



agriculture  
& environmental affairs

Department:  
Agriculture  
& Environmental Affairs  
PROVINCE OF KWAZULU-NATAL

(For official use only)

EIA File Reference Number:  
NEAS Reference Number:  
Waste Management Licence Number:  
(if applicable)  
Date Received:

DC22/0008/2013
KZN/EIA/0001068/2013

## BASIC ASSESSMENT REPORT

Submitted in terms of the Environmental Impact Assessment Regulations, 2010 promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998)

This template may be used for the following applications:

- **Environmental Authorization** subject to basic assessment for an activity that is listed in Listing Notices 1 or 3, 2010 (Government Notices No. R 544 or No. R 546 dated 18 June 2010); or
- **Waste Management Licence** for an activity that is listed in terms of section 20(b) of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) for which a basic assessment process as stipulated in the EIA Regulations must be conducted as part of the application (refer to the schedule of waste management activities in Category A of Government Notice No. 718 dated 03 July 2009).

Kindly note that:

1. This **basic assessment report** meets the requirements of the EIA Regulations, 2010 and is meant to streamline applications. This report is the format prescribed by the KZN Department of Agriculture & Environmental Affairs. Please make sure that this is the latest version.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not 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 text.
3. Where required, place a cross in the box you select.
4. An incomplete report will be returned to the applicant for revision.
5. 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 will result in the rejection of the application as provided for in the regulations.
6. No faxed or e-mailed reports will be accepted.
7. The report must be compiled by an independent environmental assessment practitioner ("EAP").
8. 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.

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9. The KZN Department of Agriculture & Environmental Affairs may require that for specified types of activities in defined situations only parts of this report need to be completed.
10. The EAP must submit this basic assessment report for comment to all relevant State departments that administer a law relating to a matter affecting the environment. This provision is in accordance with Section 24 O (2) of the National Environmental Management Act 1998 (Act 107 of 1998) and such comments must be submitted within 40 days of such a request.
11. **Please note that this report must be handed in or posted to the District Office of the KZN Department of Agriculture & Environmental Affairs to which the application has been allocated (please refer to the details provided in the letter of acknowledgement for this application).**

## DEPARTMENTAL REFERENCE NUMBER(S)

File reference number (EIA):	DC22/0008/2013 KZN/EIA/0001068/2013
File reference number (Waste Management Licence):	

## SECTION A: DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER AND SPECIALISTS

## 1. NAME AND CONTACT DETAILS OF ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

Name and contact details of the EAP who prepared this report:

Business name of EAP:	<b>ENVIROEDGE</b>		
Physical address:	<b>1 Jerome Drive, Kloof, 3610</b>		
Postal address:	<b>P.O. Box 1009, Kloof</b>		
Postal code:	<b>3640</b>	Cell:	<b>083 619 8683</b>
Telephone:	<b>(031) 764 2569</b>	Fax:	<b>086 654 6598</b>
E-mail:	<b>karin@enviroedge.co.za</b>		

## 2. NAMES AND EXPERTISE OF REPRESENTATIVES OF THE EAP

Names and details of the expertise of each representative of the EAP involved in the preparation of this report:

Name of representative of the EAP	Education qualifications	Professional affiliations	Experience at environmental assessments (yrs)
<b>Karin Samouilhan</b>	<b>BA</b>	<b>IAIASA</b>	<b>14 years</b>
<b>Steven Whitaker</b>	<b>BSc(Hons)</b>	<b>IAIASA</b>	<b>6 years</b>

## 3. NAMES AND EXPERTISE OF SPECIALISTS

Names and details of the expertise of each specialist that has contributed to this report:

Name of specialist	Education qualifications	Field of expertise	Section/ s contributed to in this basic assessment report	Title of specialist report/ s as attached in Appendix D
<b>Alex Whitehead</b>	<b>BSc Hons Pr, Sci. Nat</b>	<b>Environmental consultant, Ecologist</b>	<b>4 and A</b>	<b>Riparian Delineation Report</b>

## SECTION B: ACTIVITY INFORMATION

### 1. PROJECT TITLE

Describe the project title as provided on the application form for environmental authorization:

Proposed Willowfountain Road Upgrade

### 2. PROJECT DESCRIPTION

Provide a detailed description of the project:

The Msunduzi Municipality has proposed the upgrade of the Willowfountain Road, in Edendale, Pietermaritzburg. The road upgrade aims to allow local residents to have improved, formalised access to their homes, schools, shops and the extended road network. The project is located in Ward 14 of the Msunduzi Local Municipality.

The project involves the construction of a 1.6km, 6m wide black top all-weather road complete with drainage and watercourse crossings, storm water drains and a pedestrian walkway. The road currently consists of a gravel access road and sections of gravel with informal drainage crossings and storm water pipes. The current road conditions are susceptible to erosion which makes access problematic for the local residents of Willowfountain. The road upgrade has been designed to align with the existing roads for the most part. The proposed road upgrade involves widening by 3 to 5 metres in certain areas, realignment of approximately 500m of road, the upgrading of four existing culverts, the realignment and upgrading of two hairpin bends/watercourse crossing points.

The road start and end points can be found at: Start: 29°42'39.567"S, 30°19'1.418"E; End: 29°42'44.818"S, 30°18'34.846"E.

### 3. ACTIVITY DESCRIPTION

Describe each listed activity in Listing Notice 1 (GNR 544, 18 June 2010), Listing Notice 3 (GNR 546, 18 June 2010) or Category A of GN 718, 3 July 2009 (Waste Management Activities) which is being applied for as per the project description:

#### **GNR 544:**

**11.** The construction of:

- (xi) bridges;
- (xii) 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 the watercourse, excluding where such construction will occur behind the development setback line.

**18.** The infilling or depositing of any material of more than 5 cubic meters into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from

- (i) a watercourse;
- but excluding where such infilling, depositing, dredging, excavation, removal or moving.

**39.** The expansion of

- (i) canals;
- (ii) channels;
- (iii) bridges;
- (iv) weirs;
- (v) bulk storm water outlet structures;
- (vi) marinas;

within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, where such expansion will result in an increased development footprint but excluding where such expansion will occur behind the development setback line.

**40.** The expansion of

- (i) jetties by more than 50 square metres;
- (ii) spillways by more than 50 square metres; or
- (iii) buildings by more than 50 square metres

within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, but excluding where such expansion will occur behind the development setback line.

#### **4. 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 report. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity 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.

Sections B 5 – 15 below should be completed for each alternative.

#### **5. ACTIVITY POSITION**

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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, minutes and seconds. List alternative sites were applicable.

	Latitude (S):		Longitude (E):		
<b>Alternative:</b>					
Alternative S1 <sup>1</sup> (preferred or only site alternative)	°	′	″	°	′
Alternative S2 (if any)	°	′	″	°	′
Alternative S3 (if any)	°	′	″	°	′

### In the case of linear activities:

	Latitude (S):		Longitude (E):		
<b>Alternative:</b>					
Alternative S1 (preferred or only route alternative)					
• Starting point of the activity	29°	42′	39.567″	30°	19′ 1.418″
• Middle point of the activity	29°	42′	55.47″	30°	18′ 35.16″
• End point of the activity	29°	42′	44.818″	30°	18′ 34.846″
Alternative S2 (if any) Please see note below.			″		″
• Starting point of the activity	°	′	″	°	′
• Middle point of the activity	°	′	″	°	′
• End point of the activity	°	′	″	°	′
Alternative S3 (if any)			″		″
• Starting point of the activity	°	′	″	°	′
• Middle point of the activity	°	′	″	°	′
• End point of the activity	°	′	″	°	′

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

Start	29° 42′ 39.567″ S	30° 19′ 1.418″ E
500m	29° 42′ 52.07″ S	30° 18′ 49.74″ E
1000m	29° 42′ 55.47″ S	30° 18′ 35.16″ E
1500m	29° 42′ 48.96″ S	30° 18′ 34.22″ E
End	29° 42′ 44.818″ S	30° 18′ 34.846″ E

The project consists the upgrade of an existing gravel access road to black top all-weather road complete with drainage and watercourse crossings and storm water drains and a pedestrian walkway. The road upgrade has been designed to align with the existing roads for the most part, however, there will be widening by 3 to 5 metres in certain areas, realignment of approximately 500m of road, the upgrading of four existing culverts, the realignment and the upgrading of two hairpin bends/watercourse crossing points.

Alternatives have, therefore, not been considered, as this would create additional road servitudes and cleared areas.

<sup>1</sup> "Alternative S.." refer to site alternatives.

## 6. PHYSICAL SIZE OF THE ACTIVITY

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

**Alternative:**

Alternative A1<sup>2</sup> (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

or, for linear activities:

**Alternative:**

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

**Size of the activity:**

6m wide servitude x 1 600m
9 600 m <sup>2</sup>
m <sup>2</sup>
m <sup>2</sup>

**Length of the activity:**

1 600 m
m
m

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

**Alternative:**

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

**Size of the site/servitude:**

6m wide servitude x 1 600m
9 600 m <sup>2</sup>
m <sup>2</sup>
m <sup>2</sup>

## 7. SITE ACCESS

Does ready access to the site exist?

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

YES	
	m

The existing gravel road will be used for construction access.

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.

## 8. SITE OR 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 report.

The site or route plans must indicate the following:

- 8.1. the scale of the plan which must be at least a scale of 1:500;

<sup>2</sup> "Alternative A.." refer to activity, process, technology or other alternatives.

- 8.2. the property boundaries and numbers/ erf/ farm numbers of all adjoining properties of the site;
- 8.3. the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 8.4. the exact position of each element of the application as well as any other structures on the site;
- 8.5. the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 8.6. walls and fencing including details of the height and construction material;
- 8.7. servitudes indicating the purpose of the servitude;
- 8.8. sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
  - rivers, streams, drainage lines or wetlands;
  - the 1:100 year flood line (where available or where it is required by DWA);
  - ridges;
  - cultural and historical features;
  - areas with indigenous vegetation including protected plant species (even if it is degraded or infested with alien species);
- 8.9. for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 8.10. the positions from where photographs of the site were taken.

## 9. 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.

## 10. FACILITY ILLUSTRATION

A detailed illustration of the facility must be provided at a scale of 1:200 and attached to this report as Appendix C. The illustrations must be to scale and must represent a realistic image of the planned activity/ies.

A drawing of the proposed road layout has been included under Appendix C, together with a drawing detail illustrating the proposed pipe drainage crossings which will be fitted with culvert headwall details and splitter blocks on the outlet side to help to reduce water velocity and erosion/scour potential, together with a section of reno mattress protection/gabion baskets and stone pitching (or similar), below the headwall structure, to help reduce erosion potential.

## 11. ACTIVITY MOTIVATION



**11.1. Socio-economic value of the activity**

What is the expected capital value of the activity on completion?	R 6 million
What is the expected yearly income that will be generated by or as a result of the activity?	Unknown at this stage
Will the activity contribute to service infrastructure?	YES
Is the activity a public amenity?	YES
How many new employment opportunities will be created in the development phase of the activity?	Unknown at this stage
What is the expected value of the employment opportunities during the development phase?	Unknown at this stage
What percentage of this will accrue to previously disadvantaged individuals?	100 %
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?	Unknown at this stage
What percentage of this will accrue to previously disadvantaged individuals?	100 %

**11.2. Need and desirability of the activity**

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

The Msunduzi Municipality has identified the need to improve the condition of the Willowfontain Road as the current condition and alignment of the road is unlikely to be able to sustain increased traffic volumes. The road currently consists of a gravel access road and sections of asphalt with informal drainage crossings and storm water pipes. The current road conditions are susceptible to erosion which makes access problematic for the local residents of Willowfontain. The road upgrade has been designed to align with the existing roads for the most part, there will be widening by 3 to 5 metres in certain areas, realignment of approximately 500m of road, the upgrading of four existing culverts, the realignment and upgrading of two hairpin bends/watercourse crossing points.  
The proposed road upgrade will provide improved access for local residents.

Indicate any benefits that the activity will have for society in general:

The upgrade of the road section from existing gravel and temporary surfaces to municipal 6m wide black top all-weather road with drainage and watercourse crossings and stormwater drains and a pedestrian walkway will allow local residents to gain improved formal access to their homes, schools, shops and the extended road network. The proposed road upgrade should help to reduce erosion and dust pollution, while also improving road safety for road users, with a more level drained surface, the realignment and upgrading of two hairpin bends and the construction of pedestrian walkway and associated storm water drainage infrastructure.  
The road upgrade also includes the creation of formal drainage crossings with four existing culverts being upgraded, and the construction of two new watercourse crossings which should help to reduce surface water erosion.

Indicate any benefits that the activity will have for the local communities where the activity will be located:

The proposed road upgrade will allow local residents to gain formal access to their homes, schools, shops and the extended road network. The proposed road upgrade of the road section from existing gravel and temporary surfaces to municipal 6m wide black top all-weather road with drainage and watercourse crossings and stormwater drains and a pedestrian walkway should help to reduce susceptibility to erosion and dust pollution, while also improving road safety for users, with a more level drained surface, the realignment and upgrading of two hairpin bends and the construction of pedestrian walkway and associated storm water drainage infrastructure.

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The road upgrade also includes the creation of formal drainage crossings with four existing culverts being upgraded, and the construction of two new watercourse crossings which should help to reduce surface water erosion.

Employment opportunities will be generated with the proposed road upgrade. Improved infrastructure will improve access to and from the area.

There will be maintenance requirements in the operational phase, as with the gravel road, and thus potential associated job opportunities.

### 12. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline:	Administering authority:	Date:
National Environmental Management Act, No 107 of 1998	DEA	2010
National Heritage Resources Act (Act 25 of 1999)	AMAFA	1999
National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004)	DEA	2004
Conservation of Agricultural Resources Act (Act 43 of 1983)	DEA	1983
The Protected Areas Act ( Act 57 of 2003)	DEA	2003
The National Water Act (Act 36 of 1998)	DWA	1998
The Constitution Act (No 108 of 1996)		1996
National Environmental Management Waste Act (Act 59 of 2002)	DEA	2002
Mineral and Petroleum Resources Development Act (Act 28 of 2002)	DMR	2002

### 13. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

#### 13.1. Solid waste management

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

YES	NO
-----	----

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

< 10 m <sup>3</sup>
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How will the construction solid waste be disposed of? (describe)

Construction solid waste will be gathered in skips or bins and taken via waste disposal trucks to the nearest licensed landfill site appropriate to the particular waste type.

Where will the construction solid waste be disposed of? (provide details of landfill site)

General construction solid waste to be disposed of at the nearest registered landfill site. Hazardous waste to be taken to an approved hazardous waste disposal site, should there be any hazardous waste generated.

Will the activity produce solid waste during its operational phase? 

YES	NO
-----	----

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

m <sup>3</sup>
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How will the solid waste be disposed of? (provide details of landfill site)

N/A

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

The solid waste will be disposed of at the New England road Landfill site.

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 the further requirements of the application.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation? 

YES	NO
-----	----

**If yes, contact the KZN Department of Agriculture & Environmental Affairs to obtain clarity regarding the process requirements for your application.**

Is the activity that is being applied for a solid waste handling or treatment facility? 

YES	NO
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**If yes, contact the KZN Department of Agriculture & Environmental Affairs to obtain clarity regarding the process requirements for your application.**

### 13.2. 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? 

m <sup>3</sup>	
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Will the activity produce any effluent that will be treated and/or disposed of on site? 

Yes	NO
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**If yes, contact the KZN Department of Agriculture & Environmental Affairs to obtain clarity regarding the process requirements for your application.**

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

YES	NO
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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:

Where possible, grey water will be re-used on site. General construction waste such as paper, plastic and glass would be recycled wherever possible.

A suitably registered waste company should be contracted to dispose of sewage waste water from chemical toilets on site. Waybills as proof of correct disposal would be required.

### 13.3. Emissions into the atmosphere

Will the activity release emissions into the atmosphere? 

YES	NO
-----	----

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

YES	NO
-----	----

**If yes, contact the KZN Department of Agriculture & Environmental Affairs to obtain clarity regarding the process requirements for your application.**

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

Emissions will be emitted from construction vehicles and dust would be generated from construction activities, however these emissions are considered to be of low concentration and short duration.

Emissions from the bitumen process utilised during the road construction process will also occur. The asphalt process is generally conducted at high temperatures and as such, heat and vapour emissions may occur. These emissions should, however, be minimal and limited to the work area, as well as transient in nature as the heat and vapour will dissipate fairly quickly.

#### 13.4. 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 would be generated from construction vehicles, machinery and associated construction activities. The noise emissions are considered to be a low to moderate level.

#### 14. WATER USE

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

municipal	<input checked="" type="checkbox"/> water board	<input type="checkbox"/> groundwater	<input type="checkbox"/> river, stream, dam or lake	<input type="checkbox"/> other	<input type="checkbox"/> 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 permit from the Department of Water Affairs?

If YES, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this report.

#### 15. ENERGY EFFICIENCY

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

The road design has, for the most part, been aligned with the existing horizontal and vertical alignment, four existing culverts will be upgraded, including the realignment and upgrading of two hairpin bends/watercourse crossing points.

Environmental education and awareness will be conveyed to all workers involved in the road upgrade.

Waste material will be separated and recycled where possible. This will also help to reduce disposal costs.

The purchase of local building materials will help to reduce the transportation, through travel distance reduction (fuel requirement reduction) and emissions and will also help to support the local economy.

The utilisation of biodegradable products wherever possible, and the sourcing of materials from organic/natural sources wherever possible will also help to improve energy efficiency.

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

Recycled material will be used, where possible.

Construction activities should take place during day time hours only.

## SECTION C: 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 C and indicate the area, which is covered by each copy No. on the Site Plan.

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

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

### 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

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Indicate the landform(s) that best describes the site (Please cross the appropriate box).

**Alternative S1 (preferred site):**

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea-front
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**Alternative S2 (if any):**

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea-front
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**Alternative S3 (if any):**

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea-front
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### 3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Has a specialist been consulted for the completion of this section?  YES  NO

If YES, please complete the following:

Name of the specialist: \_\_\_\_\_

Qualification(s) of the specialist: \_\_\_\_\_

Postal address: \_\_\_\_\_

Postal code: \_\_\_\_\_

Telephone: \_\_\_\_\_ Cell: \_\_\_\_\_

E-mail: \_\_\_\_\_ Fax: \_\_\_\_\_

Are any further specialist studies recommended by the specialist?  YES  NO

If YES, specify: \_\_\_\_\_

If YES, is such a report(s) attached in Appendix D?  YES  NO

Signature of specialist: \_\_\_\_\_ Date: \_\_\_\_\_

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

	Alternative S1:		Alternative S2 (if any):		Alternative S3 (if any):	
	YES	NO	YES	NO	YES	NO
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

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available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

### 4. GROUND COVER

Has a specialist been consulted for the completion of this section? 

YES	NO
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If YES, please complete the following:

Name of the specialist:			
Qualification(s) of the specialist:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites? 

YES	NO
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If YES, specify and explain:	<p>The Msunduzi Municipality C-Plan information indicates that <i>Afrilaxus spinifrons intermedius</i> – Natal Banana Frog occurs in the study area. The Natal Banana Frog is described as <b>Vulnerable</b> and occurring in wetland areas.</p> <p><i>Poecilogale albinucha</i> – African Striped Weasel is described as <b>Least Concern</b> and occurs within the study area.</p> <p><i>Encephalartos natalensis</i> – Natal Cycad occurs in the study area and is described as <b>Vulnerable</b>.</p> <p>None of these species were noted during the site visits conducted.</p>		
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Are there any special or sensitive habitats or other natural features present on any of the alternative sites? 

YES	NO
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If YES, specify and explain:	<p>There are four watercourse crossings, namely WC1, WC2, WC3 and WC4 which are all tributaries of the Wilgerfontein River and can be described as sensitive habitats (refer to Figure 6 under Appendix A). These water crossings form part of the Wilgerfontein River catchment. These drainage features contain some indigenous vegetation, together with some alien invasive plants located near the road edges, and along the stream edges. The remaining indigenous vegetation within the stream edges and along the stream banks must be maintained as far as possible, and any impact on this vegetation should be as limited as possible. The streams have already been impacted by the existing road and culvert/bridge structures along the road length.</p> <p>The Msunduzi Municipality Ecosystem Services Plan (Figure 7), illustrates that there is a Riparian corridor running along the eastern portion of the road, from the start point of the proposed road upgrade up to Water course 1 crossing. Water course crossing 1, (please refer to Figure 7), is described as a Key Area, and on the Msunduzi C-Plan (Figure 5a), Site/Unit ID 14478 indicates Midlands Mistbelt Grassland and Dry Ngongoni Veld, together with the Natal Banana Frog, the African Striped Weasel and the Natal Cycad.</p>		
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Are any further specialist studies recommended by the specialist? 

YES	NO
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If YES, specify:	<p>A Riparian Delineation Report/wetland delineation report has been undertaken. This study has been undertaken in response to comment received from DWA, and the wetland and riparian areas have been delineated according to this Department's guideline entitled "A practical field procedure for identification and delineation of wetlands and riparian areas." (DWAF, 2005).</p>		
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If YES, is such a report(s) attached in Appendix D? 

YES	NO
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Signature of specialist: \_\_\_\_\_ Date: \_\_\_\_\_

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

Please refer to Figure 5 – EKZNW – C-Plan, Figure 5a – Msunduzi Municipality Conservation Plan, Figure 6 – Willowfontein Road Riparian Delineation and Figure 7 – Ecosystem Services Plan under Appendix B.

## Basic Assessment Report

Natural veld – good condition <sup>E</sup>	Natural veld with scattered aliens <sup>E</sup>	Natural veld with heavy alien infestation <sup>E</sup>	<del>Veld dominated by alien species<sup>E</sup></del>	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.

The EAP has the necessary expertise to complete this section.

