when excavating the site, work should stop immediately until a proper investigation is launched by SAHRA or ECPHRA, an archaeologist and/or the historian. Home owner of Erf 861 should be fully consulted regarding the implications of a new approach and access road from an opposite direction over her privately owned land.

Please refer to HIA assessment report attached in Appendix D for further details.

Will any building or structure older than 60 years be affected in any way?

YES	NO
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Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

YES	NO
-----	---------------

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

The heritage authorities (SAHRA and Eastern Cape Provincial Heritage Resources Authority) were informed of the activity and requested to comment and/or provide their input where necessary.

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:

In 2007 the KSD labour force (15-64) was made up of roughly 229 668 people or 53% of the total population. Of these, 28% (66 158) were employed; while only 15% (35 944) fell in the category of the unemployed. A staggering 127 566, or some 55% of the labour force was classified as not economically active. The latter is matter of grave concern to the municipality especially because the youth and women constitute a considerably large majority of the labour force (KSD IDP, 2012).

Economic profile of local municipality:

The Economically Active Population (15-64 years) comprises 54% of the municipal population of which 64% are within the ages of 15-34. The youth of ages 15-24 make up 42% of the Economically Active Population (KSD IDP, 2012). The Government and the Community Services sectors accounted for the largest share (54%) of employment in 2008, followed by the Finance (9.4%) and Wholesale and Trade sectors (7.9 %).

Level of education:

The Figure below illustrates the level of education as a percentage of the population within the OR Tambo District Municipality.

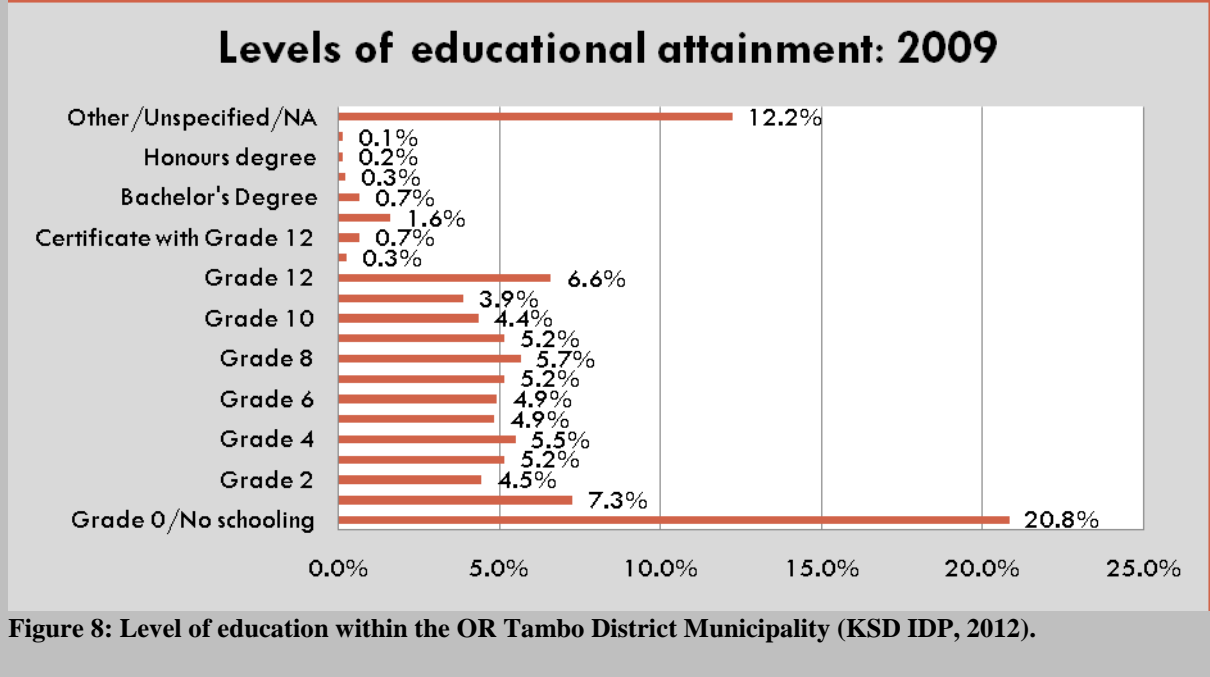


Figure 8: Level of education within the OR Tambo District Municipality (KSD IDP, 2012).