### 5. LAND USE CHARACTER OF SURROUNDING AREA

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

Land use character			Description
Natural area	YES	NO	<p>The proposed road upgrade intersects four watercourses, which are tributaries of the Wilgerfontein River. The Msunduzi Municipality Ecosystem Services Plan indicates that there is a Riparian corridor running along the eastern portion of the road, from the start point of the proposed road upgrade up to Water course 1 crossing. Water course crossing 1, (please refer to Figure 7), is described as a Key Area, and on the Msunduzi C-Plan (Figure 5a), Site/Unit ID 14478 indicates Midlands Mistbelt Grassland and Dry Ngongoni Veld, together with the Natal Banana Frog, the African Striped Weasel and the Natal Cycad.</p> <p>Key areas are also illustrated to the south of the proposed road upgrade, with a riparian corridor to the south, from Watercourse crossing 1 extending in a southerly direction, and a riparian corridor illustrated to the north-east from the start point of the road, and extending in a north-easterly direction.</p> <p>Watercourse crossings would be impacted by the proposed development. The proposed bridge and culvert stream crossings will need to be fitted with culvert headwalls, splitter blocks on the outlet side</p>



## Basic Assessment Report

			to help to reduce water velocity and erosion/scour potential, together with a section of reno mattress protection/gabion baskets and stone pitching (or similar), below the headwall structure, to help reduce erosion potential. Refer to Appendix C.
Low density residential	YES	NO	
Medium density residential	YES	NO	
High density residential	YES	NO	
Informal residential	YES	NO	
Retail commercial & warehousing	YES	NO	
Light industrial	YES	NO	
Medium industrial	YES	NO	
Heavy industrial	YES	NO	
Power station	YES	NO	
Office/consulting room	YES	NO	
Military or police base/station/compound	YES	NO	
Spoil heap or slimes dam	YES	NO	
Quarry, sand or borrow pit	YES	NO	
Dam or reservoir	YES	NO	There is a small dam located to the north-east of the study area. This dam is unlikely to be impacted by the proposed road upgrade.
Hospital/medical centre	YES	NO	
School/ creche	YES	NO	The Thandokhule Pre-School crèche is located at 29°42'41.80"S; 30°18'58,58"E. The proposed road upgrade will provide an improved and more reliable access road to the school, thereby helping to provide community empowerment through education. The Ndlelayabasha Public Primary School is located at 29°43'5.80"S; 30°18'49.33"E. The proposed road upgrade will, likewise, provide an improved and more reliable access road to the school, thereby helping to provide community empowerment through education.
Tertiary education facility	YES	NO	
Church	YES	NO	
Old age home	YES	NO	
Sewage treatment plant	YES	NO	
Train station or shunting yard	YES	NO	
Railway line	YES	NO	
Major road (4 lanes or more)	YES	NO	
Airport	YES	NO	
Harbour	YES	NO	
Sport facilities	YES	NO	There is a sports field located to the south-east of the study area. It is unlikely that the proposed road development will impact on this facility, however, the proposed road upgrade will provide improved access to the

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			sportsfield, thereby facilitating access for the community.
Golf course	YES	NO	
Polo fields	YES	NO	
Filling station	YES	NO	
Landfill or waste treatment site	YES	NO	
Plantation	YES	NO	None identified. There are, however, small subsistence agricultural plantations farms within the study area, and to the south-east in the vicinity of the Ndlelayabasha Public Primary School, there is an area of contoured farm land, which appears to no longer be maintained.
Agriculture	YES	NO	There are some small subsistence agricultural farms within the study area, and to the south-east in the vicinity of the Ndlelayabasha Public Primary School, there is an area of contoured farm land, which appears to no longer be maintained..
River, stream or wetland	YES	NO	<p>The Wilgerfontein River and its tributaries are located within 500m. The proposed road upgrade intersects four watercourses, which are tributaries of the Wilgerfontein River. The Msunduzi Municipality Ecosystem Services Plan indicates that there is a Riparian corridor running along the eastern portion of the road, from the start point of the proposed road upgrade up to Water course 1 crossing. Water course crossing 1, (please refer to Figure 7), is described as a Key Area, and on the Msunduzi C-Plan (Figure 5a), Site/Unit ID 14478 indicates Midlands Mistbelt Grassland and Dry Ngongoni Veld, together with the Natal Banana Frog, the African Striped Weasel and the Natal Cycad.</p> <p>Key areas are also illustrated to the south of the proposed road upgrade, with a riparian corridor to the south, from Watercourse crossing 1 extending in a southerly direction, and a riparian corridor illustrated to the north-east from the start point of the road, and extending in a north-easterly direction.</p> <p>Watercourse crossings would be impacted by the proposed development. The proposed bridge and culvert stream crossings will need to be fitted with culvert headwalls, splitter blocks on the outlet side to help to reduce water velocity and erosion/scour potential, together with a section of reno mattress protection/gabion</p>

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			baskets and stone pitching (or similar), below the headwall structure, to help reduce erosion potential. Refer to Appendix C.
Nature conservation area	YES	NO	<p>The proposed road upgrade intersects four watercourses, which are tributaries of the Wilgerfontein River. The Msunduzi Municipality Ecosystem Services Plan indicates that there is a Riparian corridor running along the eastern portion of the road, from the start point of the proposed road upgrade up to Water course 1 crossing. Water course crossing 1, (please refer to Figure 7), is described as a Key Area, and on the Msunduzi C-Plan (Figure 5a), Site/Unit ID 14478 indicates Midlands Mistbelt Grassland and Dry Ngongoni Veld, together with the Natal Banana Frog, the African Striped Weasel and the Natal Cycad.</p> <p>Key areas are also illustrated to the south of the proposed road upgrade, with a riparian corridor to the south, from Watercourse crossing 1 extending in a southerly direction, and a riparian corridor illustrated to the north-east from the start point of the road, and extending in a north-easterly direction.</p> <p>Watercourse crossings would be impacted by the proposed development. The proposed bridge and culvert stream crossings will need to be fitted with culvert headwalls, splitter blocks on the outlet side to help to reduce water velocity and erosion/scour potential, together with a section of reno mattress protection/gabion baskets and stone pitching (or similar), below the headwall structure, to help reduce erosion potential. Refer to Appendix C.</p>
Mountain, hill or ridge	YES	NO	<p>The proposed road upgrade runs around the lower edges of a low hill, crossing streams in the valley formed by hills to the west, south and east and a high point of 869masl to the north-east. A high point of 1159masl lies to the north-west and 993masl to the south-east.</p>
Museum	YES	NO	
Historical building	YES	NO	
Protected Area	YES	NO	<p><u>Sensitive vegetation and stream crossing areas:</u></p> <p>The proposed road upgrade intersects four watercourses, which are tributaries of the Wilgerfontein River. The Msunduzi</p>

		<p>Municipality Ecosystem Services Plan indicates that there is a Riparian corridor running along the eastern portion of the road, from the start point of the proposed road upgrade up to Water course 1 crossing. Water course crossing 1, (please refer to Figure 7), is described as a Key Area, and on the Msunduzi C-Plan (Figure 5a), Site/Unit ID 14478 indicates Midlands Mistbelt Grassland and Dry Ngongoni Veld, together with the Natal Banana Frog, the African Striped Weasel and the Natal Cycad.</p> <p>Key areas are also illustrated to the south of the proposed road upgrade, with a riparian corridor to the south, from Watercourse crossing 1 extending in a southerly direction, and a riparian corridor illustrated to the north-east from the start point of the road, and extending in a north-easterly direction.</p> <p>Watercourse crossings would be impacted by the proposed development.</p> <p>The proposed bridge and culvert stream crossings will need to be fitted with culvert headwalls, splitter blocks on the outlet side to help to reduce water velocity and erosion/scour potential, together with a section of reno mattress protection/gabion baskets and stone pitching (or similar), below the headwall structure, to help reduce erosion potential. <b>Refer to Appendix C.</b></p> <p><u>Archaeologically sensitive or No-go areas:</u></p> <p>“The proposed development consists a road upgrade within an existing transformed servitude and is, therefore, not a threat to cultural resources.</p> <p>Any deviation beyond 2m of the existing servitude is rendered a new road and will automatically trigger a Heritage Impact Assessment as previous surveys identified several graves and a cemetery along the road. The developer is required to ensure that the construction team operates within the existing servitude to avoid inadvertent damage to graves.”</p> <p>Graves and a cemetery have, therefore, been identified by AMAFA, within the study area.</p> <p>The road upgrade has been designed to align with the existing roads for the most part, there will be widening by 3 to</p>
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## Basic Assessment Report

			5 metres in certain areas, realignment of approximately 500m of road, the upgrading of four existing culverts, the realignment and upgrading of two hairpin bends/watercourse crossing points. Therefore, in line with AMAFA comment received, an HIA has been commissioned for the proposed road upgrade project.
Graveyard	YES	NO	<p>“The proposed development consists a road upgrade within an existing transformed servitude and is, therefore, not a threat to cultural resources. Any deviation beyond 2m of the existing servitude is rendered a new road and will automatically trigger a Heritage Impact Assessment as previous surveys identified several graves and a cemetery along the road. The developer is required to ensure that the construction team operates within the existing servitude to avoid inadvertent damage to graves.”</p> <p>Graves and a cemetery have, therefore, been identified by AMAFA, within the study area.</p> <p>The road upgrade has been designed to align with the existing roads for the most part, there will be widening by 3 to 5 metres in certain areas, realignment of approximately 500m of road, the upgrading of four existing culverts, the realignment and upgrading of two hairpin bends/watercourse crossing points. Therefore, in line with AMAFA comment received, an HIA has been commissioned for the proposed road upgrade project.</p>
Archaeological site	YES	NO	<p>“The proposed development consists a road upgrade within an existing transformed servitude and is, therefore, not a threat to cultural resources. Any deviation beyond 2m of the existing servitude is rendered a new road and will automatically trigger a Heritage Impact Assessment as previous surveys identified several graves and a cemetery along the road. The developer is required to ensure that the construction team operates within the existing servitude to avoid inadvertent damage to graves.”</p> <p>Graves and a cemetery have, therefore, been identified by AMAFA, within the study area.</p> <p>The road upgrade has been designed to align with the existing roads for the most part, there will be widening by 3 to 5 metres in certain areas, realignment</p>

## Basic Assessment Report

			of approximately 500m of road, the upgrading of four existing culverts, the realignment and upgrading of two hairpin bends/watercourse crossing points. Therefore, in line with AMAFA comment received, an HIA has been commissioned for the proposed road upgrade project.
Other land uses (describe)	YES	NO	

### 6. 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 palaeontological sites, on or within 20m of the site?

YES	NO
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If YES, contact a specialist recommended by AMAFA to conduct a heritage impact assessment. The heritage impact assessment must be attached as an appendix to this report.

An HIA has been commissioned for the project.

## Basic Assessment Report

Briefly explain the recommendations of the specialist:

The Edendale area is a historical landscape associated with Christian families of Griqua, Rolong, Sotho, Tlokwa, Hlubi and Swazi origin that saw its status of a successful African village threatened by urban sprawl (Pietermaritzburg labourers) in the 1930s and 1940s. This renders the area a rich cultural landscape where significant sites have been identified. It is noted that this particular development is a road upgrade within existing servitude and is therefore not a threat to cultural resources.

Since this is an access road upgrade into an all weather road, in terms of the KwaZulu Natal Heritage Act No.4 of 2008 and the National Heritage Resources Act No.25 of 1999 (Section 38 (1)), we have no objection to the proposed development strictly within the existing transformed servitude. Any deviation beyond 2m of the existing servitude is rendered a new road and will automatically trigger a Heritage Impact Assessment as previous surveys identified several graves and a cemetery along the road. The developer is required to ensure that the construction team operates within the existing servitude to avoid inadvertent damage to graves.

You are also required to adhere to the below-mentioned standard conditions:

Conditions:

1. AMAFA should be contacted if any heritage objects are identified during earthmoving activities and all development should cease until further notice.
2. No structures older than sixty years or parts thereof are allowed to be demolished altered or extended without a permit from AMAFA.
3. No activities are allowed within 50m of a site, which contains rock art.
4. AMAFA should be contacted if any graves are identified during construction and the following procedure is to be followed:

stop construction

report finding to local police station

report to AMAFA to investigate.

Should you have any further queries, please contact the designated official using the case number quoted above in the case header.

Graves and a cemetery have, therefore, been identified by AMAFA, within the study area.

The road upgrade has been designed to align with the existing roads for the most part, there will be widening by 3 to 5 metres in certain areas, realignment of approximately 500m of road, the upgrading of four existing culverts, the realignment and upgrading of two hairpin bends/watercourse crossing points. Therefore, in line with AMAFA comment received, an HIA has been commissioned for the proposed road upgrade project.

Will any building or structure older than 60 years be affected in any way?  YES  NO

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

YES	NO
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If YES, please submit the necessary application to AMAFA and attach proof thereof to this report.

## SECTION D: PUBLIC PARTICIPATION

### 1. ADVERTISEMENT

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
  - (i) the site where the activity to which the application relates is or is to be undertaken; and
  - (ii) any alternative site mentioned in the application;
- (b) giving written notice to—
  - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
  - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
  - (v) the local and district municipality which has jurisdiction in the area;
  - (vi) any organ of state having jurisdiction in respect of any aspect of the activity (as identified in the application form for the environmental authorization of this project); and
  - (vii) any other party as required by the competent authority;
- (c) placing an advertisement in—
  - (i) one local newspaper; or
  - (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and



- (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
  - (i) illiteracy;
  - (ii) disability; or
  - (iii) any other disadvantage.

## 2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—
  - (i) that an application for environmental authorization has been submitted to the KZN Department of Agriculture & Environmental Affairs in terms of the EIA Regulations, 2010;(ii)
  - (iii) a brief project description that includes the nature and location of the activity to which the application relates;
  - (iv) where further information on the application can be obtained; and
  - (iv) the manner in which and the person to whom representations in respect of the application may be made.

## 3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

## 4. DETERMINATION OF APPROPRIATE PROCESS

The EAP must ensure that the public participation process is according to that prescribed in regulation 54 of the EIA Regulations, 2010, but may deviate from the requirements of subregulation 54(2) in the manner agreed by the KZN Department of Agriculture & Environmental Affairs as appropriate for this application. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate.

Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

## 5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before this application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations (regulation 57 in the EIA Regulations, 2010) and be attached as Appendix E to this report.

## 6. PARTICIPATION BY DISTRICT, LOCAL AND TRADITIONAL AUTHORITIES

District, local and traditional authorities (where applicable) are all key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of this application and provided with an opportunity to comment.

Has any comment been received from the district municipality?

YES  NO

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

Please be advised that the uMgungundlovu District Municipality has no comments on the application.  
Thank you  
Mandisa Khomo

Has any comment been received from the local municipality?

YES  NO

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

BID Comment received from Msunduzi Municipality:  
The following preliminary comments are submitted for your information and attention:  
1. The assessment must be informed by the Msunduzi Environmental Management Framework (EMF) and Conservation Plan (C-Plan). Whilst reference is made in the BID to the EKZNW C-Plan, the Msunduzi C-Plan and EMF are at a higher resolution and must therefore inform this study. The Msunduzi EMF and C-Plan must be referred to in the Basic Assessment Report and the site specific reports generated from the EMF and C-Plan must be attached as Annexures to the Basic Assessment Report. In addition any environmental constraints relating to the site raised by the EMF must be specifically evaluated and addressed. The site specific EMF reports referred to above can be obtained from this Unit. Please contact Mr Gerald Naicker in this regard on 033 3923244 or on email gerald.naicker@msunduzi.gov.za  
2. Particular attention should be paid to the management of storm water from the road surface. The adjacent Willowfountain Stream is already degraded and incised possibly as a result of increased storm water flows and measures must therefore be put in place to limit the impact of storm water discharges into the stream.  
3. The EMP must include measures to control alien invasive plants emerging within areas disturbed by the construction activities, particularly at the watercourse crossings.

Has any comment been received from a traditional authority?

YES  NO

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

## Basic Assessment Report

12-09-2013 BID Comment received from AMAFA  
Willowfontein Access Road Upgrade, Ward 14, Edendale.  
Our Ref: SAH 13/ CaselD: 3442  
Bernadet Pawandiwa  
Date: Thursday September 12, 2013  
Tel: 033 394 6543  
Email: bernadep@amafapmb.co.za Page No: 1  
CaselD: 3442

In terms of Section 38(8) of the National Heritage Resources Act (Act 25 of 1999) and the KwaZulu-Natal Heritage Act (Act 4 of 2008)

Proposed Willowfontein Road Upgrade, Edendale, Msunduzi Municipality (WARD 14).

We acknowledge receipt of your invitation for comment with regards to the proposed development. The object of AMAFA is to administer, conserve and protect heritage resources of the Province within the terms of KZN Heritage Act no. 4 (2008) and the National Heritage Resources Act No 25 of 1999.

The Edendale area is a historical landscape associated with Christian families of Griqua, Rolong, Sotho, Tlokwa, Hlubi and Swazi origin that saw its status of a successful African village threatened by urban sprawl (Pietermaritzburg labourers) in the 1930s and 1940s. This renders the area a rich cultural landscape where significant sites have been

identified. It is noted that this particular development is a road upgrade within existing servitude and is therefore not a threat to cultural resources.

Since this is an access road upgrade into an all-weather road, in terms of the KwaZulu Natal Heritage Act No.4 of 2008 and the National Heritage Resources Act No.25 of 1999 (Section 38 (1)), we have no objection to the proposed development strictly within the existing transformed servitude. Any deviation beyond 2m of the existing servitude is rendered a new road and will automatically trigger a Heritage Impact Assessment as previous surveys identified several graves and a cemetery along the road. The developer is required to ensure that the construction team operates within the existing servitude to avoid inadvertent damage to graves.

You are also required to adhere to the below-mentioned standard conditions:

Conditions:

1. AMAFA should be contacted if any heritage objects are identified during earthmoving activities and all development should cease until further notice.
2. No structures older than sixty years or parts thereof are allowed to be demolished altered or extended without a permit from AMAFA.
3. No activities are allowed within 50m of a site, which contains rock art.
4. AMAFA should be contacted if any graves are identified during construction and the following procedure is to be followed:

stop construction

report finding to local police station

report to AMAFA to investigate.

Should you have any further queries, please contact the designated official using the case number quoted above in the case header.

## 7. CONSULTATION WITH OTHER STAKEHOLDERS

Any stakeholder that has a direct interest in the site or property, such as servitude holders and service providers, should be informed of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

YES  NO

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

## Basic Assessment Report

WESSA – Re BID 08-04-2013

Proposed Upgrade of Willowfountain Road, Edendale

Background Information Document:

Thank you for inviting comment from WESSA however we do not wish to register as an I&AP. We are satisfied that should a site specific EMP be implemented for each of the stream crossing significant damage to environment can be avoided.

We support the construction of formalized crossings and improved stormwater control.

Regards

Carolyn Schwegman

EIA Co-ordinator

WESSA KZN Region

EKZN Wildlife - Re BID 02/04/2013

Proposed Willowfountain Road Upgrade, Edendale, Msunduzi Municipality (Ward 14) District Municipality: Umgungundlovu

The Draft Basic Assessment Report (*should read BID*), for the above-mentioned application was recently reviewed by Ezemvelo's IEM Planning staff and the comments for the application can be found attached. Please do not hesitate to contact this office if any further biodiversity concerns are discovered during the remainder of the process, or if you have any questions with regards to the content of the response.

Kindly acknowledge receipt of this correspondence.

Kind regards.

DB.

Ezemvelo KZN Wildlife Planning Division: IEM Section

Proposed Willowfountain Road Upgrade, Edendale, Msunduzi Municipality (Ward 14) District Municipality: uMgungundlovu

Thank you for forwarding the above-mentioned application to Ezemvelo KZN Wildlife (Ezemvelo) for review and comment. Whilst Ezemvelo KZN Wildlife endeavors to process applications as quickly as possible, there may be delays in responding due to current resource constraints.

We sincerely regret any inconvenience caused. Please direct any queries in this regard to the Acting Co-ordinator IEM on (tel.) 033 845 1425 or (e-mail) [thambud@kznwildlife.com](mailto:thambud@kznwildlife.com).

Thank you in advance for your support and understanding.

Yours sincerely

D. Berriman.

DWA – Re BID

N. Leburu forwarded BID to Manisha Thakurdin.

10-06-2013 MT requested hard copy of the BID.

12-06-2013 DWA comments on BID forwarded by way of fax:

Background Information Document for the Proposed Willowfountain Road Upgrade, Edendale (Ward 14).

Reference is made to the above-mentioned document received by this Office.

The following matters need to be addressed:

- (1) Management of solid waste generated during the construction phase and post construction phase.
- (2) Management of any hazardous waste material generated pre and post construction.

(3) Identification of any environmental sensitive areas and water resources such as wetlands, streams, rivers, etc, as well as possible pollution impacts and mitigation measures of such water resources.

(4) Stormwater management plan/system including the prevention of erosion and sedimentation.

(5) Sewage treatment and disposal i.e. waste water management. This should also include the type of toilet facilities to be provided for construction workers.

(6) Spill contingency plans

(7) Environmental Management Plan

In addition the following points need to be taken into consideration:

- The removal of any indigenous trees would need to be authorised by the Department of Forestry, Fisheries and Agriculture.

- Mr Norman Ward from the Water Resources Management Section of this Department must be contacted on (031) 336 2700 in order to obtain the necessary authorisations (licence, etc.), should there be any **alteration** to the bed, banks, course or characteristics of a watercourse or any **impedance or diversion** of flow of a watercourse as well as any **abstraction** and/or **storage** of water.

- Please note that all wetland areas must be delineated according to this Departments guideline entitled "*A practical field procedure for identification and delineation of wetlands and riparian areas.*" (DWAF, 2005).

This Department awaits required information in order to provide more detailed comments.

Please do not hesitate to contact this office should you have any concerns, comments or queries.

Yours faithfully

Nonkululeko Mokoena

DOT– Re BID

10-04-2013 Initial Comments on BID received.

Ref: T10/2/2/159/240

Proposed Willowfontain Road Upgrade

1. Your application dated 25 March 2013 refers.
2. The application was received on 9 April 2013.
3. You are advised that the application is in the process of being investigated and that you will be advised accordingly of this Department's comments.
4. When communicating with this office, please supply the above mentioned file reference.

12-06-2013 DOT Comments on BID received.

M. Schmid forwarded comments.

Proposed Willowfontain Road Upgrade Edendale: Situate in the Msunduzi Municipality: situate in the Administrative District and Province of KwaZulu-Natal.

1. Your letter dated March 2013 refers.
2. In terms of the KwaZulu-Natal Provincial Road Act No. 4 of 2001 this Department has no objections to the abovementioned PROPOSED ROAD UPGRADE.
3. This approval shall not exempt the applicant from the provisions of any other law.

Yours faithfully.

M. Schmid.

Head Transport

ESKOM Re BID

## Basic Assessment Report

### **20-03-2013 Eskom – Re BID**

We refer to the above mentioned application's documents in respect of Willowfountain Road, Pietermaritzburg.

Please take note and ensure that the following is carried forward in your documents, that in respect of Eskom's powerlines, no encroachments are permitted within the following in respect of our servitudes:

132kV lines = 18 metres on either side of the centre line  
88kV lines = 16 metres on either side of the centre line  
33kV lines = 16 metres on either side of the centre line  
22kV lines = 12 metres on either side of the centre line  
11kV lines = 12 metres on either side of the centre line

Eskom's underground cables are usually layed 1 metre to 1.5 metres, when excavation is anticipated, ensure you check with our offices for cable positions.

Prior to the approval of the development, the owner shall lodge with the development Administration, for approval by the Minister, a certificate furnished by Eskom, the local municipality or other supplier of electricity for the benefit of the inhabitants of the development, to the effect that all substation servitudes required by it will be provided and have been depicted on the general plan.

Trees should not be planted within their horizontal falling distance of the power lines.

The roads crossing under the power lines may only cross in safe areas where, what is known as "broken conductor conditions" as defined in the Occupational Health & Safety Act 85 of 1993, are met. Generally, roads located within 10 m of wood poles are within legal safety requirements. This will be applicable to all property entrances adjoining existing roads.

The ground clearance, as prescribed by the law has to be maintained, the natural ground levels within the servitude area are therefore to be retained, and no soil, or any other material, may be stock piled within the servitude area.

Regarding the use of machinery, the operators are seldom informed as to the extreme danger of using equipment in close proximity to the live overhead conductors. No soil is to be disturbed, by any civil work, within a 3 m radius of any pole or stay wire. Where civil work is done outside of this radius the soil must be suitably sloped and protected so as not to cause erosion in or onto the 3 metre radius of undisturbed soil.

Please note that the applicable building restrictions either side of any existing powerline must be adhered to when planning new buildings or developments on the property.

Please further take note that the costs of relocations of any of Eskom's infrastructure, will be for the account of the developer.

Applications can be lodged via Eskom's call centre on 086 003 7566.

Please further take note that if any 275kV, 400kV or 765 kV Lines are involved, you need to send a copy of the application to Eskom's transmission division at Megawatt Park.

Regards

Michelle

Eskom Holdings SOC Limited

Lands and Rights Section

Land Development Department

Telkom – Re BID

02-04-2013 Network Infrastructure Provisioning, Wayleave Management, Eastern Region  
Sthembiso Mchunu

Ref. No:EWIP\_NKWP0578\_13

Basic Assessment Process for the Proposed Willowfountain Road Upgrade

Your notification dated 19 March 2013 refers.

In reference to the Electronic Communications Act No. 36 of 2005.

No telecommunication infrastructure owned by Telkom SA is affected.

Approval of the proposed is valid for six months. If construction has not yet commenced within this time period then the file must be resubmitted for approval. Any changes and deviations from the original planning during construction must be immediately communicated to this office.

Yours faithfully.

Raymond Couch  
Operations Manager.

## SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the 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. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

Msunduzi Municipality Stream crossings

1. The assessment must be informed by the Msunduzi Environmental Management Framework (EMF) and Conservation Plan (C-Plan) Whilst reference is made in the BID to the EKZNW C-Plan, the Msunduzi C-Plan and EMF are at a higher resolution and must therefore inform this study. The Msunduzi EMF and C-Plan must be referred to in the Basic Assessment Report and the site specific reports generated from the EMF and C-Plan must be attached as Annexures to the Basic Assessment Report. In addition any environmental constraints relating to the site raised by the EMF must be specifically evaluated and addressed.

a. Particular attention should be paid to the management of storm water from the road surface. The adjacent Willowfountain Stream is already degraded and incised possibly as a result of increased storm water flows and measures must therefore be put in place to limit the impact of storm water discharges into the stream.

b. The EMPr must include measures to control alien invasive plants emerging within areas disturbed by the construction activities, particularly at the watercourse crossings.

2. The Edendale area is an historical landscape associated with Christian families of Griqua, Rolong, Sotho, Tlokwa, Hlubi and Swazi origin that saw its status of a successful African village threatened by urban sprawl (Pietermaritzburg labourers) in the 1930s and 1940s. This renders the area a rich cultural landscape where significant sites have been identified. It is noted that this particular development is an access road upgrade into an all-weather road within existing transformed servitude and is therefore not a threat to cultural resources, and AMAFA, therefore, has no objection to the proposed development **strictly within the existing transformed servitude**. Any deviation beyond 2m of the existing servitude is rendered a new road and will automatically trigger a Heritage Impact Assessment as previous surveys identified several graves and a cemetery along the road. The developer is required to ensure that the construction team operates within the existing servitude to avoid inadvertent damage to graves. You are also required to adhere to the below-mentioned standard conditions:

Conditions:

- i. AMAFA should be contacted if any heritage objects are identified during earthmoving activities and all development should cease until further notice.
- ii. No structures older than sixty years or parts thereof are allowed to be demolished altered or

extended without a permit from AMAFA.

iii. No activities are allowed within 50m of a site, which contains rock art.

iv. AMAFA should be contacted if any graves are identified during construction and the following procedure is to be followed:

stop construction

report finding to local police station

report to AMAFA to investigate.

Should you have any further queries, please contact the designated official using the case number quoted above in the case header.

3. WESSA does not wish to register as an I&AP and they are satisfied that should a site specific EMP be implemented for each of the stream crossing significant damage to environment can be avoided.

WESSA support the construction of formalized crossings and improved stormwater control.

4. DWA require that the following matters be addressed:

(1) Management of solid waste generated during the construction phase and post construction phase.

(2) Management of any hazardous waste material generated pre and post construction.

(3) Identification of any environmental sensitive areas and water resources such as wetlands, streams, rivers, etc, as well as possible pollution impacts and mitigation measures of such water resources.

(4) Stormwater management plan/system including the prevention of erosion and sedimentation.

(5) Sewage treatment and disposal i.e. waste water management. This should also include the type of toilet facilities to be provided for construction workers.

(6) Spill contingency plans

(7) Environmental Management Plan

In addition the following points need to be taken into consideration:

- The removal of any indigenous trees would need to be authorised by the Department of Forestry, Fisheries and Agriculture.

- Mr Norman Ward from the Water Resources Management Section of this Department must be contacted on (031) 336 2700 in order to obtain the necessary authorisations (licence, etc.), should there be any alteration to the bed, banks, course or characteristics of a watercourse or any impedance or diversion of flow of a watercourse as well as any abstraction and/or storage of water.

- Please note that all wetland areas must be delineated according to this Departments guideline entitled "A practical field procedure for identification and delineation of wetlands and riparian areas." (DWAf, 2005).

This Department awaits required information in order to provide more detailed comments.

Please do not hesitate to contact this office should you have any concerns, comments or queries.

5. DOT requested/noted the following:

- When communicating with this office, please supply the above mentioned file reference.

- In terms of the KwaZulu-Natal Provincial Road Act No. 4 of 2001 this Department has no objections to the abovementioned PROPOSED ROAD UPGRADE.

- This approval shall not exempt the applicant from the provisions of any other law.



6. Eskom require that the following points be included in the report:

The following items must be carried forward in your documents, that in respect of Eskom's powerlines, no encroachments are permitted within the following in respect of our servitudes:

132kV lines = 18 metres on either side of the centre line  
88kV lines = 16 metres on either side of the centre line  
33kV lines = 16 metres on either side of the centre line  
22kV lines = 12 metres on either side of the centre line  
11kV lines = 12 metres on either side of the centre line

- Eskom's underground cables are usually layed 1 metre to 1.5 metres, and when excavation is anticipated, cable positions must be checked with Eskom offices.

- The owner shall lodge with the development Administration, for approval by the Minister, a certificate furnished by Eskom, the local municipality or other supplier of electricity for the benefit of the inhabitants of the development, to the effect that all substation servitudes required by it will be provided and have been depicted on the general plan, prior to the approval of the development.

- Trees should not be planted within their horizontal falling distance of the power lines.

- The roads crossing under the power lines may only cross in safe areas where, what is known as "broken conductor conditions" as defined in the Occupational Health & Safety Act 85 of 1993, are met. Generally, roads located within 10 m of wood poles are within legal safety requirements. This will be applicable to all property entrances adjoining existing roads.

The ground clearance, as prescribed by the law has to be maintained, the natural ground levels within the servitude area are therefore to be retained, and no soil, or any other material, may be stock piled within the servitude area.

- For the use of machinery, the operators are seldom informed as to the extreme danger of using equipment in close proximity to the live overhead conductors. No soil is to be disturbed, by any civil work, within a 3 m radius of any pole or stay wire. Where civil work is done outside of this radius the soil must be suitably sloped and protected so as not to cause erosion in or onto the 3 metre radius of undisturbed soil.

- It must be noted that the applicable building restrictions either side of any existing powerline must be adhered to when planning new buildings or developments on the property.

- It must also be noted that the costs of relocations of any of Eskom's infrastructure, will be for the account of the developer.

- Applications can be lodged via Eskom's call centre on 086 003 7566.

- It must be noted that if any 275kV, 400kV or 765 kV Lines are involved, a copy of the application must be sent to Eskom's transmission division at Megawatt Park.

7. Telkom require the following to be included:

- No telecommunication infrastructure owned by Telkom SA is affected.

- Approval of the proposed is valid for six months. If construction has not yet commenced within this time period then the file must be resubmitted for approval. Any changes and deviations from the original planning during construction must be immediately communicated to this office.

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached as Appendix E to this report):

Please refer also to Comments and Response report attached to this report as Appendix E.

Msunduzi Municipality Stream crossings

1. The assessment has been informed by the Msunduzi Environmental Management Framework (EMF) and Conservation Plan (C-Plan) together with the site specific reports generated from the EMF and C-Plan which are attached as Annexures to the draft Basic Assessment Report. Environmental constraints relating to the site raised by the EMF have been specifically evaluated and addressed.

a. Stormwater Management: management of storm water from the road surface has been included in the draft Basic Assessment Report. It is noted that the adjacent Willowfontain Stream is already degraded and incised possibly as a result of increased storm water flows and measures have therefore been included in the draft Basic Assessment Report to help limit the impact of storm water discharges into the stream.

b. An EMPr has been drafted and includes measures to control alien invasive plants emerging within areas disturbed by the construction activities, particularly at the watercourse crossings.

2. It has been noted in the report, that the Edendale area is an historical landscape associated with Christian families of Griqua, Rolong, Sotho, Tlokwa, Hlubi and Swazi origin that saw its status of a successful African village threatened by urban sprawl (Pietermaritzburg labourers) in the 1930s and 1940s, which renders the area a rich cultural landscape where significant sites have been identified. It has also been noted that this particular development is an access road upgrade into an all-weather road within existing transformed servitude and is therefore not a threat to cultural resources, and AMAFA, therefore, has no objection to the proposed development strictly within the existing transformed servitude; however, any deviation beyond 2m of the existing servitude is rendered a new road and will automatically trigger a Heritage Impact Assessment as previous surveys identified several graves and a cemetery along the road. It has also been noted in the report that the developer is required to ensure that the construction team operates within the existing servitude to avoid inadvertent damage to graves, and in addition to this the following standard conditions have been imposed:

Conditions:

i. AMAFA should be contacted if any heritage objects are identified during earthmoving activities and all development should cease until further notice.

ii. No structures older than sixty years or parts thereof are allowed to be demolished altered or extended without a permit from AMAFA.

iii. No activities are allowed within 50m of a site, which contains rock art.

iv. AMAFA should be contacted if any graves are identified during construction and the following procedure is to be followed:

stop construction

report finding to local police station

report to AMAFA to investigate.

The project involves the construction of a 1.6km, 6m wide black top all-weather road complete with drainage and watercourse crossings, storm water drains and a pedestrian walkway. The road upgrade has been designed to align with the existing roads for the most part, there will be widening by 3 to 5 metres in certain areas, realignment of approximately 500m of road, the upgrading of four existing culverts, the realignment and upgrading of two hairpin bends/watercourse crossing points.

An HIA has, therefore, been commissioned for the project as the proposed road upgrade will extend beyond 2m of the existing road servitude in certain places.

3. A site specific EMPr has been drafted for the stream crossings, in order to help to avoid

significant damage to the environment, formalized crossing construction and improved stormwater control have been included.

4. The following matters required by DWA have been included and addressed in the draft Basic Assessment Report:

- (1) Solid waste management, including the management of solid waste generated during the construction phase and post construction phase.
- (2) Management of any hazardous waste material generated pre and post construction.
- (3) Identification of any environmental sensitive areas and water resources such as wetlands, streams, rivers, etc, as well as possible pollution impacts and mitigation measures of such water resources.
- (4) Stormwater management plan/system including the prevention of erosion and sedimentation.
- (5) Sewage treatment and disposal i.e. waste water management. This should also include the type of toilet facilities to be provided for construction workers.
- (6) Spill contingency plans
- (7) Environmental Management Plan

In addition the following points need to be taken into consideration:

- The removal of any indigenous trees would need to be authorised by the Department of Forestry, Fisheries and Agriculture.
- Mr Norman Ward from the Water Resources Management Section of this Department must be contacted on (031) 336 2700 in order to obtain the necessary authorisations (licence, etc.), should there be any alteration to the bed, banks, course or characteristics of a watercourse or any impedance or diversion of flow of a watercourse as well as any abstraction and/or storage of water.
- Please note that all wetland areas must be delineated according to this Departments guideline entitled "A practical field procedure for identification and delineation of wetlands and riparian areas." (DWAF, 2005).

The wetland delineation report has been compiled in accordance with the cited Department guidelines.

5. The following items as requested by DOT have been included in the Draft Basic Assessment report:

- In terms of the KwaZulu-Natal Provincial Road Act No. 4 of 2001, DOT has no objections to the abovementioned PROPOSED ROAD UPGRADE.
- This approval does not exempt the applicant from the provisions of any other law.

6. The following items have been included in the Draft Basic Assessment report, in response to comments received from Eskom:

- The Eskom information provided must be carried forward in the project reports and, in respect of Eskom's powerlines, no encroachments are permitted within the following in respect of Eskom servitudes:

132kV lines = 18 metres on either side of the centre line  
88kV lines = 16 metres on either side of the centre line  
33kV lines = 16 metres on either side of the centre line  
22kV lines = 12 metres on either side of the centre line  
11kV lines = 12 metres on either side of the centre line

- Eskom underground cables are usually laid at a depth of 1 metre to 1.5 metres, therefore, when excavation is anticipated, contractors must ensure and check with Eskom offices for cable positions.
- Prior to the approval of the development, the owner must lodge with the development Administration, for approval by the Minister, a certificate furnished by Eskom, the local municipality or other supplier of electricity for the benefit of the inhabitants of the development, to the effect that all substation servitudes required by it will be provided and have been depicted on the general plan.
- Trees should not be planted within their horizontal falling distance of the power lines.
- Any road crossing under power lines may only occur in safe areas where, what is known as “*broken conductor conditions*” as defined in the Occupational Health & Safety Act 85 of 1993, are met. Generally, roads located within 10 m of wood poles are within legal safety requirements. This will be applicable to all property entrances adjoining existing roads.
- The ground clearance, as prescribed by the law has to be maintained, the natural ground levels within the servitude area are therefore to be retained, and no soil, or any other material, may be stock piled within the servitude area.
- Machinery use on site, machinery operators must be properly informed as to the extreme danger of using equipment in close proximity to live overhead conductors. No soil is to be disturbed, by any civil work, within a 3 m radius of any pole or stay wire. Where civil work is done outside of this radius the soil must be suitably sloped and protected so as not to cause erosion in or onto the 3 metre radius of undisturbed soil.
- All applicable building restrictions either side of any existing powerline must also be adhered to when planning new buildings or developments on the property.
- The cost for the relocation of any of Eskom's infrastructure, will be for the account of the developer and applications must be lodged via Eskom's call centre on 086 003 7566.
- Where any 275kV, 400kV or 765 kV Lines are involved, a copy of the application must be sent to Eskom's transmission division at Megawatt Park.

7. Telkom require the following:

It is noted that Telkom have commented to state that no telecommunication infrastructure owned by Telkom SA is affected.

Telkom have also commented that this approval of the proposed is valid for six months, and if construction has not yet commenced within this time period then the file must be resubmitted for approval, and any changes or deviations from the original planning during construction must be immediately communicated to Telkom's offices.

## **2. 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**

### **2.1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN PHASE**

#### **a. Site alternatives**

List the potential impacts associated with site alternatives that are likely to occur during the planning and design phase:

#### **Alternative S1 (preferred alternative)**

## Basic Assessment Report

**Direct impacts:**

- Surveyors on site may damage vegetation in order to obtain line of sight / while walking around the site.
- Survey activities must be conducted within the existing road servitude, any deviation beyond 2m of the existing servitude is rendered a new road and will automatically trigger a Heritage Impact Assessment as previous surveys identified several graves and a cemetery along the road. The developer is required to ensure that the construction team operates within the existing servitude to avoid inadvertent damage to graves.

**Indirect impacts:**

- Damaged vegetation may take a while to recover, and this may facilitate the establishment of weeds / alien invasive sp.
- Erosion may result should damaged vegetation not recover.

**Cumulative impacts:**

- Less healthy and diverse composition of vegetation.
- Potential for soil erosion.

**Alternative S2 (if any)**

**Direct impacts:**

**Indirect impacts:**

**Cumulative impacts:**

**No-go alternative (compulsory)**

**Direct impacts:**

- No vegetation would be disturbed.
- The existing stream crossings would remain with no upgrade.
- Erosion potential would remain.
- Access to local households in the area, and the area in general, including schools, sportsfield/recreational areas and shops and the greater road network would remain poor.
- Negative impacts associated with the design and planning of the road would be avoided.
- There would be no potential negative impacts in terms of the graves and cemetery identified along the road.

**Indirect impacts:**

- The lack of improved access may reduce mobility thus also possibly reducing the potential economic growth in the area.
- Mobility of vehicles may be reduced and it may be difficult to establish utilities and amenities (e.g. electricity, water) in the area without constructing formal access roads.
- The 'status quo' would remain unchanged.
- There would be no impact on vegetation etc within the new road servitude.

**Cumulative impacts:**

By continually utilising an access road in poor condition, the road erosion may extend beyond the road width and residents may traverse the road edges and increase the extent of erosion. The formalisation of the roads will help reduce the occurrence of potholes, erosion ruts and water logged soils and assist in the management of stormwater and erosion issues in the affected area.

Indicate mitigation measures to manage the potential impacts listed above:

**Alternative S1**

**Alternative S2**

- Marking of survey points must be done with the Engineers approval.
- Vegetation clearing must be kept to a minimum during the survey operations.
- Survey work must remain within the existing servitude, any deviation beyond 2m of the existing servitude is rendered a new road and will automatically trigger a Heritage Impact

## Basic Assessment Report

Assessment as previous surveys identified several graves and a cemetery along the road. The developer is required to ensure that the construction team operates within the existing servitude to avoid inadvertent damage to graves.	
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### b. Process, technology, layout or other alternatives

List the impacts associated with any process, technology, layout or other alternatives that are likely to occur during the planning and design phase (please list impacts associated with each alternative separately):

There is no process, technology or layout alternative for the proposed road upgrade. The proposed road upgrade involves the upgrade of an existing gravel road and the upgrade of existing watercourse crossings and the proposed road layout has been designed with minimal changes to the existing vertical and horizontal alignment of the existing road, however, there will be widening by 3 to 5 metres in certain areas, realignment of approximately 500m of road, the upgrading of four existing culverts, and the realignment and upgrading of two hairpin bends/watercourse crossing points.

The watercourse crossing structures will be upgraded and designed to minimise impact on the streams and banks.

The project need and desirability is specific to the location that it is intended for. The proposed road upgrade and construction is machine intensive, involving the upgrade of an existing road, therefore, no technology alternatives have been considered. The proposed tar road is low maintenance, cost effective and has a relatively short installation period.

#### Alternative A1 (preferred alternative)

**Direct impacts:**

**Indirect impacts:**

**Cumulative impacts:**

#### Alternative A2 (if any)

**Direct impacts:**

**Indirect impacts:**

**Cumulative impacts:**

#### No-go alternative (compulsory)

The current *status quo* would remain unchanged and the erosion and stormwater runoff currently occurring on site would continue and potentially exacerbate. There would be no improved access for local residents in the area.

**Direct impacts:** None identified, however, the existing stream crossing structures would remain in place together with the existing gravel road.

**Indirect impacts:** None identified.

**Cumulative impacts:** None identified.

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1:	Alternative A2:

## 2.2. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION PHASE

### a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the construction phase:

#### Alternative S1 (preferred site)

##### **Direct impacts:**

- **Local traffic** and mobility of local people might be affected by construction activities.
- **Health and Safety** – Construction vehicles and activities could pose a safety risk to local residents and workers, strict control measures should be implemented.
- **Indigenous vegetation** may be disturbed and some may be completely destroyed. The four watercourse crossings have been identified as sensitive habitats.
- **Fauna** may be disturbed during the construction activities.
- **Hydrology** there may be an impact on stream flows during construction, however, the proposed road upgrade and the proposed watercourse crossing structures which will be fitted with culvert headwall details and splitter blocks on the outlet side have been designed to help to reduce water velocity and erosion/scour potential, together with a section of reno mattress protection below the headwall structure, should help to reduce erosion potential.
- **Soil** may be disturbed, and soil erosion may occur. Stormwater management associated with the proposed development should be incorporated into the site design and should take into consideration the erosion potential of the region.
- **Air pollution** including dust will likely be generated by activities during construction, but this will cease after construction is completed. Dust is currently a problem in dry conditions when vehicles travel along the existing informal road. Dust will be generated by the activity during construction but this may reduce to nil after construction.
- Spillages of **hazardous substances**, such as oil and diesel may occur.
- Incorrect disposal of construction **waste** may cause pollution, including ground and surface water pollution and pollution of neighbouring properties.
- **Noise** pollution may be generated by construction activities.
- Adjacent **graves** and the cemetery identified may be disturbed during construction works.
- **Social** - There may be an increased number of people in the area during the construction period.  
There will be improved access for local communities through the improvement of the existing local access road upgrade to a formal municipal black top all weather road.
- **Existing services** – There are existing water pipelines, sewers and stormwater drain servitudes and there are also telephone poles and power poles in the area. There are also large overhead powerlines in the study area. The servitudes for these services must be observed and no work may take place within these servitudes. Any disturbance to servitudes will need to be checked with the relevant service provider prior to work taking place. Eskom has provided details regarding any encroachment into Eskom servitudes.
- **Material sourcing** – Off-site environmental degradation may be caused as a result of the use of unpermitted materials sourcing.
- Improved access for local communities through the improvement of the local access road being upgraded to a formal gravel road.
- Improved stream crossing structures to allow free water flow of the affected streams.

##### **Indirect impacts:**

- The construction activities may result in a temporary closure of the existing access

road sections, hampering the mobility of the local residents and disrupting traffic passing through.