b) Socio-economic value of the activity

- What is the expected capital value of the activity on completion?
- What is the expected yearly income that will be generated by or as a result of the activity?
- Will the activity contribute to service infrastructure?
- Is the activity a public amenity?
- How many new employment opportunities will be created in the development and construction phase of the activity/ies?
- What is the expected value of the employment opportunities during the development and construction phase?
- What percentage of this will accrue to previously disadvantaged individuals?
- How many permanent new employment opportunities will be created during the operational phase of the activity?
- What is the expected current value of the employment opportunities during the first 10 years?
- What percentage of this will accrue to previously disadvantaged individuals?

	R 4000 000.00
	R 0.00
<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
	20
	Between R 80 000 and R 90 000
	100%
	None
	Between R 80 000 and R 90 000
	100%

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>

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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)	No Natural Area Remaining (NNR)	Sidwadeni River is located within an aquatic Critical Biodiversity Area (Aquatic CBA 2) which represent an important sub-catchments and supporting zones for conserving biodiversity and maintaining ecosystem functioning. However, according to the Ecological Specialist study, The small catchment area of the Sidwadeni River has undergone extensive transformation and is considered to be in a poor condition. Land-use is characterized by a mix of formal/informal urban residential areas, light industry and commercial activities which accounts for more than 50% of the catchment, with limited grazing and subsistence cultivation. Natural areas (grassland) are in a relatively degraded state within the highly urbanized catchment area.

- 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	47 %	Largely modified river systems where a large change in vegetation composition and structure has taken place.
Near Natural (includes areas with low to moderate level of alien invasive plants)	%	

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Degraded (includes areas heavily invaded by alien plants)	23%	Moderately modified. Loss and change of natural habitat and biota have occurred, but the basic ecosystem functions are still predominantly unchanged. The non-marginal zone (channel banks and upper riparian zone) of the Sidwadeni River has undergone significant transformation from the natural reference state. The channel banks are presently dominated by exotic plants, both woody and herbaceous. Very few indigenous species remain.
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	30 %	The small catchment area of the Sidwadeni River has undergone extensive transformation and is considered to be in a poor condition. Land-use is characterized by a mix of formal/informal urban residential areas, light industry and commercial activities which accounts for more than 50% of the catchment, with limited grazing and subsistence cultivation.

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 unchannelled wetlands, flats, seeps pans, and artificial wetlands)			Estuary		Coastline			
	Endangered									
	Vulnerable									
	Least Threatened									
	YES	NO	UNSURE	YES	NO	YES	NO			

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

The marginal zone (active river channel) is presently dominated by bedrock and open water habitat, with marginal vegetation limited to a few emergent herbaceous species occurring on exposed bedrock, sediment deposits and grasses along the lower fringes of the river banks. Although the cover and abundance of vegetation is probably similar to the natural reference state for this river, the species composition has changed. Species are mainly herbaceous with a mix of indigenous sedges and exotic herbs and small shrubs. Woody vegetation is almost exclusively exotic (*Salix fragilis*, *Solanum mauritianum*) although the extent of these species within the marginal zone is very limited (mainly occurring on the lower river banks). Hydrophilic (water-loving) grasses and indigenous sedges (*Cyperus sexangularis*, *Cyperus denudatus*) dominate the wetted perimeter of the channel, with exotic reeds (*Arundo donax*) interspersed. Herbaceous invaders and water weeds such as *Hypochaeris radicata*, *Persicaria lapathifolia*, *Coix lacryma-jobi*, *Canna indica* and *Nasturtium officinale* occur within the active channel on vegetated rock outcrops and sediment deposits.

Disturbance of the marginal zone is mainly in the form of poor water quality and altered flow volumes caused by activities in the catchment and nearby leaking sewers, with evidence of human excrement on the upper banks and some evidence of vegetation removal. The introduction of exotic invasive species and algal growth within the marginal zone is apparent (due to increased nutrient inputs), attributed to the current disturbance regime for this heavily degraded river system.