- Removal of indigenous vegetation may have an effect on local biodiversity and other species within the ecosystem.
- Disturbance of soil may result in increased soil erosion on the road flanks, notably during storm events.
- Storm water management associated with the proposed development should be incorporated into the site design and should take into consideration the erosion potential of the region.
- Improper management of waste may result in the pollution of local ground and surface water. Construction waste generated by the activity may pollute the area and even possibly the properties of the people living in the immediate surroundings.
- Road Safety – The proposed development may result in an increase in vehicle speeds along the route.
- Improved access may promote greater opportunity for traders to access local towns thus promoting economic growth in the area.
- Improved access will allow greater mobility in general for example it will facilitate access for utilities and service provisions and amenities such as electricity, water and emergency vehicles.

**Labour and materials** are to be sourced locally, wherever possible, which will help to promote **economic upliftment** during construction. Skills learnt by local labourers may be applied to future work opportunities.

**Cumulative impacts:**

**Road Safety** - The proposed road upgrade will result in the improvement of the existing access road of the Willowfountain area. Residents of Willowfountain would have improved access to their homes and the area in general, including schools, sportsfield/recreational areas and shops and the greater road network. This may result in increased traffic in the area, as well as increased numbers of vehicles and travelling speeds, however, at this stage this is unlikely to be at very significant levels. Site specific traffic management measures could be put in place to help manage this potential impact. There may be an increase in social interaction between homesteads and the local community which may have positive and negative cumulative impacts. These impacts should be considered and outlined in a project specific EMP.

**Alternative S2 (if any)**

**Direct impacts:**

**Indirect impacts:**

**Cumulative impacts:**

**No-go alternative (compulsory)**

**Direct impacts:**

- Access to the Willowfountain area and surrounding areas would remain poor.
- The lack of a proper access road may result in increased erosion of the existing road notably during the rainy season.
- Negative impacts associated with the construction of the road will be avoided. The 'status quo' would remain unchanged. The "rural" nature of the area and the "sense of place" would remain.

**Indirect impacts:**

- The lack of improved access will reduce mobility to residents of the Willowfountain area, thus possibly also reducing potential economic growth in the area.
- Mobility of vehicles may be reduced and it may be difficult to establish additional infrastructure.
- Emergency vehicle access would be limited.
- There would be a lack of economic development and there would be no benefit felt by the local community in terms of labour creation.

**Cumulative impacts:**



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Impacts such as soil erosion and surface water runoff may exacerbate as a result of the continued use of the existing gravel access road. There would also be no upgrade of existing stream crossing structures.

Indicate mitigation measures to manage the potential impacts listed above:

**Alternative S1**

**Alternative S2**

<b>Vegetation disturbance</b>	
<ul style="list-style-type: none"> <li>• Riparian vegetation and areas to be identified and demarcated (danger tape and fencing), and disturbances must be limited to the working corridor/road servitude only.</li> <li>• Only vegetation in the immediate vicinity of the construction site and the proposed road should be removed, and only directly prior to construction commencing.</li> <li>• Once construction has been completed, indigenous vegetation should be re-installed wherever possible over the disturbed area, and as close to area of source as possible.</li> <li>• All alien invasive vegetation which emerges should be removed according to accepted alien invasive plant removal techniques for each species for two years after the completion of the construction phase.</li> <li>• Any vegetation which is to be removed for post construction rehabilitation must be re-instated and replanted as soon as construction activities are complete. Seeding of suitable indigenous grasses must be effected on denuded areas and removed plant material re-planted as close to area of source as possible.</li> <li>• No “muthi” plants are to be removed.</li> <li>• The existing alien invasive plants that have established along the existing road edges, in particular in disturbed areas and in the vicinity of the four watercourse crossings, should be cut down and treated to help eradicate these weeds according to accepted alien invasive plant removal techniques for each species for two years after the completion of the construction phase and an ongoing programme to control and eradicate these alien invasive weeds along the proposed roadside upgrade, would, help to prevent further spread and infestation. Rehabilitation, (with a rehabilitation maintenance component), in these spaces with suitable indigenous vegetation will also assist greatly in reducing this problem.</li> <li>• Previous MOSS areas, now replaced as ESP areas have been identified on site. There is a Riparian corridor running along the eastern</li> </ul>	

portion of the road, from the start point of the proposed road upgrade up to Water course 1 crossing. Water course crossing 1, (please refer to Figure 7), is described as a Key Area, and on the Msunduzi C-Plan (Figure 5a), Site/Unit ID 14478 indicates Midlands Mistbelt Grassland and Dry Ngongoni Veld, together with the Natal Banana Frog, the African Striped Weasel and the Natal Cycad. These sensitive areas are No-go areas, together with the four watercourse crossings, which are all classified as sensitive areas.

- Construction workers must not be permitted to gain access to these sensitive areas and adequate fencing and controls must be put in place to manage all staff movement.
- No indigenous trees to be cut, trimmed, damaged or removed under any circumstances, any such activity requires a license from DAFF.

**Disturbance of soil**

- Erosion prevention measures should be taken into consideration in the design of the construction camp/s and access roads and the road itself. Designated pedestrian access systems should also be provided.
- All topsoil to be removed from the road alignment (where new), and stored in a designated area and protected from runoff by diversion berms wherever necessary. Topsoil stockpiles should also be seeded to minimise the erosion potential.
- Topsoil stockpiles are not to exceed 1.5m in order to help maintain soil viability.
- Drainage embankments are only to be disturbed where required and any such activities are to be kept to a minimum.

**Watercourse / Drainage Line crossing**

- The proposed upgraded bridging/culvert structures should be designed to accommodate seasonal peak flow and to allow a near natural flow regimen so as not to impact on the downstream system of the stream.
- Drainage areas should be avoided wherever possible.
- River flow is not to be obstructed or blocked or damaged during the upgrading of the river crossings.
- The construction area should be kept to a minimum when working in the watercourse

crossings.

- Construction within the watercourse areas should be scheduled to take place during low rainfall months (if feasible).
- Any banks disturbed during the construction process must be adequately retained and rehabilitated.
- Any outfall points must be designed to include treatment of the soil below with either gabion baskets, stone pitching, stilling pond or other mechanism to help reduce erosion potential and dissipate water flow and velocity, or as per Engineering specifications.
- Drainage line crossings/culvert design to be designed to allow for animal passage and to allow habitat linkages.

**Air Pollution and Dust**

- Burning of waste material must not take place.
- Fumes (or black smoke) emitted from vehicles and equipment / appliances must be mitigated & monitored and action should be taken to avoid nuisance to the public. All construction vehicles must be fitted with operational silencers and should be regularly serviced so as not to emit smoke. Proof of maintenance records would be required.
- Dust suppression by watering can assist significantly to help reduce dust problems. Watering down will form part of the gravel road construction process.

**Spillages of hazardous substances**

- Should any hazardous materials be spilt, the soil/substrate onto which they are spilt must be cleaned up immediately and removed to an approved waste site. Proper site records must be kept of any spillages.
- Vehicles must not be serviced on site.
- Drip trays must be provided for leaky vehicles left on site, and these vehicles must be repaired immediately.
- Hazardous substances are those that are potentially poisonous, flammable, carcinogenic, or toxic. Some examples are: diesel, petrol, oil, bitumen, cement, solvent based paints, lubricants, explosives, drilling fluids, pesticides, herbicides, LPG.
- Hazardous storage and refuelling areas must be 110% bunded with an impermeable liner to protect groundwater quality.

- Fuel tanks must meet relevant specifications and be elevated so that leaks are easily detected. Fuel tanks must be 110% banded.
- Storage areas containing hazardous substance/materials must be clearly sign posted.
- The proximity of houses, schools and powerlines etc. should be taken into consideration when deciding on storage areas for any hazardous substances.
- Residents living adjacent to the construction sites must be notified of the existence of the hazardous storage area.
- Staff dealing with these materials/substances must be aware of their potential impacts and follow appropriate safety measures. This must be monitored (ECO function). Staff must also be aware of how to deal with any incident that might occur, relating to any hazardous materials/substances stored or used on site. Any spillages must adhere to the OHSA.

**Waste**

- No littering or illegal dumping of any waste material to take place on site and/or as the result of construction activities.
- The contractor shall ensure that no littering occurs in the work or camp areas.
- Products, equipment and materials packaging, paper, containers and plastics must be carefully managed to help avoid any dispersal by wind or other. These waste products to be sorted for recycling purposes.
- Provision must be made for waste collection facilities (i.e. bins or refuse plastic bags) and the waste must be disposed of at a registered waste site.
- No burning of waste will be permitted on site, no waste disposal holes or trenches may be constructed.
- Ensure that all hazardous substances (i.e. oil contaminated soil or water etc.) are labelled and disposed of at a landfill site licensed to accept such hazardous waste. All waste disposed of during construction must be documented during construction. Active records must be kept with references and verification documentation.
- Bins and/or skips to be provided at convenient intervals for disposal of waste within the construction camp.
- Bins should have liner bags for efficient control and safe disposal of waste.
- All bins and skips must be fitted with lids – their lids/covers must be monkey proof.

- Where water borne sewerage is not available, temporary chemical toilets must be provided by a company approved by the Engineer. Chemical toilets to be provided at a ratio of 1:20 with regular servicing weekly/fortnightly, (as deemed necessary to maintain hygienic standards), in areas where work teams are located. These toilets are to be within easy access to the workers onsite. They are to be located away from sensitive natural areas.
- The construction of pit latrines or “long drop” toilets is forbidden.
- Under no circumstances may open areas or the surrounding bush or degraded or built up areas be used as a toilet facility. An environmental awareness program and training must be provided to all workers.

**Noise will be generated by the activity**

- Construction vehicles must be regularly serviced to ensure a level of minimum emissions.
- Where necessary workers are to wear ear protection.
- No construction activity to take place from 5pm to 8am, or on weekends. This is a residential area.

**Graves and cemetery sites may be disturbed during construction works**

- Any identified graves and cemetery sites in close proximity to the proposed road layout must be ascribed an appropriate buffer zone and fenced/cordoned off and marked with danger tape. No construction activities may occur near to any identified graves or cemetery areas.
- All members of the construction team and personnel working on site must be made aware of the graves and cemetery areas and the protection requirements through regular awareness training. These areas will be a no-go areas.
- No removal of artefacts or alterations of any heritage structure will be allowed within this buffer zone.
- No construction activities may occur near to the identified graves and cemetery sites.
- Should construction activities uncover or expose any archaeological or historical residues, construction activities must cease immediately pending an evaluation by the heritage authorities, in line with the KwaZulu-Natal Heritage Act.

**Fauna will be displaced**

- Killing of fauna for any reason will not be allowed. Any persons found doing so will be removed from site.
- Disturbance to all existing fauna and their respective habitats must be minimised wherever possible.
- Previous MOSS areas, now replaced as ESP areas have been identified on site. There is a Riparian corridor running along the eastern portion of the road, from the start point of the proposed road upgrade up to Water course 1 crossing. Water course crossing 1, (please refer to Figure 7), is described as a Key Area, and on the Msunduzi C-Plan (Figure 5a), Site/Unit ID 14478 indicates Midlands Mistbelt Grassland and Dry Ngongoni Veld, together with the Natal Banana Frog, the African Striped Weasel and the Natal Cycad.
- Construction workers must not be permitted to gain access to these sensitive areas and adequate fencing and controls must be put in place to manage all staff movement. These sensitive areas are No-go areas, together with the four watercourse crossings, which are all classified as sensitive areas.

**Increased social impacts - Environmental Education**

- Ensure that all site personnel have a basic level of environmental awareness training. The Contractor must submit a proposal for this training to the ECO for approval prior to the commencement of construction.
- Construction workers should be made aware that they are not to make excessive noise (e.g. shouting/hooting).
- The need for a 'clean site' policy must be explained to the construction workers.
- A general regard for the social and ecological well-being of the site and adjacent areas is expected of the site staff. Workers need to be made aware of the following general rules:
  - a. No alcohol / drugs to be present on site.
  - b. No firearms allowed on site or in vehicles transporting staff to / from site (unless used by security personnel).
  - c. Prevent excessive noise.
  - d. Prevent unsocial behaviour.
  - e. No harvesting of firewood or plants for 'muthi' from the site or from the adjacent areas.
  - f. Construction staff are to make use of the

facilities provided for them, as opposed to ad-hoc alternatives, (e.g. fires for cooking, the use of surrounding areas / bush as a toilet is forbidden). This is a predominantly natural veld/grassland area and there are major risks associated with any fires in the area. No open fires are to be made

- g. Trespassing on private/commercial properties adjoining the site is forbidden.
- h. Driving under the influence of alcohol is prohibited.
- i. This is a residential area, and there are schools located, one in the eastern section of the road, approximately 400m from the start point of the road, on the northern side, the second to the south of the road, approximately 250m away. Construction workers are to be made aware of the potential for harm to occur to local residents.
- j. Pedestrians utilise this road on a daily basis and construction workers must ensure that all road users are provided safe access routes and construction workers must be made aware of the risks to pedestrians from their actions.

**Storm water runoff**

- The period that stripped areas are left open to exposure should be minimised wherever possible, particularly since work is along and across sensitive watercourses and watercourse crossings. Care must be taken to ensure that lead times are not excessive.
- Wind screening and stormwater control must be undertaken to prevent soil loss from the site where required.
- Procedures that are in place to conserve topsoil during the construction phase of the project are to be applied to the set up phase, i.e. topsoil is to be conserved while providing access to the site and setting up the construction camp.

**Stormwater Damage Mitigation**

- To help prevent stormwater damage, the increase in storm water runoff resulting from the construction activities must be estimated and the drainage system designed accordingly.
- During site establishment, stormwater culverts and drains must be located and

<p>covered with metal grids to prevent blockages where deemed necessary by the Engineer.</p> <ul style="list-style-type: none"><li>• Temporary cut off drains and berms may be required to capture stormwater and promote infiltration.</li><li>• During construction, un-channelled stormwater flow must be controlled to help prevent soil erosion. Where large areas of soil are left exposed, rows of straw / hay or bundles of cut vegetation should be dug into the soil in contours to slow surface wash and capture eroded soil. The spacing between rows will be dependent upon slope.</li><li>• Any site access spaces should also be shaped as described above to help reduce stormwater runoff.</li><li>• Stormwater cut off drains must be incorporated into the road design to help reduce the erosion potential of stormwater runoff.</li><li>• Site access roads should also be shaped as described above to help reduce the potential for stormwater runoff.</li></ul> <p><b>Traffic safety</b></p> <ul style="list-style-type: none"><li>• Traffic management and control systems to be put in place as necessary.</li><li>• Construction vehicles to adhere to the speed limit at all times, where necessary speed bumps to be installed to help ensure this.</li><li>• Traffic calming measures should be employed during the construction phase.</li><li>• Proper traffic control mechanisms are to be put in place to protect school children, pedestrians and road users in general during both construction and operational phases. This is a residential area, and there are schools located, one in the eastern section of the road, approximately 400m from the start point of the road, on the northern side, the second to the south of the road, approximately 250m away. Pedestrians utilise this road on a daily basis and safe access routes must be provided for them during both construction and operational phases.</li></ul> <p><b>Services and Servitude Conditions</b></p> <p><b>Eskom</b></p> <ul style="list-style-type: none"><li>• Eskom Servitude Conditions: no encroachments are permitted within the following in respect of our servitudes:</li><li>• 132kV lines = 18 metres on either side of the centre line</li></ul>	
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- 88kV lines = 16 metres on either side of the centre line
- 33kV lines = 16 metres on either side of the centre line
- 22kV lines = 12 metres on either side of the centre line
- 11kV lines = 12 metres on either side of the centre line
- Eskom's underground cables are usually laid 1 metre to 1.5 metres, when excavation is anticipated, ensure you check with our offices for cable positions.
- Prior to the approval of the development, the owner shall lodge with the development Administration, for approval by the Minister, a certificate furnished by Eskom, the local municipality or other supplier of electricity for the benefit of the inhabitants of the development, to the effect that all substation servitudes required by it will be provided and have been depicted on the general plan.
- Trees should not be planted within their horizontal falling distance of the power lines.
- The roads crossing under the power lines may only cross in safe areas where, what is known as "broken conductor conditions" as defined in the Occupational Health & Safety Act 85 of 1993, are met. Generally, roads located within 10 m of wood poles are within legal safety requirements. This will be applicable to all property entrances adjoining existing roads.
- The ground clearance, as prescribed by the law has to be maintained, the natural ground levels within the servitude area are therefore to be retained, and no soil, or any other material, may be stock piled within the servitude area.
- Regarding the use of machinery, the operators are seldom informed as to the extreme danger of using equipment in close proximity to the live overhead conductors. No soil is to be disturbed, by any civil work, within a 3 m radius of any pole or stay wire. Where civil work is done outside of this radius the soil must be suitably sloped and protected so as not to cause erosion in or onto the 3 metre radius of undisturbed soil.
- Please note that the applicable building restrictions either side of any existing powerline must be adhered to when planning new buildings or developments on the property.

- Please further take note that the costs of relocations of any of Eskom's infrastructure, will be for the account of the developer.
- Applications can be lodged via Eskom's call centre on 086 003 7566.
- Please further take note that if any 275kV, 400kV or 765 kV Lines are involved, you need to send a copy of the application to Eskom's transmission division at Megawatt Park.

**Telkom**

- In reference to the Electronic Communications Act No. 36 of 2005.
- No telecommunication infrastructure owned by Telkom SA is affected.
- Approval of the proposed is valid for six months. If construction has not yet commenced within this time period then the file must be resubmitted for approval. Any changes and deviations from the original planning during construction must be immediately communicated to this office.
- If Telkom any infrastructure is affected and needs to be relocated, such costs would be for the customer's account.
- Kindly inform Telkom SA in writing if infrastructure needs to be relocated. If Telkom plant is affected. If any Telkom infrastructure is affected and needs to be relocated, such costs would be for the customer's account.
- Telkom SA to be informed in writing if infrastructure needs to be relocated.

**Materials sourcing**

- Materials for construction activities must be sourced in a legal and sustainable way to prevent off-site environmental degradation.
- Contractors to prepare a source statement indicating the sources of all materials (including topsoil, sands, natural gravels, crushed stone, asphalt, clay liners etc.) and submit these to the Engineers for approval prior to commencement of any work.
- Where possible, a signed document from the supplier of natural materials should be obtained confirming that they have been obtained in a sustainable manner and in compliance with the relevant legislation.
- Where materials are borrowed (mined) proof must be provided of authorisation to utilise these materials from the landowner / mineral rights owner and the Department of Minerals and Energy.

**b. Process, technology, layout or other alternatives**

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List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the construction phase (please list impacts associated with each alternative separately):

**There is no process, technology or layout alternative for the proposed road upgrade. The proposed road upgrade involves the upgrade of an existing gravel road and the upgrade of existing watercourse crossings and the proposed road layout has been designed with minimal changes to the existing vertical and horizontal alignment of the existing road, however, there will be widening by 3 to 5 metres in certain areas, realignment of approximately 500m of road, the upgrading of four existing culverts, and the realignment and upgrading of two hairpin bends/watercourse crossing points.**

**The watercourse crossing structures will be upgraded and designed to minimise impact on the streams and banks.**

**The project need and desirability is specific to the location that it is intended for. The proposed road upgrade and construction is machine intensive, involving the upgrade of an existing road, therefore, no technology alternatives have been considered. The proposed tar road is low maintenance, cost effective and has a relatively short installation period.**

### Alternative A1 (preferred alternative)

**Direct impacts:** The impacts associated with the preferred road layout will be the same as those listed under S1, as there is no process, technology or layout alternative. The project need and desirability is specific to the location that it is intended for.

**Indirect impacts:**

The impacts associated with the preferred road layout will be the same as those listed under S1, as there is no process, technology or layout alternative. The project need and desirability is specific to the location that it is intended for.

**Cumulative impacts:**

The impacts associated with the preferred road layout will be the same as those listed under S1, as there is no process, technology or layout alternative. The project need and desirability is specific to the location that it is intended for.

### Alternative A2

**Direct impacts:**

**Indirect impacts:**

**Cumulative impacts:**

### No-go alternative (compulsory)

**Direct impacts:** None of the abovementioned impacts will occur. (Please refer to S1)  
The current stormwater and runoff issues would remain. The road surface may continue to deteriorate, soil erosion would continue and road safety for road users would remain unimproved. Access for local residents would also not be improved.

**Indirect impacts:** None of the abovementioned impacts will occur. (Please refer to S1)  
The current stormwater and runoff issues would remain. The road surface may continue to deteriorate, soil erosion would continue and road safety for road users would remain unimproved. Access for local residents would also not be improved.

**Cumulative impacts:** None of the abovementioned impacts will occur. (Please refer to S1)  
The current stormwater and runoff issues would remain. The road surface may continue to deteriorate, soil erosion would continue and road safety for road users would remain unimproved. Access for local residents would also not be improved.

Indicate mitigation measures to manage the potential impacts listed above:

## Basic Assessment Report

Alternative A1:

Alternative A2:

Mitigation measures will be as per mitigation measures for Alternative S1.	
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### 2.3. IMPACTS THAT MAY RESULT FROM THE OPERATIONAL PHASE

#### a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the operational phase:

##### Alternative S1 (preferred alternative)

###### **Direct impacts:**

- Local pedestrian traffic safety may be at risk with the additional vehicles on the road and increased vehicle speeds.
- Soil erosion may occur if sufficient stormwater control measures are not put in place.
- Improved access for the local communities and municipal services.
- Existing graves and cemetery sites identified will need to be afforded appropriate buffer zones and adequately fenced off.
- Alien invasive plant material may establish during the operational phase owing to new areas of disturbance.

###### **Indirect impacts:**

- The proposed development may result in an increase in vehicle speeds along the route; this may in turn increase safety risks to drivers, local pedestrians and local livestock.
- Improved access may promote greater opportunity for traders to access local towns thus potentially promoting economic growth in the area.
- Improved access may help facilitate access for additional infrastructure and economic development.
- The proposed road upgrade will result in the improvement of the existing access roads of Willowfontain.
- Residents of Willowfontain would have improved access to their homes and the wider road network.
- There may be an increase in traffic in the area owing to the improved accessibility.
- Improved access may promote greater opportunity for traders to access local towns thus promoting economic growth in the area.
- Improved access will allow greater mobility in general for example it will facilitate access for utilities and service provisions and amenities such as electricity, water and emergency vehicles.

###### **Cumulative impacts:**

The proposed road upgrade should result in the improvement of the existing road and the link of this road to the wider road network. This indirect cumulative impact may also have far reaching social impacts, where local people are in greater and more frequent contact with visitors and access to public transport such as busses and taxis etc. is facilitated. There may be an increase in social interaction between homesteads and the local community which may have positive and negative cumulative impacts.