The non-marginal zone (channel banks and upper riparian zone) of the Sidwadeni River has undergone significant transformation from the natural reference state. The channel banks are presently dominated by exotic plants, both woody and herbaceous. Very few indigenous species remain, with exotic woody species including *Eucalyptus* spp, *Acacia mearnsii*, *Pinus elliottii*, *Populus x cansecens*, *Morus alba*, *Melia azedarach*, *Solanum mauritianum* and *Caesalpinia decapetala* having replaced the indigenous woody component almost entirely. The zone is characterized by a variety of grasses, with both indigenous species (*Aristida* spp., *Chloris gayana*) and exotic grasses (*Cynodon dactylon*, *Pennisetum clandestinum*) occurring. Whilst a few indigenous sedges and herbaceous plants are found on the lower channel banks (eg. *Cyperus denudatus*, *Cyperus sexangularis*), exotic reeds (*Arundo donax*) and invasive shrubs such as *Rubus fruticosus* and *Senna didymobotrya* are now dominant. There is clear evidence of vegetation removal, trampling and burning in the non-marginal zone which has affected the condition of vegetation. Reduced ground cover, bank erosion and human/animal impacts such as grazing and litter have also had a considerable negative impact on the vegetation of the non-marginal zone. Channel incision and steep/vertical confining river banks have affected the non-marginal vegetation which is no longer flooded to the same degree and frequency as would have probably been the case in the reference state of the river. Increased water and nutrient inputs from the adjacent hillslopes and floodplain to the south of the river especially (attributed mainly to leaking sewers) is also responsible for the alteration in species composition within the riparian zone.

According to the SANBI Red Data List database, the indigenous component of riparian vegetation at the site has a low threat status and species are considered to be of 'Least Concern'.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Daily Dispatch	
Date published	12 October 2012	
Site notice position	Latitude	Longitude
	31°35'17.11"S	28°47'53.01"E
Date placed	12 October 2012	

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.

Please refer to Section 1.1 of the CRR in Appendix E.

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)
Ms Bahle Keikelame	Landowner	0823778295
Mr M Mbana	Landowner	0823336650
Mr N Seeraj	Landowner	tembisa@ksd.org.za
Ms Tembisa Lusiki	Landowner	tembisa@ksd.org.za
Mr Mava Mkukwana	I&AP, Sasol Garage Manger	0715019645
Ms Makazula Bubele	I&AP; Erf 22918 Owner	0822567964 or 0834404338
Mr Mhlayonke L Kori	I&AP; Personal Advisor	0825594549
Ms Nomahomba Luqhide	I&AP; Ward 9 councillor	0827006319 or 0767909566

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
One request for a site plan was received.	Please refer to Appendix A and C for site plans and facility illustrations.

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
Eastern Cape Department of Economic Development, Environmental Affairs and Tourism	Mr Sizakele Gabula	0475311191		sizakele.gabula@deaet.ecape.gov.za	Private Bag x5029, Mthatha, 5099
Department of Water Affairs (DWA)	Mr Mlondoloz Mbikwana; Mrs Mandisa Nduna	0437010366		mbikwanam@dwa.gov.za ; ndunam@dwa.gov.za	02 Moore Street, Ocean Terrace Building, Quiqney, 5201
South African Heritage Resource Agency	Dr Mariagrazia Galimberti	0214624502		mgalimberti@sahra.org.za	111 Harrington Street, Cape Town, 8000
Eastern Cape Provincial Heritage Resource Authority	Mr M. L. Zote; Ms Africa Maxongo	0436422811		nmaxongo@ecphra.org.za	Department of Public Works building at corner Amalinda and Scholl Road, East London.
Department of Rural Development and Land Reform	Ms Bahle Keikelame	0437007000		bdjkeikelame@ruraldevelopment.gov.za	15 Couatts Road, Ocean Terrace, Block F, Quigney, East London, 5201
Department of Roads and Transport	Mr Alson Sibulele Msindo	0475326534 or 0475018862		sibulele.msindo@dot.ecprov.gov.za	Cnr Owen and Leeds Street, Botha Sigcau

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					Building, 7th Floor, Office No. 42, Mthatha, 5099
Department of Environmental Affairs	Ms Mmatlala Rabothata	0123951768		mrabothata@environment.gov.za	Fedsure Forum Building; 315 Pretorius Street; Pretoria, 0002

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.