##### Alternative S2 (if any)

###### **Direct impacts:**

###### **Indirect impacts:**

###### **Cumulative impacts:**

**No-go alternative (compulsory)**

**Direct impacts:**

None of the abovementioned impacts will occur.

**Indirect impacts:**

None of the abovementioned impacts will occur.

**Cumulative impacts:**

None of the abovementioned impacts will occur.

Indicate mitigation measures to manage the potential impacts listed above:

**Alternative S1**

**Alternative S2**

<ul style="list-style-type: none"> <li>• The road design must allow pedestrians sufficient space to move parallel to the road without affecting vehicle traffic flow.</li> <li>• Stormwater cut off drains must be incorporated into the road design to help reduce the erosion potential of stormwater runoff.</li> <li>• Speed limit road signs and pedestrian/school children crossing caution signs must be erected as necessary along the road length.</li> <li>• Alien invasive plant management programme should continue into the operation phase to help ensure the successful rehabilitation of all re-vegetated areas.</li> </ul>	
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**b. Process, technology, layout or other alternatives**

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the operational phase (please list impacts associated with each alternative separately):

There is no process, technology or layout alternative for the proposed road upgrade. The proposed road upgrade involves the upgrade of an existing gravel road and the upgrade of existing watercourse crossings and the proposed road layout has been designed with minimal changes to the existing vertical and horizontal alignment of the existing road, however, there will be widening by 3 to 5 metres in certain areas, realignment of approximately 500m of road, the upgrading of four existing culverts, and the realignment and upgrading of two hairpin bends/watercourse crossing points.

The watercourse crossing structures will be upgraded and designed to minimise impact on the streams and banks.

The project need and desirability is specific to the location that it is intended for. The proposed road upgrade and construction is machine intensive, involving the upgrade of an existing road, therefore, no technology alternatives have been considered. The proposed tar road is low maintenance, cost effective and has a relatively short installation period.

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### Alternative A1 (preferred alternative)

**Direct impacts:** The impacts associated with the preferred road layout will be the same as those listed under S1, as there is no process, technology or layout alternative. The project need and desirability is specific to the location that it is intended for.

**Indirect impacts:** The impacts associated with the preferred road layout will be the same as those listed under S1, as there is no process, technology or layout alternative. The project need and desirability is specific to the location that it is intended for.

**Cumulative impacts:** The impacts associated with the preferred road layout will be the same as those listed under S1, as there is no process, technology or layout alternative. The project need and desirability is specific to the location that it is intended for.

### Alternative A2

**Direct impacts:**

**Indirect impacts:**

**Cumulative impacts:**

### No-go alternative (compulsory)

**Direct impacts:** None of the abovementioned impacts will occur. (Please refer to S1)  
The current stormwater and runoff issues would remain. The road surface may continue to deteriorate, soil erosion would continue and road safety for road users would remain unimproved. Access for local residents would also not be improved.

**Indirect impacts:** None of the abovementioned impacts will occur. (Please refer to S1)  
The current stormwater and runoff issues would remain. The road surface may continue to deteriorate, soil erosion would continue and road safety for road users would remain unimproved. Access for local residents would also not be improved.

**Cumulative impacts:** None of the abovementioned impacts will occur. (Please refer to S1)  
The current stormwater and runoff issues would remain. The road surface may continue to deteriorate, soil erosion would continue and road safety for road users would remain unimproved. Access for local residents would also not be improved.

Indicate mitigation measures to manage the potential impacts listed above:

#### Alternative A1

#### Alternative A2

Mitigation measures will be as per mitigation measures for Alternative S1.	
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## 2.4. IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING OR CLOSURE PHASE

The proposal involves a road upgrade, the installation of stormwater drains and bridging/culvert structures at the watercourse crossings. The scenario of decommissioning the proposed road upgrade is unlikely.

### a. Site alternatives

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List the potential impacts associated with site alternatives that are likely to occur during the decommissioning or closure phase:

### Alternative S1 (preferred alternative)

**Direct impacts:**

The scenario of decommissioning the proposed road upgrade is unlikely.

**Indirect impacts:**

The scenario of decommissioning the proposed road upgrade is unlikely.

**Cumulative impacts:**

The scenario of decommissioning the proposed road upgrade is unlikely.

### Alternative S2

**Direct impacts:**

**Indirect impacts:**

**Cumulative impacts:**

### No-go alternative (compulsory)

**Direct impacts:**

The scenario of decommissioning the proposed road upgrade is unlikely.

**Indirect impacts:**

The scenario of decommissioning the proposed road upgrade is unlikely.

**Cumulative impacts:**

The scenario of decommissioning the proposed road upgrade is unlikely.

Indicate mitigation measures to manage the potential impacts listed above:

#### Alternative S1

#### Alternative S2

The scenario of decommissioning the proposed road upgrade is unlikely.	
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### b. Process, technology, layout or other alternatives

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the decommissioning or closure phase (please list impacts associated with each alternative separately):

**The proposed road upgrade involves the upgrade of an existing gravel road and an upgrade of existing watercourse crossings. The scenario of decommissioning the proposed road upgrade is unlikely.**

### Alternative A1 (preferred alternative)

**Direct impacts:**

The scenario of decommissioning the proposed road upgrade is unlikely.

**Indirect impacts:**

The scenario of decommissioning the proposed road upgrade is unlikely.

**Cumulative impacts:**

The scenario of decommissioning the proposed road upgrade is unlikely.

### Alternative A2

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<b>Direct impacts:</b>
<b>Indirect impacts:</b>
<b>Cumulative impacts:</b>

<b>No-go alternative (compulsory)</b>
<p><b>Direct impacts:</b> The scenario of decommissioning the proposed road upgrade is unlikely.</p> <p><b>Indirect impacts:</b> The scenario of decommissioning the proposed road upgrade is unlikely.</p> <p><b>Cumulative impacts:</b> The scenario of decommissioning the proposed road upgrade is unlikely.</p>

Indicate mitigation measures to manage the potential impacts listed above:

<b>Alternative A1</b>	<b>Alternative A2</b>
The scenario of decommissioning the proposed road upgrade is unlikely.	

### 2.5. PROPOSED MONITORING AND AUDITING

For each phase of the project and for each alternative, please indicate how identified impacts and mitigation will be monitored and/or audited.

<b>Alternative S1 (preferred site)</b>	<b>Alternative S2</b>
<p><b>Preliminary/Design Phase:</b> No Monitoring required.</p> <p><b>Construction Phase:</b> An Independent Environmental Control Officer should be contracted to undertake monthly site inspections for the duration of the construction phase of the proposed project. A monthly Environmental Audit report should be developed and copied to the DAEA with a final report at the end of the construction phase.</p> <p><b>Operational Phase</b> An annual Site Audit should be undertaken by an independent ECO, or alternatively the site will form part of the Msunduzi Municipality road network and be monitored as part of the Msunduzi Municipality routine road maintenance schedule.</p>	



## Basic Assessment Report

Alternative A1 (preferred alternative)

Alternative A2

As per S1 above.

### 3. 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 S1 (preferred site)

The proposed project should not result in impacts on the natural or social environment that are considered significant or that will result in undue risks. The nature and types of negative impacts do not outweigh the potential benefits of this project, provided the impacts listed above in Section E are correctly managed.

#### Type of Impacts

Negative impacts will likely occur in the biophysical, natural and social environment. As noted in this report soils and local watercourses may be impacted and due consideration of stormwater control and soil erosion prevention is required. The upgrade of the road and drainage crossing structures should help to reduce further erosion and improve the current situation of erosion and stormwater. Much of the site has already been transformed by the existing gravel road, thus the ecological sensitivity of the site is considered moderate to low, with the main focus areas being the watercourse crossings. The site does, however, fall within previous MOSS areas, now replaced as ESP areas have been identified on site. There is a Riparian corridor running along the eastern portion of the road, from the start point of the proposed road upgrade up to Water course 1 crossing. Water course crossing 1, (please refer to Figure 7), is described as a Key Area, and on the Msunduzi C-Plan (Figure 5a), Site/Unit ID 14478 indicates Midlands Mistbelt Grassland and Dry Ngongoni Veld, together with the Natal Banana Frog, the African Striped Weasel and the Natal Cycad. These sensitive areas must be adequately managed and any potential links must be taken into consideration. Riparian vegetation and areas to be identified and demarcated (danger tape and fencing), and disturbances must be limited to the working corridor/road servitude only. Impacts may occur in terms of the removal of natural vegetation, loss of fauna and the establishment of weeds post construction. Suitable alien invasive weed control measures should help to reduce this impact. The project EMP and Rehabilitation Plan will provide guidelines in the management of the reinstatement and rehabilitation of these areas.

The benefits of the project will include improvement of access for the local community and the potential for both economic growth and greater access for emergency vehicles, utilities etc. However, traffic, livestock, school children and pedestrian safety will be a concern, and the necessary road and traffic safety management systems will need to be put in place, including speed limit signs and pedestrian/school children caution signs.

#### Likelihood

Most of the impacts are likely to occur – such as the removal of vegetation, noise creation, and the increase in traffic.

#### Duration

The duration of most impacts should be short term (4-6months) during the construction phase, including the loss of vegetation and potential soil erosion issues. The majority of impacts on the local community should also be short term, and will occur more specifically during the construction phase. There will be an increase in traffic volume to the specific area due to accessibility of the road, this will be a permanent change.

The loss of vegetation would be permanent and without proper stormwater and soil erosion control measures, a number of impacts may extend into the medium to long term, notably soil erosion.

**Spatial Scale**

The site and immediate surrounding residential/informal households may be affected. The increased volume of traffic may affect homesteads in the local vicinity, however, these impacts should not prove significant, provided the recommended mitigation measures are implemented.

**Intensity**

Impacts on the local natural environment are likely to be low to moderate as most of the area has already been impacted by the construction of the existing road. Social impacts are likely to be low in terms of pedestrian and traffic safety, provided suitable road and traffic safety measures are put in place and properly managed. These negative impacts are offset by the MODERATE to HIGH BENEFITS that should be experienced by the local community in terms of the improved access and mobility.

**Significance:**

The overall environmental significance in terms of the natural environment is that there will be a low to moderate impacts that will be limited to the construction period. The loss of vegetation due to the increased road servitude will, however, be permanent, as will the increased traffic volumes.

Initial social impacts will be limited to the short term construction phase and will likely be low in terms of safety and inconvenience. These impacts may be offset by the benefits associated with the development of the road. Social impact in terms of interaction between visitors and locals will increase as the improved infrastructure will increase mobility.

**Alternative S2**

**Alternative A1 (preferred alternative)**

As per S1 above.

**Alternative A2**

**No-go alternative (compulsory)**

The No-Go option attempts to provide an understanding of the impacts associated with not upgrading the access road.

**Type of Impacts**

There will be no negative impacts associated with not upgrading the access road other than continued erosion of the existing gravel access road, and the road becoming less stable and potentially hazardous with erosion.

There will be no social benefits associated with not upgrading the access road such as increased mobility and formal access to the extended road network. There will also be no improved access for the local community.

**Likelihood**

On the assumption that the road is not built – the impacts or lack of impacts will be definite.

**Duration**

Not applicable.

**Spatial Scale**

On the assumption that the road is not upgraded - the site and immediate surrounding villages/households will not be impacted nor receive any benefits. Access would remain poor and possibly exacerbate with time.

**Intensity**

There will be NO IMPACT on the local natural and social environment from not upgrading the access road, apart from continued erosion of the existing road, and issues with access, safety and potential road widening as vehicles might attempt to avoid eroded areas/potholes. Likewise there will be NO BENEFITS if the NO-GO Option is adopted. The current 'status quo' will remain the same with the potential for further erosion.

**Overall Significance:**

There will be NO IMPACT on the local natural and social environment from not upgrading the access road, other than the current erosion issues potentially exacerbating with time. Likewise there will be NO BENEFITS if the NO-Go option is adopted.

**SECTION F. RECOMMENDATION OF EAP**

Is the information contained in this report and the documentation attached hereto in the view of the EAPr sufficient to make a decision in respect of this report?

YES	NO

If "NO", please contact the KZN Department of Agriculture & Environmental Affairs regarding the further requirements for your report.

If "YES", please attach the draft EMPr as Appendix F to this report and 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:

Should a positive Environmental Authorisation be granted, we would recommend that the following conditions be included in the authorisation:

An independent Environmental Control Officer should be appointed to monitor the compliance of construction activities, with the approved project specific EMPr. A Rehabilitation Plan has been included under the EMP for the project to provide guidelines for the reinstatement and rehabilitation within sensitive areas, such as the proposed upgraded bridge structures. It is the responsibility of the proponent and the contractor to implement mitigation measures outlined in the project specific EMPr and Rehabilitation Plan to adhere to conditions of the Environmental Authorisation.

The construction area should be kept to a minimum (the smallest possible work area), along the road length and more specifically at the watercourse crossings. Riparian vegetation and areas to be identified and demarcated (danger tape and fencing), and disturbances must be limited to the working corridor/road servitude only. Re-instatement of indigenous vegetation should take place where vegetation clearing has been required for construction purposes. Any disturbed banks to be stabilised and rehabilitated with suitable indigenous vegetation, and any outfall points to be adequately protected with gabion baskets or similar type structures to help both dissipate water and help prevent erosion. The water course areas and the previous MOSS areas, now replaced as ESP areas have been identified on site. There is a Riparian corridor running along the eastern portion of the road, from the start point of the proposed road upgrade up to Water course 1 crossing. Water course crossing 1, (please refer to Figure 7), is described as a Key Area, and on the Msunduzi C-Plan (Figure 5a), Site/Unit ID

## Basic Assessment Report

14478 indicates Midlands Mistbelt Grassland and Dry Ngongoni Veld, together with the Natal Banana Frog, the African Striped Weasel and the Natal Cycad, these will be No-go areas for the duration of the project and all members of the construction team will need to be made aware of this through regular awareness training.

There are sections along the proposed road upgrade that may require embankment cutting. These sections must take the existing vegetation into consideration and no indigenous trees, nor any tree used as a resource may be cleared. Any cut banks should be terraced and adequately stabilised and rehabilitated.

It is important that every effort be made to retain all the large indigenous trees along the road edge, however, in the event that an indigenous tree has to be removed, it will be necessary to obtain a permit from the Department of Agriculture, Forestry and Fisheries for the clearing of any indigenous trees.

It is also strongly recommended that appropriate alien invasive control measures be implemented within the proposed road reserve and construction areas where disturbance occurs within the drainage lines.

Grave site areas and cemetery areas have been identified along the road length and a minimum of a 10m buffer zone should be maintained around these sites utilising danger tape (or similar) to prevent any access/encroachment. No removal of artefacts or alterations of any heritage structure will be allowed within the buffer zone. Should the developer wish to develop in the immediate vicinity of any grave (within the 10m buffer zone), then a phase two archaeological assessment would be required to assist with the mitigation process.

All members of the construction team will need to be made aware of the graves and the cemetery sites and the protection requirements through regular awareness training. The minimum 10m buffer zone will be a No-go area. The KwaZulu-Natal Heritage Act requires that operations exposing archaeological and historical residues should cease immediately pending an evaluation by the heritage authorities.

Power line, telephone and water line servitude requirements must be observed during the construction process.

## SECTION G: APPENDIXES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix E: Comments and responses report

Appendix F: Draft Environmental Management Programme (EMPr)  
Draft Rehabilitation Plan

Appendix G: Other information

Appendix A: Site plan(s)