Please note that a detailed description of the impact rating methodology and a detailed account of the impacts and mitigation measures have been attached as Appendix F. The summary provided in the table below reflects the impacts identified for each of the phases of the proposed development.

BASIC ASSESSMENT REPORT

Table 1: Summary of the Impact Assessment Results for the Sidwadeni River Access Roads and River Crossings

Impact	Alternative	Nature	Environmental Risk	Nature	Environmental Risk	Public Response	Cumulative Impacts	Irreplaceable loss of resources	Prioritisation Factor	Final Significance Score
Construction Phase										
1: Changes to water quality	All	Negative	-7.5	Negative	-2.5	None	Medium	Low	1.2	-2.9
2: Soil erosion and sedimentation	Proposal	Negative	-9	Negative	-2	None	Low	Low	1	-2
2: Soil erosion and sedimentation	Upgrade Existing	Negative	-10	Negative	-2.5	None	Low	Low	1	-2.5
3: Disturbance of in-stream habitat and biota	All	Negative	-3.5	Negative	-1.25	None	Medium	Low	1.2	-1.5
4: Disturbance of channel banks	All	Negative	-10	Negative	-4.5	None	Low	Low	1	-4.5
5: Destruction of riparian vegetation and habitat	All	Negative	-9	Negative	-5	None	Low	Medium	1.2	-5.8
6: Job creation	All	Positive	13.75	Positive	13.75	None	Low	Low	1	13.75
7: Traffic	Proposal	Negative	-10	Negative	-7	None	Low	Low	1	-7
7: Traffic	Upgrade Existing	Negative	-10	Negative	-8	None	Low	Low	1	-8
8: Discovery of sub-surface archaeological finds	All	Negative	-9.75	Negative	-6	None	Low	Low	1	-6
9: Discovery of unknown sub-surface human remains	All	Negative	-9.75	Negative	-6	None	Low	Low	1	-6
Operational Phase										
10: Changes to the hydrological regime and increased potential for erosion/ sedimentation	All	Negative	-10.5	Negative	-6	None	Medium	Low	1.2	-5.8
11: Changes in channel structure, ecosystems and dynamics	All	Negative	-8.25	Negative	-4	None	Low	Low	1	-4

BASIC ASSESSMENT REPORT

Impact	Alternative	Nature	Environmental Risk	Nature	Environmental Risk	Public Response	Cumulative Impacts	Irreplaceable loss of resources	Prioritisation Factor	Final Significance Score
12: Invasion by weeds and IAPs	All	Negative	-8.25	Negative	-3.5	None	Medium	Medium	1.3	-4.7
13: Chemical pollution	All	Negative	-9.75	Negative	-6	None	Medium	Medium	1.3	-8
14: Increased fire risk	All	Negative	-6	Negative	-2.75	None	Medium	Medium	1.3	-3.7
15: Increased noise and light pollution	All	Negative	-11	Negative	-10	None	Low	Low	1	-10
16: Increased solid waste dumping/littering	All	Negative	-7.5	Negative	-4	None	Low	Low	1	-4
17: Traffic	Proposal	Positive	6.25	Positive	6.25	None	Low	Low	1	6.25
17: Traffic	Upgrade Existing	Positive	5.25	Positive	5.25	None	Low	Low	1	5.25

Table 2: Comparative Assessment of Alternatives.

Impact	Proposal	Upgrade Existing
Construction Phase		
1: Changes to water quality	-2.9	-2.9
2: Soil erosion and sedimentation	-2	-2.5
3: Disturbance of in-stream habitat and biota	-1.5	-1.5
4: Disturbance of channel banks	-4.5	-4.5
5: Destruction of riparian vegetation and habitat	-5.8	-5.8
6: Job creation	13.75	13.75
7: Traffic	-7	-8
8: Discovery of sub-surface archaeological finds	-6	-6
9: Discovery of unknown sub-surface human remains	-6	-6
Operational Phase		
10: Changes to the hydrological regime and increased potential for erosion/ sedimentation	-5.8	-5.8
11: Changes in channel structure, ecosystems and dynamics	-4	-4
12: Invasion by weeds and IAPs	-4.7	-4.7
13: Chemical pollution	-8	-8
14: Increased fire risk	-3.7	-3.7
15: Increased noise and light pollution	-10	-10
16: Increased solid waste dumping/littering	-4	-4
17: Traffic	6.25	5.25
Final Overall Significance	-55.9	-58.4

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 A (preferred alternative)

The proposed access road alignments and designs are the result of a series of possibilities that were considered in the planning and design phase. It is anticipated that the development will be completed over a relatively short period. The proposed/preferred alternative will result in minimal losses of riparian and other types of vegetation. Upon assessment of the site, there were no major compelling environmental concerns that would hinder the proposed development.

The negative impacts resulting from the proposed development will occur during the construction and operational phase. The majority of the impacts would have a limited extent after successful implementation of mitigation measures.

The potential impacts associated with the proposed development are related to changes and/or disturbances in the following: water quality, soil erosion and sedimentation, in-stream habitats and biota, channel banks, riparian vegetation and habitat, hydrological regimes, channel structure, ecosystem dynamics, alien invasion, chemical pollution, noise and dust pollution, fire risks and littering, as well as employment creation. The entire development will be associated with positive socio-economic impacts including, amongst others, creation of jobs and availability of suitable infrastructure. The impacts identified for this development are anticipated to be of short or medium duration with high confidence levels that they will occur. Numerous mitigation measures have been identified that would reduce or ameliorate the identified impacts. These mitigation measures are presented in Section E below.

Overall, it can be said that the negative impacts of the construction phase, although negative, can be reduced to have a low significance. The negative impacts of the operational phase will, after implementation of mitigation or corrective actions, have a low negative effect on the environment.

Alternative B

The access road alignments and designs are the result of a series of possibilities that were considered in the planning and design phase. It is anticipated that the development will be completed over a relatively short period. The proposed/preferred alternative will result in minimal losses of riparian and other types of vegetation. Upon assessment of the site, there were no major compelling environmental concerns that would hinder the proposed development.

The negative impacts resulting from the proposed development will occur during the construction and operational phase. The majority of the impacts would have a limited extent after successful implementation of mitigation measures.

The potential impacts associated with the proposed development are related to changes and/or disturbances in the following: water quality, soil erosion and sedimentation, in-stream habitats and biota, channel banks, riparian vegetation and habitat, hydrological regimes, channel structure, ecosystem dynamics, alien invasion, chemical pollution, noise and dust pollution, fire risks and littering, as well as employment creation. The entire development will be associated with positive socio-economic impacts including, amongst others, creation of jobs and availability of suitable infrastructure. The impacts identified for this development are anticipated to be of short or medium duration with high confidence levels that they will occur.

Compared to the Alternative A this alternative will have a larger footprint, and will be less suitable for safety reasons due to the new alignment of the R61 as this will create an intersection with the new R61 alignment at an unsuitable angle, which would create a further safety concern.

Alternative C



No-go alternative (compulsory)

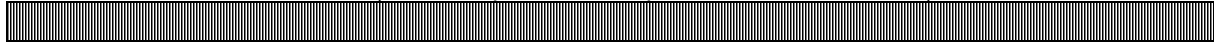
If the proposed activity does not take place, none of the identified impacts will occur. The proposed access road and bridge is required to provide all weather access across the Sidwadeni River and thereby ensure pedestrian and vehicular safety. Selecting the no go alternative will mean that the goals set for the development will not be reached.

SECTION E: RECOMMENDATION OF PRACTITIONER

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

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



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

It is recommended that Alternative A (Site alternative S1) be implemented.