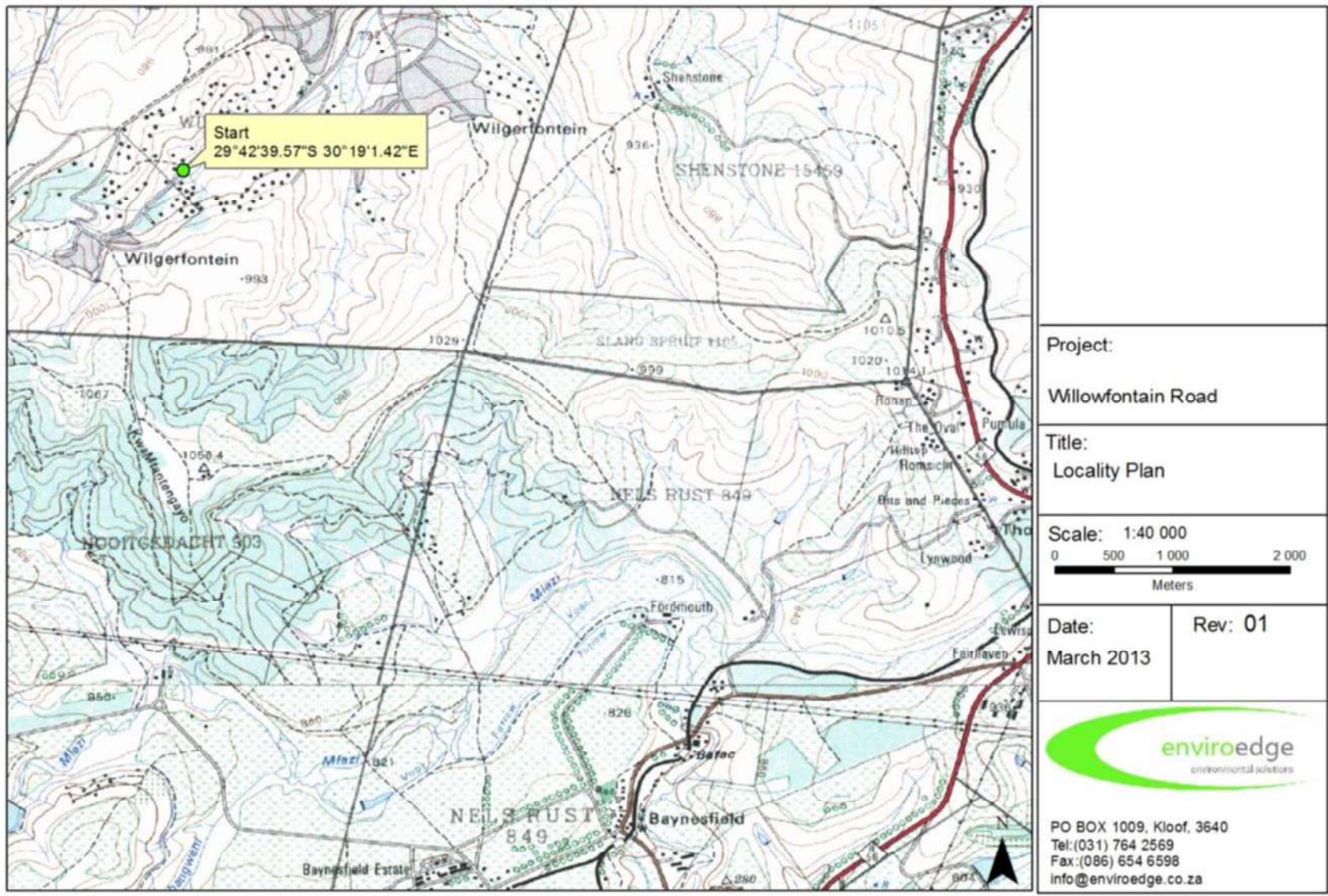


Figure 1: Locality Plan

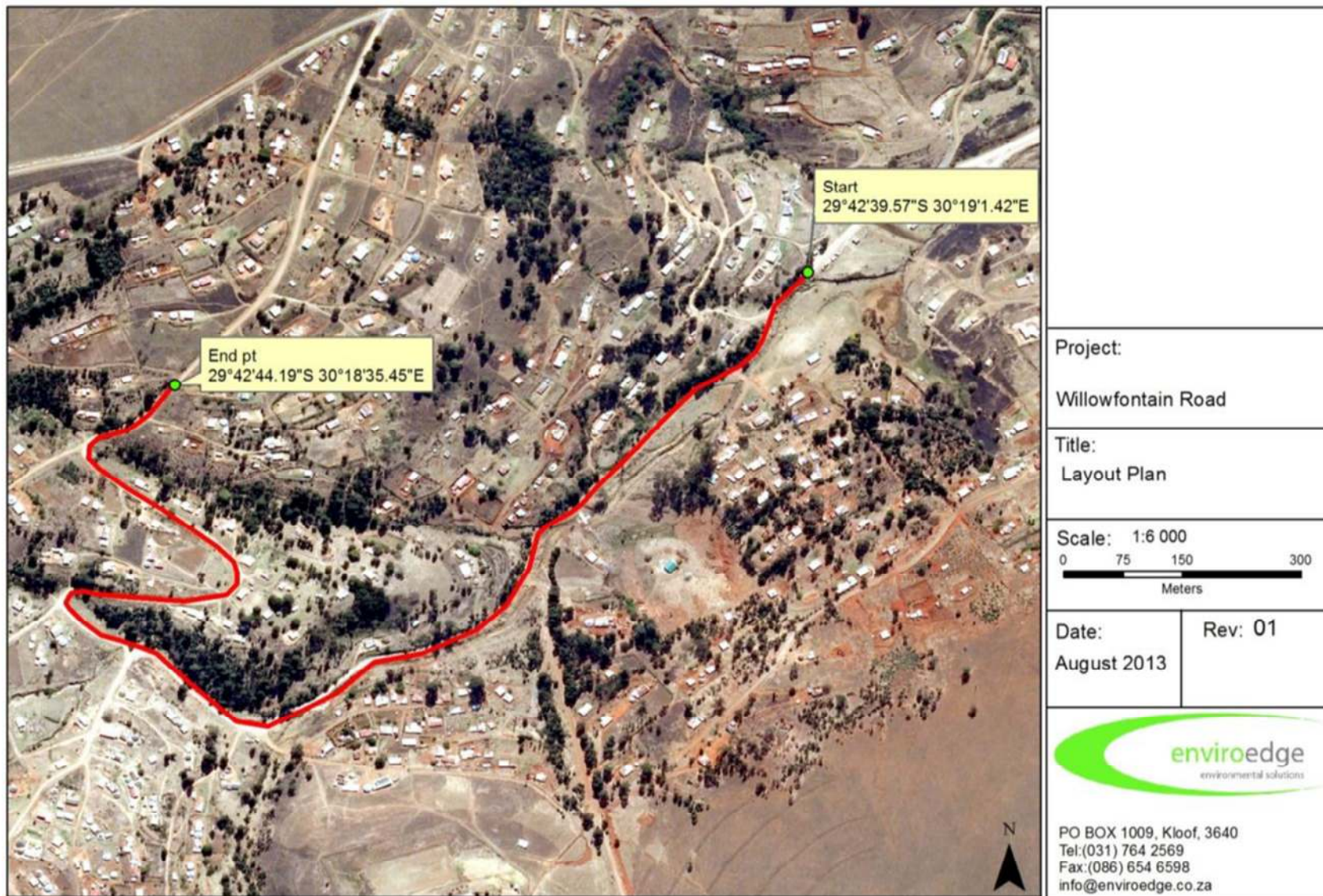


Figure 2: Layout Plan



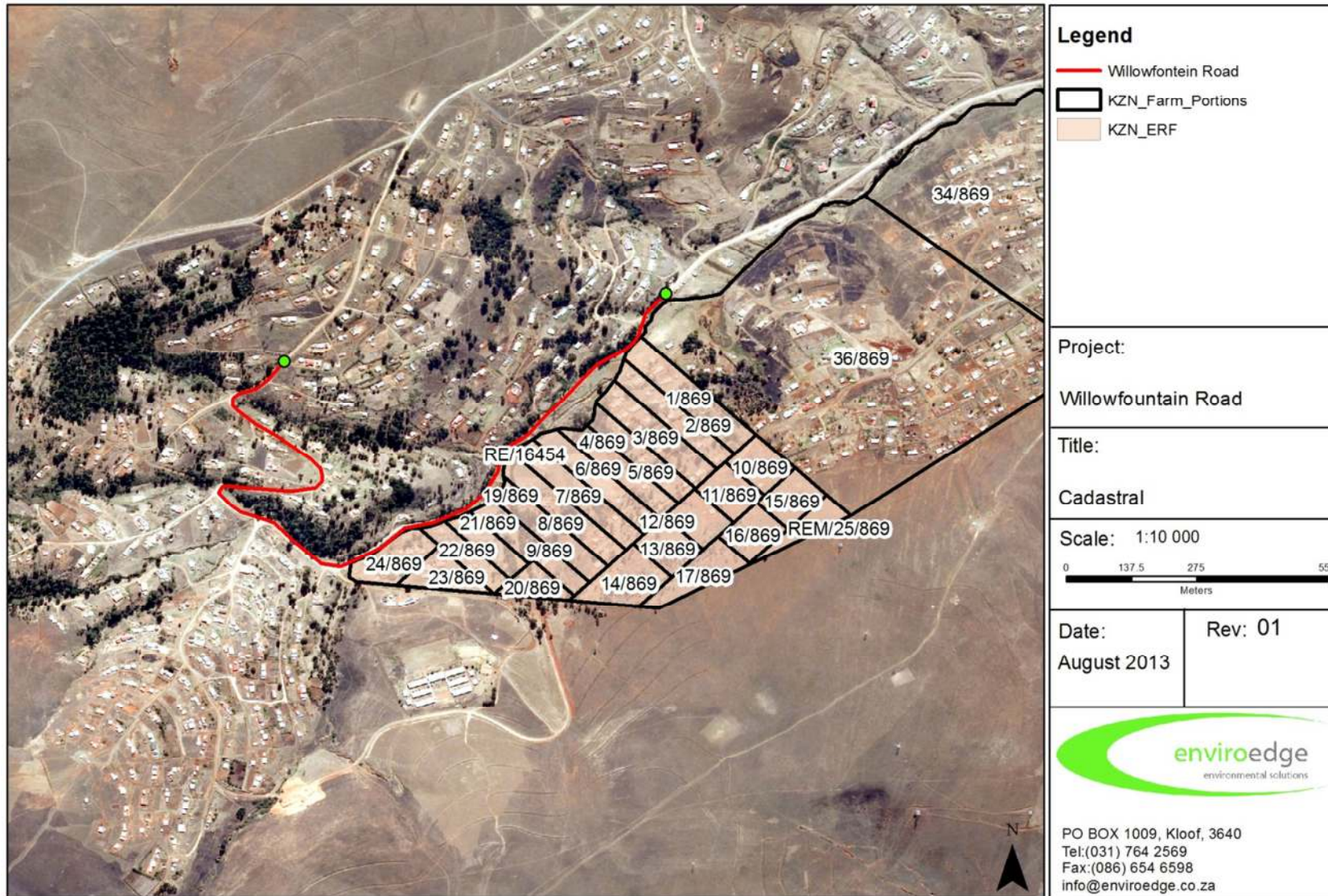


Figure 3: Cadastral Layout

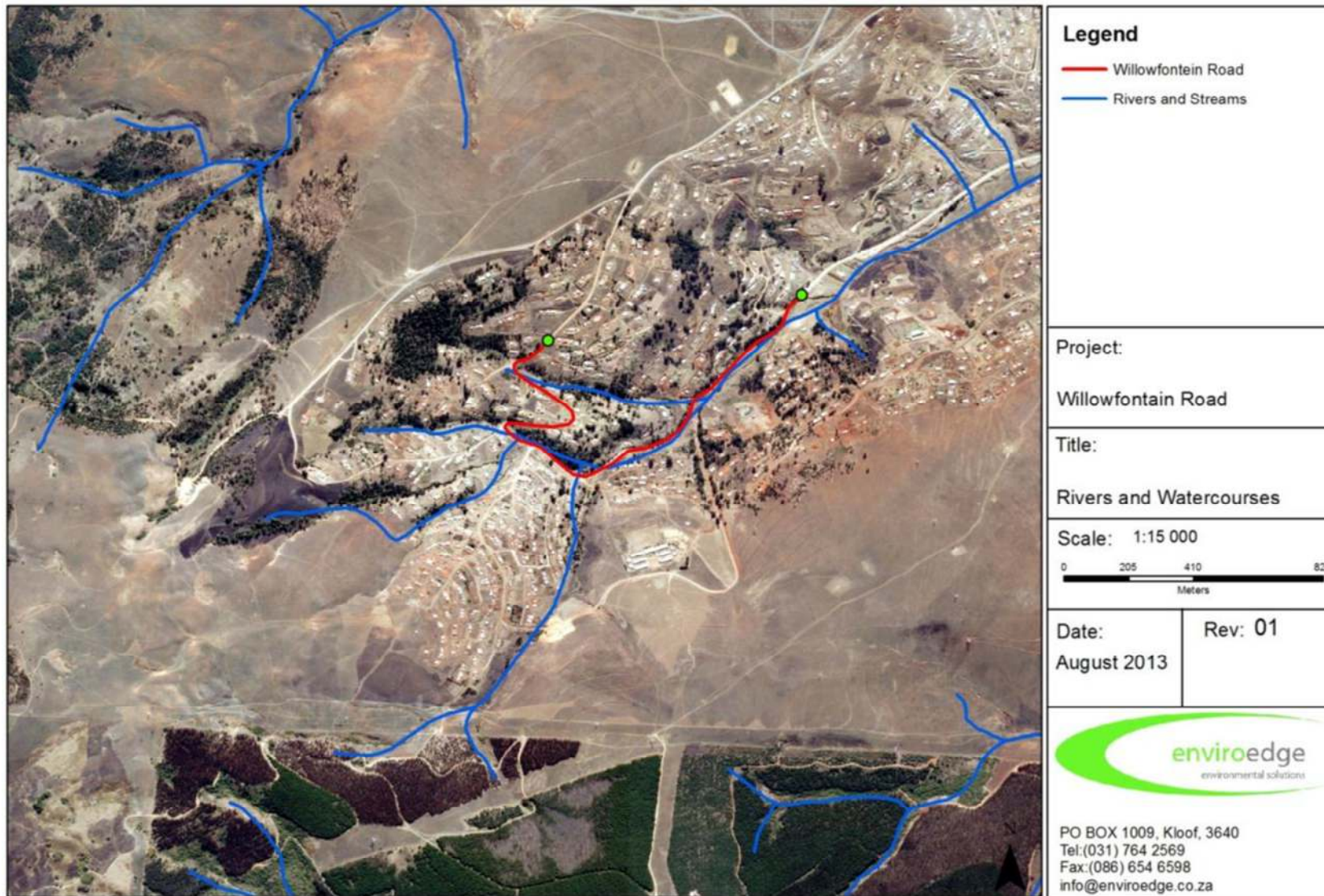


Figure 4: Rivers and Watercourses Plan

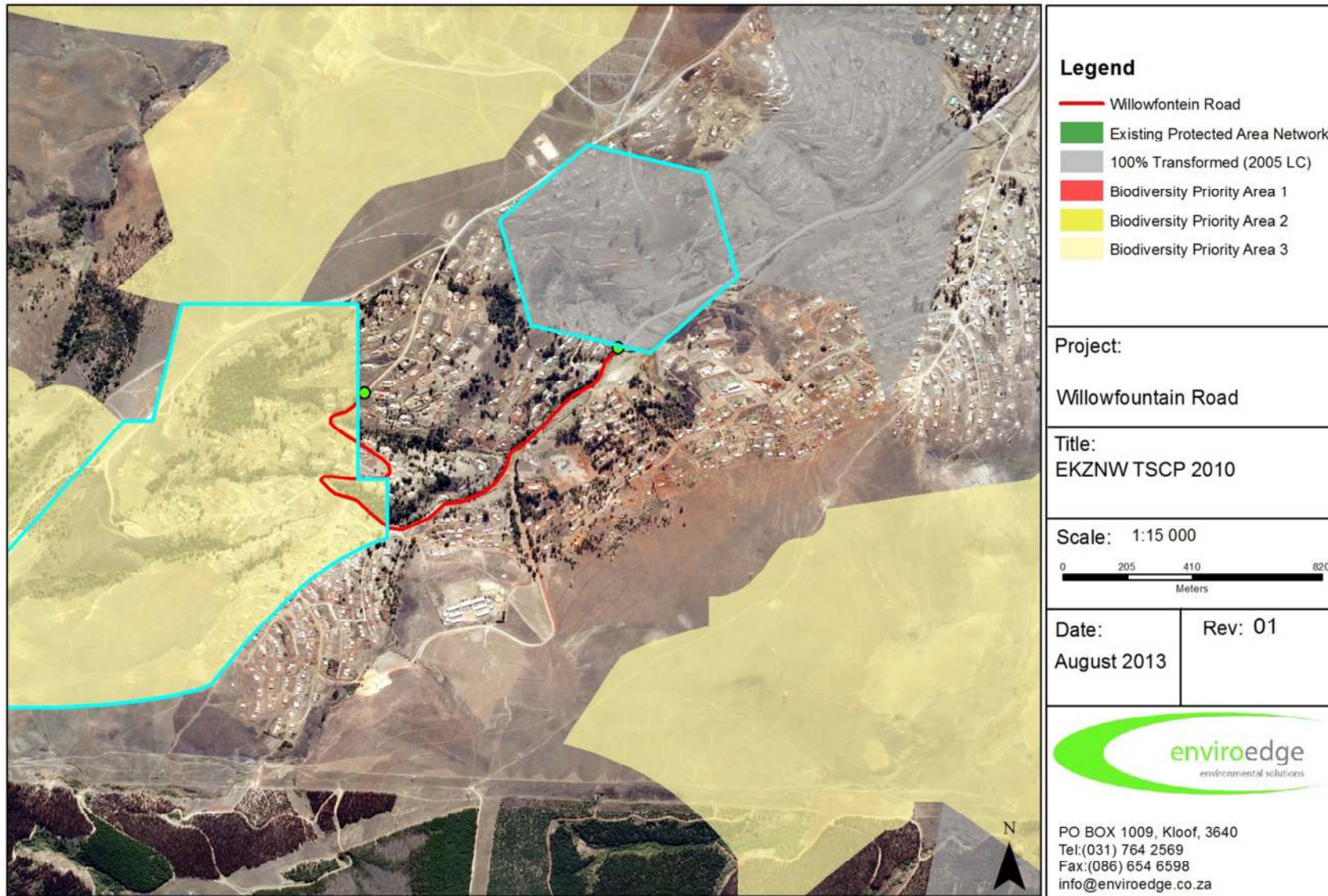


Figure 5: EKZNW Terrestrial Systematic Conservation Plan

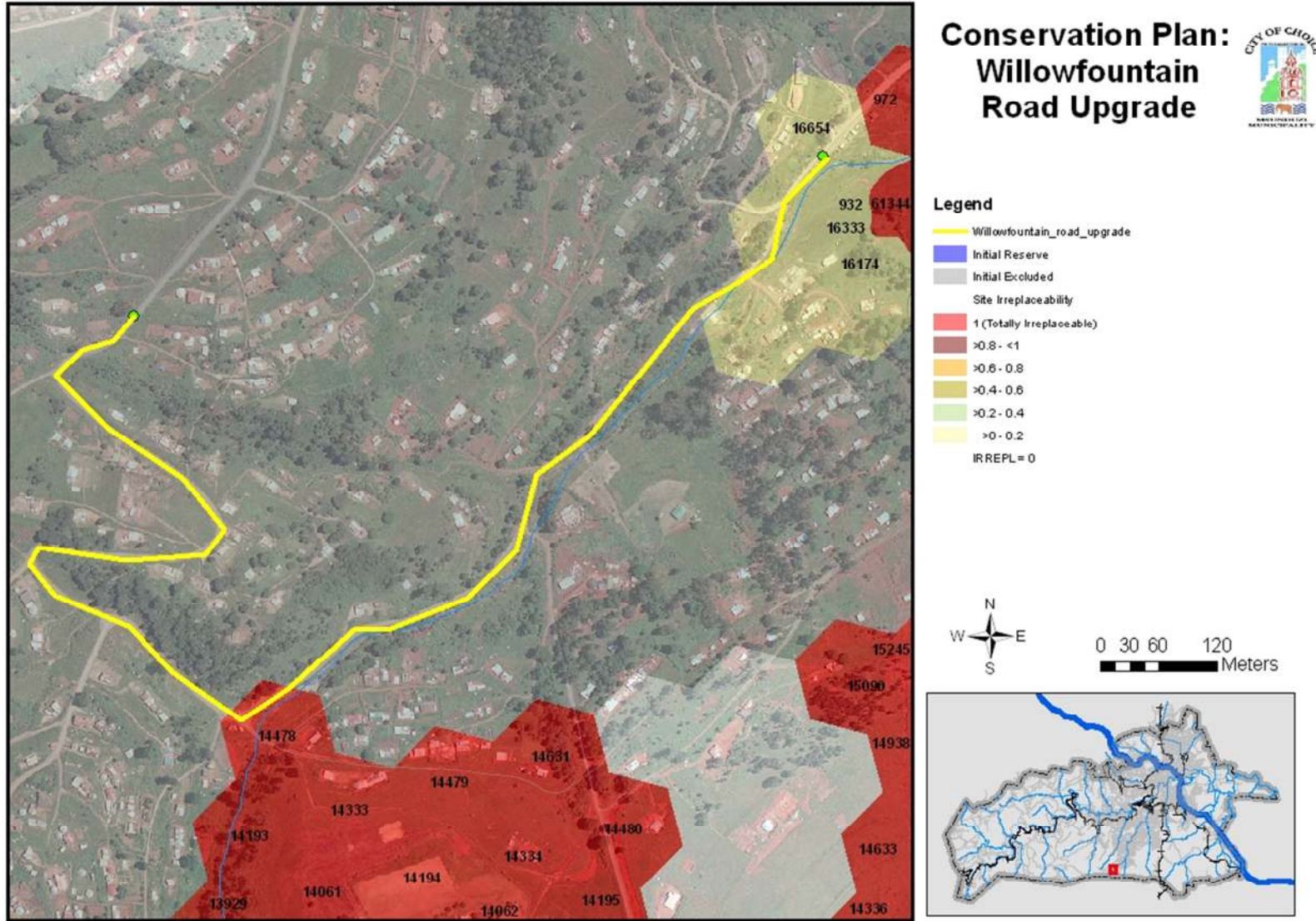


Figure 5a: Msunduzi Municipality C-Plan

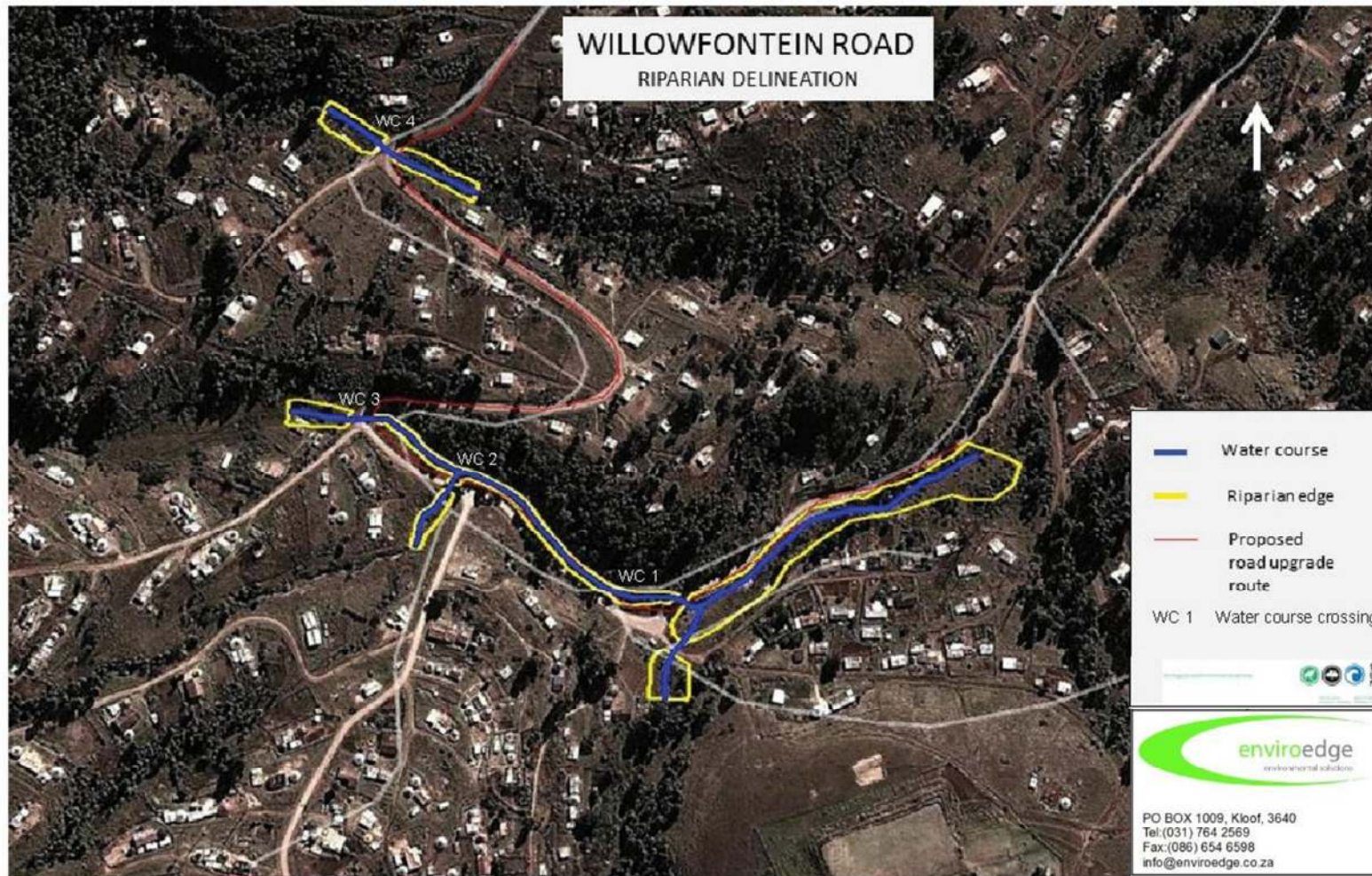


Figure 6: Watercourse Crossings 1 - 4 and riparian Delineation

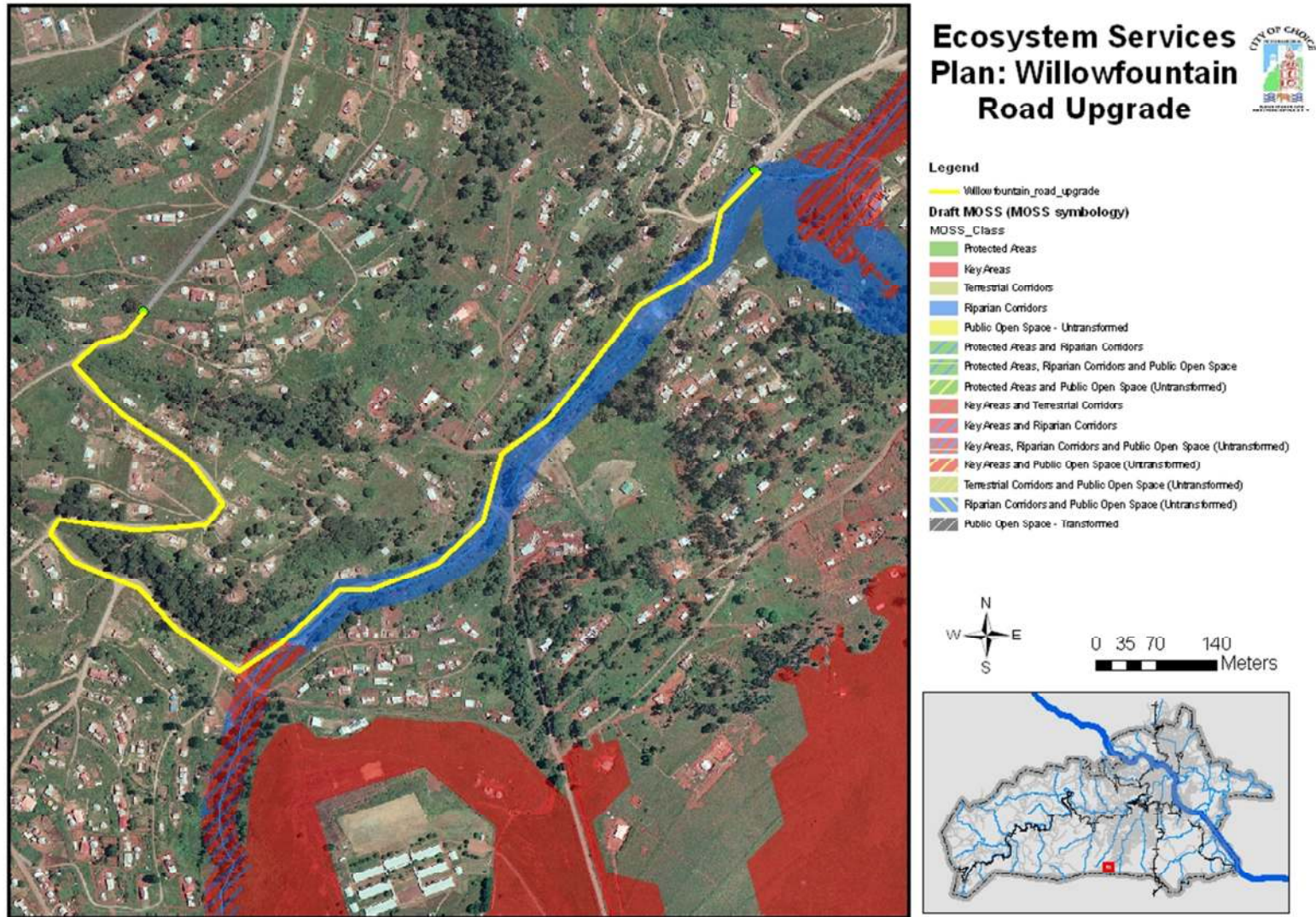


Figure 7: Msunduzi Municipality Ecosystem Services Plan (ESP)