Construction Phase

- The proper storage and handling of hazardous substances (hydrocarbons and chemicals) needs to be administered. Storage containers must be regularly inspected so as to prevent leaks.
- Construction materials liable to spillage are to be stored in appropriate structures (bunded areas) with impermeable flooring (e.g. cement).
- Washing and cleaning of equipment should also be done in berms or bunded areas.
- Storage of potentially hazardous materials (e.g. Fuel, oil, cement, bitumen, paint, etc.) should be outside of the 1:100 year flood line, or within a horizontal distance of 100 m from a watercourse, or as specified by the Environmental Control Officer.
- Surface water draining off contaminated areas containing oil and petrol would need to be channelled towards a sump to separate these chemicals and oils. Alternatively, other appropriate contamination prevention measures should be put in place.
- Operation and storage of machinery and construction-related equipment must be done outside of the riparian zone where possible.
- Spillages should be cleaned up immediately and contaminants properly drained and disposed of using proper solid/hazardous waste facilities (not to be disposed of within the natural environment). Any contaminated soil from the construction site must be removed and rehabilitated timeously and appropriately.
- Any cement batching activities should occur outside of the delineated riparian zone. Cement batching boards should be used. Cement products/wash not to be disposed of into the natural environment.
- Ensure that suitable overnight facilities are provided for vehicles, away from any areas of channelled flow.
- Provide drip-trays beneath standing machinery/plant.
- Routinely check machinery/plant for oil or fuel leaks before construction begins.
- Sanitation – portable toilets (1 toilet per 15 to 30 users is the norm) to be provided where construction is occurring. Workers need to be encouraged to use these facilities and not the natural environment. Toilets should not be located within the 1:100 year flood line of a watercourse or closer than 100m or from any natural water bodies including rivers, streams and wetlands. Waste from chemical toilets should be disposed of regularly and in a responsible manner by a registered waste contractor.
- Provide waste bins and encourage workers not to litter or dispose of solid waste in the natural environment but to use available facilities for waste disposal.

- Clear and completely remove from site all general waste, constructional plant, equipment, surplus rock and other foreign materials once construction has been completed.
- All stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by berms.
- No stockpiling should take place within a water course, including the riparian area.
- Mechanical plant and bowsers must not be refuelled or serviced within or directly adjacent to any river channel.
- It is suggested that all construction camps, lay down areas, batching plants and any stores should be located outside of the recommended minimum buffer widths as defined in the Eastern Cape Biodiversity Conservation Plan: Technical Report (Hayes *et al.*, 2007).
 - For crossing: *Sidwadeni River* this would be a distance of 32 m from the edge of the delineated riparian zone.
- Excavated material/sediments/spoil from the construction zone (including any foreign materials) should not be placed or stockpiled within the channel or riparian zone in order to reduce the possibility of material being washed downstream.
- For activities taking place within the channel it is suggested that coffer dams are built around the works area to trap any possible pollutants or sediments.
- Measures must be implemented to distribute storm water as evenly as possible to avoid point sources of erosion.
- Any erosion points created during construction should be filled and stabilized immediately.
- Install sediment barriers (e.g. silt fences, sandbags hay bales, filter berms, retaining walls and check dams) immediately downstream of any disturbed areas (e.g. where vegetation stripping is taking place) to trap any sediment generated during construction.
- Sediment traps should be regularly maintained and cleared so as to ensure effective drainage.
- Erosion control measures should be employed where required.
- Construction should proceed mainly during the dry, winter months in order to minimize soil erosion linked to high runoff rates.
- All disturbed construction areas should be suitably top-soiled and vegetated as soon as practically possible after construction, so as to stabilize erosion-prone areas.
- Access routes should be designed to limit their potential impact on the environment, bearing in mind steep banks and areas that are already showing reduced groundcover and erosion.
- Weather forecasts from the South African Weather Bureau should be monitored to avoid exposing soil or building works or materials during a storm event and appropriate action must be taken in advance to protect construction works should a storm event be forecasted.
- Water quality should be monitored for level of suspended solids at a point upstream and immediately downstream of the construction area, during construction and for a period after
- Limit activities wherever possible from taking place within the river channel, or for as short a time as possible where such activities are necessary.
- During construction, flows should be diverted around active in-channel work areas to ensure flow continues within the channel and to allow for continued ecological functioning of the downstream areas during construction. Under no circumstance should consideration be given to the excavation of an alternative channel or the damming of the stream in such a manner as to totally restrict the flow.
- Any abstraction of water for construction purposes must be approved by the Department of Water Affairs (DWA).
- For activities taking place within the channel it is suggested that coffer dams are built around the works area to trap any possible pollutants or sediments
- Water diversion needs to be temporary. Re-directed flow must not be channelled towards

stream banks which could cause erosion.

- Undertake work during low flow season to reduce the risk of high flow/flood-related impacts.
- Excavated material/sediments/spoil from the construction zone (including any foreign materials) should not be placed or stockpiled within the channel.
- Restrict unnecessary disturbance to in-channel areas and manage the removal of sediments/natural debris from channels.
- River sediments should not be permanently removed from the system.
- Construction should occur during the winter months when flows are low to limit the potential for erosion linked to high runoff rates.
- Necessary erosion protection works for unstable channel banks (e.g. coarse rock pack, gabions) need to be constructed both at the abstraction site and along pipeline routes up the channel banks.
- No physical damage should be done to any aspects of the river channel and banks other than those necessary to complete the works as specified. Ensure that construction activities are carefully monitored to limit unnecessary impacts to the riparian zone.
- Re-instate indigenous vegetation (grasses and indigenous trees) disturbed as soon as practically possible once construction ceases so as to stabilise channel banks. Monitor re-vegetation to ensure channel banks are well covered and protected from erosion.
- Bank erosion should be monitored at regular intervals (e.g. at the onset of the rainy period) in order to assess whether further river bank
- Access routes should be designed to limit potential impact on the environment, bearing in mind steep banks and areas that are already showing reduced groundcover and erosion. A single access route along the channel bank should be considered to access the site – preferably utilising existing footpaths and tracks where areas have already been disturbed.
- Where necessary, structures should be installed to stabilise locally steepened channel banks/hill slopes.
- Soil required for construction purposes must not be derived from the river channel or banks.
- Any soil removed from the river banks/channel should be stockpiled and used in rehabilitation.
- Soils on the river floodplain above the banks that have been compacted must be loosened to an appropriate depth to allow seed germination to occur.
- Install protective works (e.g. gabions, reno-mattresses) to stabilise and protect unstable banks immediately upstream and downstream of site where bedrock ceases to protect the channel margins.
- It is advised that an ECO with a good understanding of the local flora be appointed during the construction phase.
- The construction zone should be clearly demarcated prior to the commencement of construction activities to ensure that construction vehicles do not unduly disturb riparian areas.
- Keep the clearing of vegetation in riparian areas to a minimum and attempt to ensure that clearing occurs in parallel with the construction progress where practically possible.
- Vegetation clearing should ideally be scheduled for the dry season.
- Road-bridge crossings must be designed to limit the physical area of riparian habitat impacted and should be aligned with degraded sections of the riparian zone where possible.
- Attempts must be made to restrict activities within the riparian zone by only accessing the channel using existing access roads.
- Site supervisors must ensure that impacts are confined to the construction zone. Prevent vehicular and personnel access into undisturbed areas. Where possible, cut vegetation to ground-level rather than removing it completely, leaving root systems intact to ensure rapid

re-colonization.

- No birds or any other animals may be trapped, hunted or handled in any way.
- Exotic trees and plants encountered should be removed from the site and properly disposed of.
- Rehabilitate disturbed areas as soon as practically possible with indigenous vegetation. A suitable replanting and re-vegetation programme is needed to rehabilitate the riparian zone post-construction. This should comprise a mix of rapidly germinating indigenous annual grass seeds to stabilise the surface layers with a mix of naturally occurring indigenous tree species for longer term stabilisation. These tree species should be those suited to the eco-region and adapted to stabilising the banks and riparian margins.
- Where any works (e.g. erosion & storm water control measures) near a river is required, specific attention should be paid to the immediate re-vegetation of cleared areas to limit the potential for erosion and sedimentation.
- Where possible, local labour should be used for construction activities.
- Training programmes could be instated to facilitate skill transfer to local contractors and labourers.
- A detailed Traffic Management Plan should be compiled by a suitably qualified professional to ensure that traffic on the roads in the area is disrupted as little as possible.
- The traffic management plan should include measures for the optimisation of the amount of travel on the local roads, thereby reducing the impact on the local road infrastructure.
- The delivery of construction material and equipment should be limited to hours outside peak traffic times (including weekends) prevailing on the surrounding roads.
- Where obvious damage to the road infrastructure has occurred as a result of the project, repairs should be undertaken in accordance with the local municipality specifications and requirements.
- If during construction any possible finds are made, the operations must be stopped and a qualified archaeologist be contacted for an assessment of the find.
- Any substantial fossil remains (e.g. vertebrates, petrified wood) encountered during excavation should be reported to SAHRA for possible mitigation by a professional palaeontologist.
- Mitigation of discovered sites will require a fence around the cemetery with a buffer of at least 10 meters and demarcation as a no-go area.
- Where graves and cemeteries are to be directly impacted by construction activities, it is recommended that the graves be relocated after a full grave relocation process that includes comprehensive social consultation.
- A suitably qualified grave relocation specialist should be appointed to facilitate the grave relocation process