Appendix B: Photographs

**Willowfountain Road Site Photographs**



**Figure 1: Start point of Willowfountain Road looking south-west.**



**Figure 2: Watercourse crossing 1 looking south-south-west.**



**Figure 3: Mid-section of road, stream tributary of Wilgerfontein river to south (left) of road looking south-west.**



**Figure 4: Main Watercourse crossing 2 looking north-west.**



**Figure 5: View back along road from Watercourse crossing 3 down looking south-east, stream to north-east of road (left).**





**Figure 6: Main Watercourse crossing 3, upstream of WC 2, looking south-east.**



**Figure 7: Watercourse crossing 4 looking north-east over crossing point. Watercourse crossing 4 upstream of Watercourse crossing 1. (See Figure 2).**



**Figure 8: End point of Willowfountain Road looking south-west down road.**

Appendix C: Facility illustration(s)

Basic Assessment Report

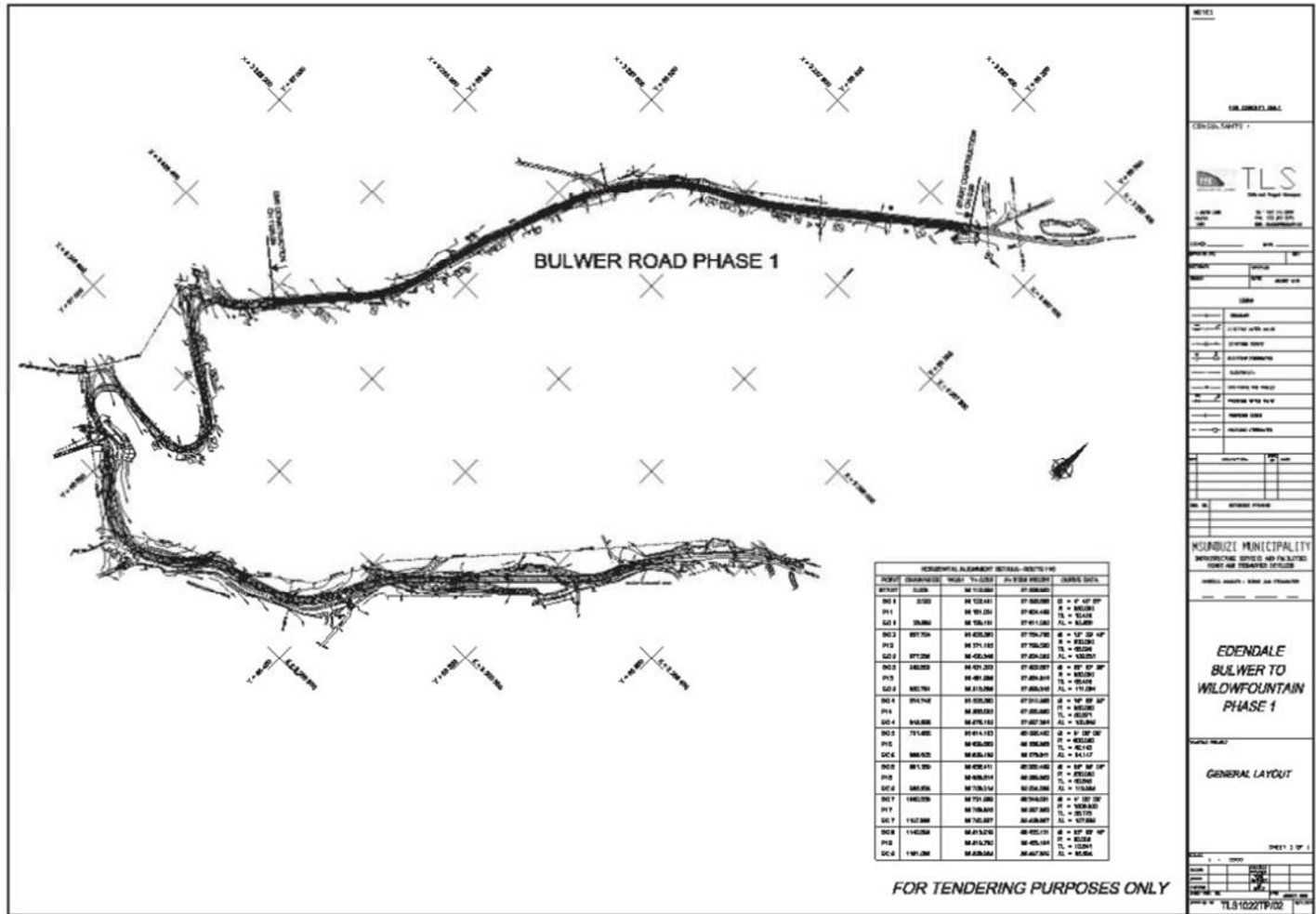


Figure 8: Msunduzi Municipality Willowfountain Road Upgrade project – Layout Plan

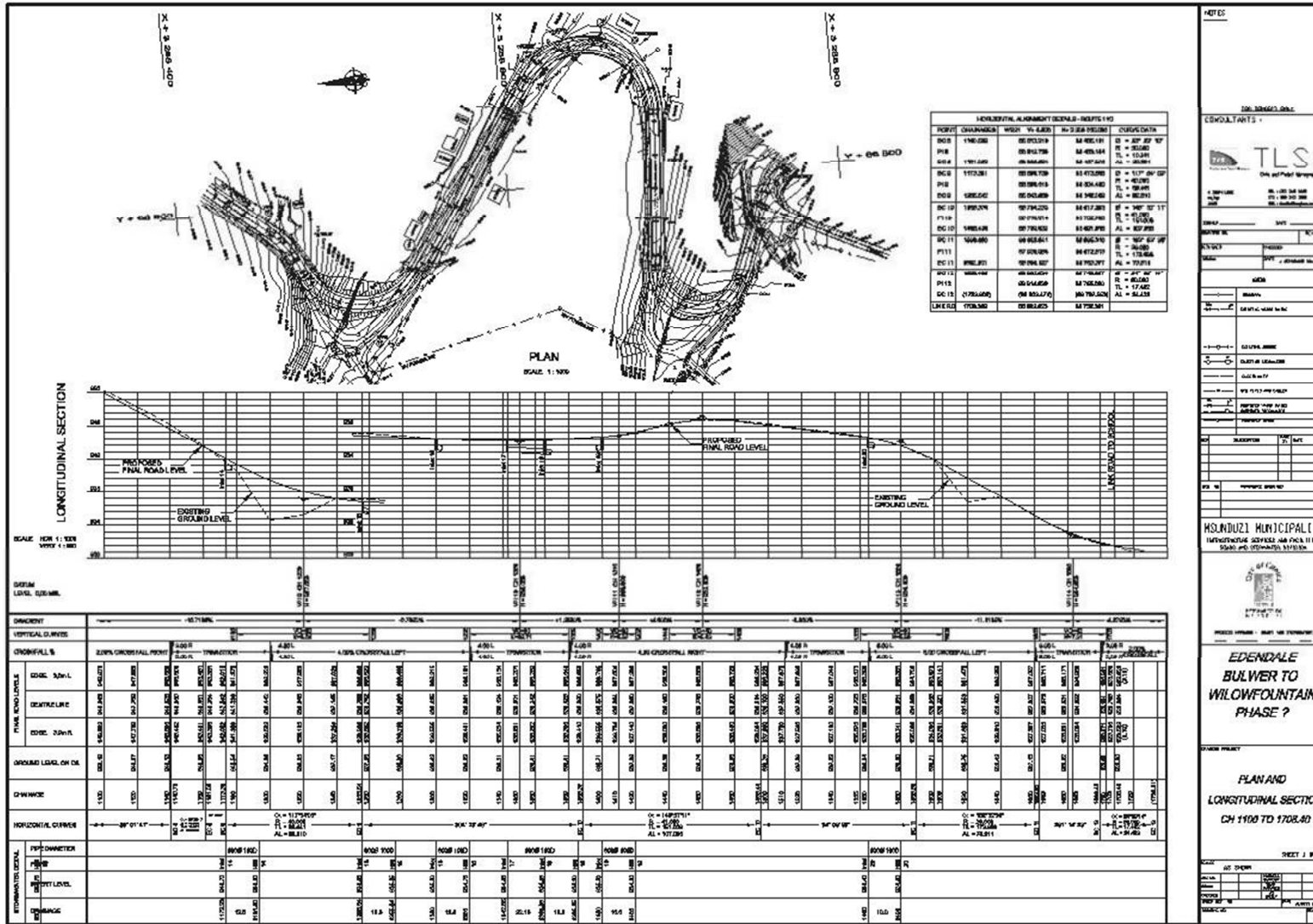


Figure 9: Msunduzi Municipality Willowfontain Road Upgrade project – Drainage Details

Appendix D: Specialist reports

Appendix E: Comments and responses report

Appendix F: Draft Environmental Management Programme (EMPr)  
Draft Rehabilitation Plan

Appendix G: Other information







agriculture  
& environmental affairs

Department:  
Agriculture  
& Environmental Affairs  
PROVINCE OF KWAZULU-NATAL

(For official use only)

EIA File Reference Number:  
NEAS Reference Number:  
Waste Management Licence Number:  
(if applicable)  
Date Received:

DC22/0008/2013
KZN/EIA/0001068/2013

## BASIC ASSESSMENT REPORT

Submitted in terms of the Environmental Impact Assessment Regulations, 2010 promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998)

This template may be used for the following applications:

- **Environmental Authorization** subject to basic assessment for an activity that is listed in Listing Notices 1 or 3, 2010 (Government Notices No. R 544 or No. R 546 dated 18 June 2010); or
- **Waste Management Licence** for an activity that is listed in terms of section 20(b) of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) for which a basic assessment process as stipulated in the EIA Regulations must be conducted as part of the application (refer to the schedule of waste management activities in Category A of Government Notice No. 718 dated 03 July 2009).

Kindly note that:

1. This **basic assessment report** meets the requirements of the EIA Regulations, 2010 and is meant to streamline applications. This report is the format prescribed by the KZN Department of Agriculture & Environmental Affairs. Please make sure that this is the latest version.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not 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 text.
3. Where required, place a cross in the box you select.
4. An incomplete report will be returned to the applicant for revision.
5. 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 will result in the rejection of the application as provided for in the regulations.
6. No faxed or e-mailed reports will be accepted.
7. The report must be compiled by an independent environmental assessment practitioner ("EAP").
8. 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.

## Basic Assessment Report

9. The KZN Department of Agriculture & Environmental Affairs may require that for specified types of activities in defined situations only parts of this report need to be completed.
10. The EAP must submit this basic assessment report for comment to all relevant State departments that administer a law relating to a matter affecting the environment. This provision is in accordance with Section 24 O (2) of the National Environmental Management Act 1998 (Act 107 of 1998) and such comments must be submitted within 40 days of such a request.
11. **Please note that this report must be handed in or posted to the District Office of the KZN Department of Agriculture & Environmental Affairs to which the application has been allocated (please refer to the details provided in the letter of acknowledgement for this application).**

## DEPARTMENTAL REFERENCE NUMBER(S)

File reference number (EIA):	DC22/0008/2013 KZN/EIA/0001068/2013
File reference number (Waste Management Licence):	

## SECTION A: DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER AND SPECIALISTS

## 1. NAME AND CONTACT DETAILS OF ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

Name and contact details of the EAP who prepared this report:

Business name of EAP:	<b>ENVIROEDGE</b>		
Physical address:	<b>1 Jerome Drive, Kloof, 3610</b>		
Postal address:	<b>P.O. Box 1009, Kloof</b>		
Postal code:	<b>3640</b>	Cell:	<b>083 619 8683</b>
Telephone:	<b>(031) 764 2569</b>	Fax:	<b>086 654 6598</b>
E-mail:	<b>karin@enviroedge.co.za</b>		

## 2. NAMES AND EXPERTISE OF REPRESENTATIVES OF THE EAP

Names and details of the expertise of each representative of the EAP involved in the preparation of this report:

Name of representative of the EAP	Education qualifications	Professional affiliations	Experience at environmental assessments (yrs)
<b>Karin Samouilhan</b>	<b>BA</b>	<b>IAIASA</b>	<b>14 years</b>
<b>Steven Whitaker</b>	<b>BSc(Hons)</b>	<b>IAIASA</b>	<b>6 years</b>

## 3. NAMES AND EXPERTISE OF SPECIALISTS

Names and details of the expertise of each specialist that has contributed to this report:

Name of specialist	Education qualifications	Field of expertise	Section/ s contributed to in this basic assessment report	Title of specialist report/ s as attached in Appendix D
<b>Alex Whitehead</b>	<b>BSc Hons Pr, Sci. Nat</b>	<b>Environmental consultant, Ecologist</b>	<b>4 and A</b>	<b>Riparian Delineation Report</b>

## SECTION B: ACTIVITY INFORMATION

### 1. PROJECT TITLE

Describe the project title as provided on the application form for environmental authorization:

Proposed Willowfountain Road Upgrade

### 2. PROJECT DESCRIPTION

Provide a detailed description of the project:

The Msunduzi Municipality has proposed the upgrade of the Willowfountain Road, in Edendale, Pietermaritzburg. The road upgrade aims to allow local residents to have improved, formalised access to their homes, schools, shops and the extended road network. The project is located in Ward 14 of the Msunduzi Local Municipality.

The project involves the construction of a 1.6km, 6m wide black top all-weather road complete with drainage and watercourse crossings, storm water drains and a pedestrian walkway. The road currently consists of a gravel access road and sections of gravel with informal drainage crossings and storm water pipes. The current road conditions are susceptible to erosion which makes access problematic for the local residents of Willowfountain. The road upgrade has been designed to align with the existing roads for the most part. The proposed road upgrade involves widening by 3 to 5 metres in certain areas, realignment of approximately 500m of road, the upgrading of four existing culverts, the realignment and upgrading of two hairpin bends/watercourse crossing points.

The road start and end points can be found at: Start: 29°42'39.567"S, 30°19'1.418"E; End: 29°42'44.818"S, 30°18'34.846"E.

### 3. ACTIVITY DESCRIPTION

Describe each listed activity in Listing Notice 1 (GNR 544, 18 June 2010), Listing Notice 3 (GNR 546, 18 June 2010) or Category A of GN 718, 3 July 2009 (Waste Management Activities) which is being applied for as per the project description:

#### **GNR 544:**

**11.** The construction of:

- (xi) bridges;
- (xii) 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 the watercourse, excluding where such construction will occur behind the development setback line.

**18.** The infilling or depositing of any material of more than 5 cubic meters into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from

- (i) a watercourse;
- but excluding where such infilling, depositing, dredging, excavation, removal or moving.

**39.** The expansion of

- (i) canals;
- (ii) channels;
- (iii) bridges;
- (iv) weirs;
- (v) bulk storm water outlet structures;
- (vi) marinas;

within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, where such expansion will result in an increased development footprint but excluding where such expansion will occur behind the development setback line.

**40.** The expansion of

- (i) jetties by more than 50 square metres;
- (ii) spillways by more than 50 square metres; or
- (iii) buildings by more than 50 square metres

within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, but excluding where such expansion will occur behind the development setback line.

#### **4. 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 report. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity 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.

Sections B 5 – 15 below should be completed for each alternative.

#### **5. ACTIVITY POSITION**

## Basic Assessment Report

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, minutes and seconds. List alternative sites were applicable.

	Latitude (S):		Longitude (E):	
<b>Alternative:</b>				
Alternative S1 <sup>1</sup> (preferred or only site alternative)	°	′	″	°
Alternative S2 (if any)	°	′	″	°
Alternative S3 (if any)	°	′	″	°

**In the case of linear activities:**

	Latitude (S):		Longitude (E):	
<b>Alternative:</b>				
Alternative S1 (preferred or only route alternative)				
<ul style="list-style-type: none"> <li>• Starting point of the activity</li> <li>• Middle point of the activity</li> <li>• End point of the activity</li> </ul>	29°	42′	39.567″	30°
	29°	42′	55.47″	30°
	29°	42′	44.818″	30°
Alternative S2 (if any) Please see note below.				
<ul style="list-style-type: none"> <li>• Starting point of the activity</li> <li>• Middle point of the activity</li> <li>• End point of the activity</li> </ul>	°	′	″	°
	°	′	″	°
	°	′	″	°
Alternative S3 (if any)				
<ul style="list-style-type: none"> <li>• Starting point of the activity</li> <li>• Middle point of the activity</li> <li>• End point of the activity</li> </ul>	°	′	″	°
	°	′	″	°
	°	′	″	°

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

Start	29° 42′ 39.567″ S	30° 19′ 1.418″ E
500m	29° 42′ 52.07″ S	30° 18′ 49.74″ E
1000m	29° 42′ 55.47″ S	30° 18′ 35.16″ E
1500m	29° 42′ 48.96″ S	30° 18′ 34.22″ E
End	29° 42′ 44.818″ S	30° 18′ 34.846″ E

The project consists the upgrade of an existing gravel access road to black top all-weather road complete with drainage and watercourse crossings and storm water drains and a pedestrian walkway. The road upgrade has been designed to align with the existing roads for the most part, however, there will be widening by 3 to 5 metres in certain areas, realignment of approximately 500m of road, the upgrading of four existing culverts, the realignment and the upgrading of two hairpin bends/watercourse crossing points.

Alternatives have, therefore, not been considered, as this would create additional road servitudes and cleared areas.

<sup>1</sup> "Alternative S.." refer to site alternatives.

## 6. PHYSICAL SIZE OF THE ACTIVITY

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

**Alternative:**

Alternative A1<sup>2</sup> (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

or, for linear activities:

**Alternative:**

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

**Size of the activity:**

6m wide servitude x 1 600m
9 600 m <sup>2</sup>
m <sup>2</sup>
m <sup>2</sup>

**Length of the activity:**

1 600 m
m
m

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

**Alternative:**

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

**Size of the site/servitude:**

6m wide servitude x 1 600m
9 600 m <sup>2</sup>
m <sup>2</sup>
m <sup>2</sup>

## 7. SITE ACCESS

Does ready access to the site exist?

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

YES	
	m

The existing gravel road will be used for construction access.

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.

## 8. SITE OR 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 report.

The site or route plans must indicate the following:

- 8.1. the scale of the plan which must be at least a scale of 1:500;

<sup>2</sup> "Alternative A.." refer to activity, process, technology or other alternatives.



- 8.2. the property boundaries and numbers/ erf/ farm numbers of all adjoining properties of the site;
- 8.3. the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 8.4. the exact position of each element of the application as well as any other structures on the site;
- 8.5. the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 8.6. walls and fencing including details of the height and construction material;
- 8.7. servitudes indicating the purpose of the servitude;
- 8.8. sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
  - rivers, streams, drainage lines or wetlands;
  - the 1:100 year flood line (where available or where it is required by DWA);
  - ridges;
  - cultural and historical features;
  - areas with indigenous vegetation including protected plant species (even if it is degraded or infested with alien species);
- 8.9. for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 8.10. the positions from where photographs of the site were taken.

## 9. 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.

## 10. FACILITY ILLUSTRATION

A detailed illustration of the facility must be provided at a scale of 1:200 and attached to this report as Appendix C. The illustrations must be to scale and must represent a realistic image of the planned activity/ies.

A drawing of the proposed road layout has been included under Appendix C, together with a drawing detail illustrating the proposed pipe drainage crossings which will be fitted with culvert headwall details and splitter blocks on the outlet side to help to reduce water velocity and erosion/scour potential, together with a section of reno mattress protection/gabion baskets and stone pitching (or similar), below the headwall structure, to help reduce erosion potential.

## 11. ACTIVITY MOTIVATION

**11.1. Socio-economic value of the activity**

What is the expected capital value of the activity on completion?	R 6 million
What is the expected yearly income that will be generated by or as a result of the activity?	Unknown at this stage
Will the activity contribute to service infrastructure?	YES
Is the activity a public amenity?	YES
How many new employment opportunities will be created in the development phase of the activity?	Unknown at this stage
What is the expected value of the employment opportunities during the development phase?	Unknown at this stage
What percentage of this will accrue to previously disadvantaged individuals?	100 %
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?	Unknown at this stage
What percentage of this will accrue to previously disadvantaged individuals?	100 %

**11.2. Need and desirability of the activity**

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

The Msunduzi Municipality has identified the need to improve the condition of the Willowfontain Road as the current condition and alignment of the road is unlikely to be able to sustain increased traffic volumes. The road currently consists of a gravel access road and sections of asphalt with informal drainage crossings and storm water pipes. The current road conditions are susceptible to erosion which makes access problematic for the local residents of Willowfontain. The road upgrade has been designed to align with the existing roads for the most part, there will be widening by 3 to 5 metres in certain areas, realignment of approximately 500m of road, the upgrading of four existing culverts, the realignment and upgrading of two hairpin bends/watercourse crossing points.  
The proposed road upgrade will provide improved access for local residents.

Indicate any benefits that the activity will have for society in general:

The upgrade of the road section from existing gravel and temporary surfaces to municipal 6m wide black top all-weather road with drainage and watercourse crossings and stormwater drains and a pedestrian walkway will allow local residents to gain improved formal access to their homes, schools, shops and the extended road network. The proposed road upgrade should help to reduce erosion and dust pollution, while also improving road safety for road users, with a more level drained surface, the realignment and upgrading of two hairpin bends and the construction of pedestrian walkway and associated storm water drainage infrastructure.  
The road upgrade also includes the creation of formal drainage crossings with four existing culverts being upgraded, and the construction of two new watercourse crossings which should help to reduce surface water erosion.

Indicate any benefits that the activity will have for the local communities where the activity will be located:

The proposed road upgrade will allow local residents to gain formal access to their homes, schools, shops and the extended road network. The proposed road upgrade of the road section from existing gravel and temporary surfaces to municipal 6m wide black top all-weather road with drainage and watercourse crossings and stormwater drains and a pedestrian walkway should help to reduce susceptibility to erosion and dust pollution, while also improving road safety for users, with a more level drained surface, the realignment and upgrading of two hairpin bends and the construction of pedestrian walkway and associated storm water drainage infrastructure.

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The road upgrade also includes the creation of formal drainage crossings with four existing culverts being upgraded, and the construction of two new watercourse crossings which should help to reduce surface water erosion.