Operational Phase

- The bridge crossings should not trap any run-off, thereby creating inundated areas, but allow for the free-flow movement of water.
- Storm water and any runoff generated by the hard surfaces should be discharged into energy dissipation structures prior to being discharged back into the natural water courses (such as retention ponds or areas with rock rip-rap grassed with indigenous vegetation to encourage the trapping of silt and attenuation of flows).
- Limit the physical footprint of the road and verges that would require clearing to a minimum.
- Bridge piers and associated works, should be designed in such a way so that they don't alter the extent of the natural flood lines for the watercourse.
- Construct any necessary erosion protection works where the bridge infrastructure intersects

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the channel banks of the river in order to prevent scouring or outer-bank erosion. Protection works to be considered include gabions, reno mattresses or other stabilising structures to armour them.

- The channel embankments must be rehabilitated to ensure both longitudinal and cross sectional stability against summer floods. Depending on the circumstances, this may necessitate stabilizing structures such as gabions or reno mattresses as well as careful attention to vegetation rehabilitation.
- The design of the bridge infrastructure needs to accommodate 1:100 year floods. Infrastructure located within the 1:100 year flood line will need to be designed and appropriately protected to be robust enough to withstand a 1:100 year flood.
- Pillars, columns or bridge buttresses should not be placed in in-stream or in riparian zones, if at all possible. If this is necessary, the number and width of pillars, vertical columns and buttresses placed within the river channel and floodplain should be minimised and all precautions should be taken to avoid excessive disturbance of the channel banks and reduce the risk erosion/increased sedimentation.
- Bridges must span the entire width of the channel and river floodplain so as to avoid disturbance to the riparian zones of rivers.
- Ensure that construction methods are according to the best-practice recommendations provided under the Impact above: *Disturbance of in-stream habitat and biota* and impact on Invasion by weeds
- All areas disturbed by construction activities must be rehabilitated to their former state once construction activities have ceased and should be monitored afterwards to prevent disturbed areas from being colonised by exotic species and weeds.
- Re-vegetation of disturbed areas must use indigenous plants including locally-common indigenous grasses and trees/shrubs.
- Stockpiles containing mostly exotic or weed species should be covered for extended periods to inhibit seedling germination of these species.
- Implement an integrated alien weed control programme to ensure that alien plants are actively managed and eradicated from the site, with adequate follow-up measures to ensure the area remains weed-free. Remove and effectively treat any alien plants in the construction zone during the construction and operational phase. The dominant invasive species common to the river sites have been documented in this report. These particular species need to be targeted for control and removal.
- Restrict and control the use of herbicides and other chemicals in the road reserve during maintenance.
- Runoff from the road surface should be dissipated before entering the watercourses and diffuse flow encouraged. Discharge through a vegetated buffer should be promoted where possible to trap contaminants.
- Ensure that vegetation in the road reserve is kept low (vertical height) by means of regular maintenance.
- Provide waste bins in the vicinity of sensitive aquatic ecosystems to promote waste management. Regular clearing/maintenance of bins would be required.
- Ensure that any rest stops (if applicable) and associated structures are not situated adjacent to riverine habitats.

Is an EMPr attached?

YES NO

The EMPr must be attached as Appendix G.

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

BASIC ASSESSMENT REPORT

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.

Mr GP Kriel

NAME OF EAP

SIGNATURE OF EAP

04 October 2013

DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information