Employment opportunities will be generated with the proposed road upgrade. Improved infrastructure will improve access to and from the area.

There will be maintenance requirements in the operational phase, as with the gravel road, and thus potential associated job opportunities.

### 12. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline:	Administering authority:	Date:
National Environmental Management Act, No 107 of 1998	DEA	2010
National Heritage Resources Act (Act 25 of 1999)	AMAFA	1999
National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004)	DEA	2004
Conservation of Agricultural Resources Act (Act 43 of 1983)	DEA	1983
The Protected Areas Act ( Act 57 of 2003)	DEA	2003
The National Water Act (Act 36 of 1998)	DWA	1998
The Constitution Act (No 108 of 1996)		1996
National Environmental Management Waste Act (Act 59 of 2002)	DEA	2002
Mineral and Petroleum Resources Development Act (Act 28 of 2002)	DMR	2002

### 13. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

#### 13.1. Solid waste management

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

YES	NO
-----	----

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

< 10 m <sup>3</sup>
---------------------

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

Construction solid waste will be gathered in skips or bins and taken via waste disposal trucks to the nearest licensed landfill site appropriate to the particular waste type.

Where will the construction solid waste be disposed of? (provide details of landfill site)

General construction solid waste to be disposed of at the nearest registered landfill site. Hazardous waste to be taken to an approved hazardous waste disposal site, should there be any hazardous waste generated.

Will the activity produce solid waste during its operational phase? 

YES	NO
-----	----

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

m <sup>3</sup>
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How will the solid waste be disposed of? (provide details of landfill site)

N/A

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

The solid waste will be disposed of at the New England road Landfill site.

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 the further requirements of the application.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation? 

YES	NO
-----	----

**If yes, contact the KZN Department of Agriculture & Environmental Affairs to obtain clarity regarding the process requirements for your application.**

Is the activity that is being applied for a solid waste handling or treatment facility? 

YES	NO
-----	----

**If yes, contact the KZN Department of Agriculture & Environmental Affairs to obtain clarity regarding the process requirements for your application.**

### 13.2. 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? 

m <sup>3</sup>	
----------------	--

Will the activity produce any effluent that will be treated and/or disposed of on site? 

Yes	NO
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**If yes, contact the KZN Department of Agriculture & Environmental Affairs to obtain clarity regarding the process requirements for your application.**

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:

Where possible, grey water will be re-used on site. General construction waste such as paper, plastic and glass would be recycled wherever possible.

A suitably registered waste company should be contracted to dispose of sewage waste water from chemical toilets on site. Waybills as proof of correct disposal would be required.

### 13.3. Emissions into the atmosphere

Will the activity release emissions into the atmosphere? 

YES	NO
-----	----

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

YES	NO
-----	----

**If yes, contact the KZN Department of Agriculture & Environmental Affairs to obtain clarity regarding the process requirements for your application.**

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

Emissions will be emitted from construction vehicles and dust would be generated from construction activities, however these emissions are considered to be of low concentration and short duration.

Emissions from the bitumen process utilised during the road construction process will also occur. The asphalt process is generally conducted at high temperatures and as such, heat and vapour emissions may occur. These emissions should, however, be minimal and limited to the work area, as well as transient in nature as the heat and vapour will dissipate fairly quickly.

#### 13.4. 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 would be generated from construction vehicles, machinery and associated construction activities. The noise emissions are considered to be a low to moderate level.

#### 14. WATER USE

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

municipal	<input checked="" type="checkbox"/> water board	<input type="checkbox"/> groundwater	<input type="checkbox"/> river, stream, dam or lake	<input type="checkbox"/> other	<input type="checkbox"/> 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 permit from the Department of Water Affairs?

If YES, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this report.

#### 15. ENERGY EFFICIENCY

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

The road design has, for the most part, been aligned with the existing horizontal and vertical alignment, four existing culverts will be upgraded, including the realignment and upgrading of two hairpin bends/watercourse crossing points.

Environmental education and awareness will be conveyed to all workers involved in the road upgrade.

Waste material will be separated and recycled where possible. This will also help to reduce disposal costs.

The purchase of local building materials will help to reduce the transportation, through travel distance reduction (fuel requirement reduction) and emissions and will also help to support the local economy.

The utilisation of biodegradable products wherever possible, and the sourcing of materials from organic/natural sources wherever possible will also help to improve energy efficiency.

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

Recycled material will be used, where possible.

Construction activities should take place during day time hours only.

## SECTION C: 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 C and indicate the area, which is covered by each copy No. on the Site Plan.

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

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

### 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

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Indicate the landform(s) that best describes the site (Please cross the appropriate box).

**Alternative S1 (preferred site):**

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea-front
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**Alternative S2 (if any):**

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea-front
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**Alternative S3 (if any):**

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea-front
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### 3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Has a specialist been consulted for the completion of this section?  YES  NO

If YES, please complete the following:

Name of the specialist: \_\_\_\_\_

Qualification(s) of the specialist: \_\_\_\_\_

Postal address: \_\_\_\_\_

Postal code: \_\_\_\_\_

Telephone: \_\_\_\_\_ Cell: \_\_\_\_\_

E-mail: \_\_\_\_\_ Fax: \_\_\_\_\_

Are any further specialist studies recommended by the specialist?  YES  NO

If YES, specify: \_\_\_\_\_

If YES, is such a report(s) attached in Appendix D?  YES  NO

Signature of specialist: \_\_\_\_\_ Date: \_\_\_\_\_

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

	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

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available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

### 4. GROUNDCOVER

Has a specialist been consulted for the completion of this section? 

YES	NO
-----	----

If YES, please complete the following:

Name of the specialist:			
Qualification(s) of the specialist:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites? 

YES	NO
-----	----

If YES, specify and explain:	<p>The Msunduzi Municipality C-Plan information indicates that <i>Afrilaxus spinifrons intermedius</i> – Natal Banana Frog occurs in the study area. The Natal Banana Frog is described as <b>Vulnerable</b> and occurring in wetland areas.</p> <p><i>Poecilogale albinucha</i> – African Striped Weasel is described as <b>Least Concern</b> and occurs within the study area.</p> <p><i>Encephalartos natalensis</i> – Natal Cycad occurs in the study area and is described as <b>Vulnerable</b>.</p> <p>None of these species were noted during the site visits conducted.</p>		
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Are there any special or sensitive habitats or other natural features present on any of the alternative sites? 

YES	NO
-----	----

If YES, specify and explain:	<p>There are four watercourse crossings, namely WC1, WC2, WC3 and WC4 which are all tributaries of the Wilgerfontein River and can be described as sensitive habitats (refer to Figure 6 under Appendix A). These water crossings form part of the Wilgerfontein River catchment. These drainage features contain some indigenous vegetation, together with some alien invasive plants located near the road edges, and along the stream edges. The remaining indigenous vegetation within the stream edges and along the stream banks must be maintained as far as possible, and any impact on this vegetation should be as limited as possible. The streams have already been impacted by the existing road and culvert/bridge structures along the road length. The Msunduzi Municipality Ecosystem Services Plan (Figure 7), illustrates that there is a Riparian corridor running along the eastern portion of the road, from the start point of the proposed road upgrade up to Water course 1 crossing. Water course crossing 1, (please refer to Figure 7), is described as a Key Area, and on the Msunduzi C-Plan (Figure 5a), Site/Unit ID 14478 indicates Midlands Mistbelt Grassland and Dry Ngongoni Veld, together with the Natal Banana Frog, the African Striped Weasel and the Natal Cycad.</p>		
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Are any further specialist studies recommended by the specialist? 

YES	NO
-----	----

If YES, specify:	<p>A Riparian Delineation Report/wetland delineation report has been undertaken. This study has been undertaken in response to comment received from DWA, and the wetland and riparian areas have been delineated according to this Department's guideline entitled "A practical field procedure for identification and delineation of wetlands and riparian areas." (DWA, 2005).</p>		
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If YES, is such a report(s) attached in Appendix D? 

YES	NO
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Signature of specialist: \_\_\_\_\_ Date: \_\_\_\_\_

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

Please refer to Figure 5 – EKZNW – C-Plan, Figure 5a – Msunduzi Municipality Conservation Plan, Figure 6 – Willowfontein Road Riparian Delineation and Figure 7 – Ecosystem Services Plan under Appendix B.



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Natural veld – good condition <sup>E</sup>	Natural veld with scattered aliens <sup>E</sup>	Natural veld with heavy alien infestation <sup>E</sup>	<del>Veld dominated by alien species<sup>E</sup></del>	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.

The EAP has the necessary expertise to complete this section.

### 5. LAND USE CHARACTER OF SURROUNDING AREA

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

Land use character			Description
Natural area	YES	NO	<p>The proposed road upgrade intersects four watercourses, which are tributaries of the Wilgerfontein River. The Msunduzi Municipality Ecosystem Services Plan indicates that there is a Riparian corridor running along the eastern portion of the road, from the start point of the proposed road upgrade up to Water course 1 crossing. Water course crossing 1, (please refer to Figure 7), is described as a Key Area, and on the Msunduzi C-Plan (Figure 5a), Site/Unit ID 14478 indicates Midlands Mistbelt Grassland and Dry Ngongoni Veld, together with the Natal Banana Frog, the African Striped Weasel and the Natal Cycad.</p> <p>Key areas are also illustrated to the south of the proposed road upgrade, with a riparian corridor to the south, from Watercourse crossing 1 extending in a southerly direction, and a riparian corridor illustrated to the north-east from the start point of the road, and extending in a north-easterly direction.</p> <p>Watercourse crossings would be impacted by the proposed development. The proposed bridge and culvert stream crossings will need to be fitted with culvert headwalls, splitter blocks on the outlet side</p>

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			to help to reduce water velocity and erosion/scour potential, together with a section of reno mattress protection/gabion baskets and stone pitching (or similar), below the headwall structure, to help reduce erosion potential. Refer to Appendix C.
Low density residential	YES	NO	
Medium density residential	YES	NO	
High density residential	YES	NO	
Informal residential	YES	NO	
Retail commercial & warehousing	YES	NO	
Light industrial	YES	NO	
Medium industrial	YES	NO	
Heavy industrial	YES	NO	
Power station	YES	NO	
Office/consulting room	YES	NO	
Military or police base/station/compound	YES	NO	
Spoil heap or slimes dam	YES	NO	
Quarry, sand or borrow pit	YES	NO	
Dam or reservoir	YES	NO	There is a small dam located to the north-east of the study area. This dam is unlikely to be impacted by the proposed road upgrade.
Hospital/medical centre	YES	NO	
School/ creche	YES	NO	The Thandokhule Pre-School crèche is located at 29°42'41.80"S; 30°18'58,58"E. The proposed road upgrade will provide an improved and more reliable access road to the school, thereby helping to provide community empowerment through education. The Ndlelayabasha Public Primary School is located at 29°43'5.80"S; 30°18'49.33"E. The proposed road upgrade will, likewise, provide an improved and more reliable access road to the school, thereby helping to provide community empowerment through education.
Tertiary education facility	YES	NO	
Church	YES	NO	
Old age home	YES	NO	
Sewage treatment plant	YES	NO	
Train station or shunting yard	YES	NO	
Railway line	YES	NO	
Major road (4 lanes or more)	YES	NO	
Airport	YES	NO	
Harbour	YES	NO	
Sport facilities	YES	NO	There is a sports field located to the south-east of the study area. It is unlikely that the proposed road development will impact on this facility, however, the proposed road upgrade will provide improved access to the

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			sportsfield, thereby facilitating access for the community.
Golf course	YES	NO	
Polo fields	YES	NO	
Filling station	YES	NO	
Landfill or waste treatment site	YES	NO	
Plantation	YES	NO	None identified. There are, however, small subsistence agricultural plantations farms within the study area, and to the south-east in the vicinity of the Ndlelayabasha Public Primary School, there is an area of contoured farm land, which appears to no longer be maintained.
Agriculture	YES	NO	There are some small subsistence agricultural farms within the study area, and to the south-east in the vicinity of the Ndlelayabasha Public Primary School, there is an area of contoured farm land, which appears to no longer be maintained..
River, stream or wetland	YES	NO	<p>The Wilgerfontein River and its tributaries are located within 500m. The proposed road upgrade intersects four watercourses, which are tributaries of the Wilgerfontein River. The Msunduzi Municipality Ecosystem Services Plan indicates that there is a Riparian corridor running along the eastern portion of the road, from the start point of the proposed road upgrade up to Water course 1 crossing. Water course crossing 1, (please refer to Figure 7), is described as a Key Area, and on the Msunduzi C-Plan (Figure 5a), Site/Unit ID 14478 indicates Midlands Mistbelt Grassland and Dry Ngongoni Veld, together with the Natal Banana Frog, the African Striped Weasel and the Natal Cycad.</p> <p>Key areas are also illustrated to the south of the proposed road upgrade, with a riparian corridor to the south, from Watercourse crossing 1 extending in a southerly direction, and a riparian corridor illustrated to the north-east from the start point of the road, and extending in a north-easterly direction.</p> <p>Watercourse crossings would be impacted by the proposed development. The proposed bridge and culvert stream crossings will need to be fitted with culvert headwalls, splitter blocks on the outlet side to help to reduce water velocity and erosion/scour potential, together with a section of reno mattress protection/gabion</p>

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			baskets and stone pitching (or similar), below the headwall structure, to help reduce erosion potential. Refer to Appendix C.
Nature conservation area	YES	NO	<p>The proposed road upgrade intersects four watercourses, which are tributaries of the Wilgerfontein River. The Msunduzi Municipality Ecosystem Services Plan indicates that there is a Riparian corridor running along the eastern portion of the road, from the start point of the proposed road upgrade up to Water course 1 crossing. Water course crossing 1, (please refer to Figure 7), is described as a Key Area, and on the Msunduzi C-Plan (Figure 5a), Site/Unit ID 14478 indicates Midlands Mistbelt Grassland and Dry Ngongoni Veld, together with the Natal Banana Frog, the African Striped Weasel and the Natal Cycad.</p> <p>Key areas are also illustrated to the south of the proposed road upgrade, with a riparian corridor to the south, from Watercourse crossing 1 extending in a southerly direction, and a riparian corridor illustrated to the north-east from the start point of the road, and extending in a north-easterly direction.</p> <p>Watercourse crossings would be impacted by the proposed development. The proposed bridge and culvert stream crossings will need to be fitted with culvert headwalls, splitter blocks on the outlet side to help to reduce water velocity and erosion/scour potential, together with a section of reno mattress protection/gabion baskets and stone pitching (or similar), below the headwall structure, to help reduce erosion potential. Refer to Appendix C.</p>
Mountain, hill or ridge	YES	NO	<p>The proposed road upgrade runs around the lower edges of a low hill, crossing streams in the valley formed by hills to the west, south and east and a high point of 869masl to the north-east. A high point of 1159masl lies to the north-west and 993masl to the south-east.</p>
Museum	YES	NO	
Historical building	YES	NO	
Protected Area	YES	NO	<p><u>Sensitive vegetation and stream crossing areas:</u></p> <p>The proposed road upgrade intersects four watercourses, which are tributaries of the Wilgerfontein River. The Msunduzi</p>

		<p>Municipality Ecosystem Services Plan indicates that there is a Riparian corridor running along the eastern portion of the road, from the start point of the proposed road upgrade up to Water course 1 crossing. Water course crossing 1, (please refer to Figure 7), is described as a Key Area, and on the Msunduzi C-Plan (Figure 5a), Site/Unit ID 14478 indicates Midlands Mistbelt Grassland and Dry Ngongoni Veld, together with the Natal Banana Frog, the African Striped Weasel and the Natal Cycad.</p> <p>Key areas are also illustrated to the south of the proposed road upgrade, with a riparian corridor to the south, from Watercourse crossing 1 extending in a southerly direction, and a riparian corridor illustrated to the north-east from the start point of the road, and extending in a north-easterly direction.</p> <p>Watercourse crossings would be impacted by the proposed development.</p> <p>The proposed bridge and culvert stream crossings will need to be fitted with culvert headwalls, splitter blocks on the outlet side to help to reduce water velocity and erosion/scour potential, together with a section of reno mattress protection/gabion baskets and stone pitching (or similar), below the headwall structure, to help reduce erosion potential. <b>Refer to Appendix C.</b></p> <p><u>Archaeologically sensitive or No-go areas:</u></p> <p>“The proposed development consists a road upgrade within an existing transformed servitude and is, therefore, not a threat to cultural resources.</p> <p>Any deviation beyond 2m of the existing servitude is rendered a new road and will automatically trigger a Heritage Impact Assessment as previous surveys identified several graves and a cemetery along the road. The developer is required to ensure that the construction team operates within the existing servitude to avoid inadvertent damage to graves.”</p> <p>Graves and a cemetery have, therefore, been identified by AMAFA, within the study area.</p> <p>The road upgrade has been designed to align with the existing roads for the most part, there will be widening by 3 to</p>
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			5 metres in certain areas, realignment of approximately 500m of road, the upgrading of four existing culverts, the realignment and upgrading of two hairpin bends/watercourse crossing points. Therefore, in line with AMAFA comment received, an HIA has been commissioned for the proposed road upgrade project.
Graveyard	YES	NO	<p>“The proposed development consists a road upgrade within an existing transformed servitude and is, therefore, not a threat to cultural resources. Any deviation beyond 2m of the existing servitude is rendered a new road and will automatically trigger a Heritage Impact Assessment as previous surveys identified several graves and a cemetery along the road. The developer is required to ensure that the construction team operates within the existing servitude to avoid inadvertent damage to graves.”</p> <p>Graves and a cemetery have, therefore, been identified by AMAFA, within the study area.</p> <p>The road upgrade has been designed to align with the existing roads for the most part, there will be widening by 3 to 5 metres in certain areas, realignment of approximately 500m of road, the upgrading of four existing culverts, the realignment and upgrading of two hairpin bends/watercourse crossing points. Therefore, in line with AMAFA comment received, an HIA has been commissioned for the proposed road upgrade project.</p>
Archaeological site	YES	NO	<p>“The proposed development consists a road upgrade within an existing transformed servitude and is, therefore, not a threat to cultural resources. Any deviation beyond 2m of the existing servitude is rendered a new road and will automatically trigger a Heritage Impact Assessment as previous surveys identified several graves and a cemetery along the road. The developer is required to ensure that the construction team operates within the existing servitude to avoid inadvertent damage to graves.”</p> <p>Graves and a cemetery have, therefore, been identified by AMAFA, within the study area.</p> <p>The road upgrade has been designed to align with the existing roads for the most part, there will be widening by 3 to 5 metres in certain areas, realignment</p>

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			of approximately 500m of road, the upgrading of four existing culverts, the realignment and upgrading of two hairpin bends/watercourse crossing points. Therefore, in line with AMAFA comment received, an HIA has been commissioned for the proposed road upgrade project.
Other land uses (describe)	YES	NO	

### 6. 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 palaeontological sites, on or within 20m of the site?

YES	NO
-----	----

If YES, contact a specialist recommended by AMAFA to conduct a heritage impact assessment. The heritage impact assessment must be attached as an appendix to this report.

An HIA has been commissioned for the project.

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Briefly explain the recommendations of the specialist:

The Edendale area is a historical landscape associated with Christian families of Griqua, Rolong, Sotho, Tlokwa, Hlubi and Swazi origin that saw its status of a successful African village threatened by urban sprawl (Pietermaritzburg labourers) in the 1930s and 1940s. This renders the area a rich cultural landscape where significant sites have been identified. It is noted that this particular development is a road upgrade within existing servitude and is therefore not a threat to cultural resources.

Since this is an access road upgrade into an all weather road, in terms of the KwaZulu Natal Heritage Act No.4 of 2008 and the National Heritage Resources Act No.25 of 1999 (Section 38 (1)), we have no objection to the proposed development strictly within the existing transformed servitude. Any deviation beyond 2m of the existing servitude is rendered a new road and will automatically trigger a Heritage Impact Assessment as previous surveys identified several graves and a cemetery along the road. The developer is required to ensure that the construction team operates within the existing servitude to avoid inadvertent damage to graves.

You are also required to adhere to the below-mentioned standard conditions:

Conditions:

1. AMAFA should be contacted if any heritage objects are identified during earthmoving activities and all development should cease until further notice.
2. No structures older than sixty years or parts thereof are allowed to be demolished altered or extended without a permit from AMAFA.
3. No activities are allowed within 50m of a site, which contains rock art.
4. AMAFA should be contacted if any graves are identified during construction and the following procedure is to be followed:

stop construction

report finding to local police station

report to AMAFA to investigate.

Should you have any further queries, please contact the designated official using the case number quoted above in the case header.

Graves and a cemetery have, therefore, been identified by AMAFA, within the study area.

The road upgrade has been designed to align with the existing roads for the most part, there will be widening by 3 to 5 metres in certain areas, realignment of approximately 500m of road, the upgrading of four existing culverts, the realignment and upgrading of two hairpin bends/watercourse crossing points. Therefore, in line with AMAFA comment received, an HIA has been commissioned for the proposed road upgrade project.

Will any building or structure older than 60 years be affected in any way?  YES  NO



Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

YES	NO
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If YES, please submit the necessary application to AMAFA and attach proof thereof to this report.

## SECTION D: PUBLIC PARTICIPATION

### 1. ADVERTISEMENT

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
  - (i) the site where the activity to which the application relates is or is to be undertaken; and
  - (ii) any alternative site mentioned in the application;
- (b) giving written notice to—
  - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
  - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
  - (v) the local and district municipality which has jurisdiction in the area;
  - (vi) any organ of state having jurisdiction in respect of any aspect of the activity (as identified in the application form for the environmental authorization of this project); and
  - (vii) any other party as required by the competent authority;
- (c) placing an advertisement in—
  - (i) one local newspaper; or
  - (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and

- (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
  - (i) illiteracy;
  - (ii) disability; or
  - (iii) any other disadvantage.

## 2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—
  - (i) that an application for environmental authorization has been submitted to the KZN Department of Agriculture & Environmental Affairs in terms of the EIA Regulations, 2010;(ii)
  - (iii) a brief project description that includes the nature and location of the activity to which the application relates;
  - (iv) where further information on the application can be obtained; and
  - (iv) the manner in which and the person to whom representations in respect of the application may be made.

## 3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

## 4. DETERMINATION OF APPROPRIATE PROCESS

The EAP must ensure that the public participation process is according to that prescribed in regulation 54 of the EIA Regulations, 2010, but may deviate from the requirements of subregulation 54(2) in the manner agreed by the KZN Department of Agriculture & Environmental Affairs as appropriate for this application. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate.

Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

## 5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before this application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations (regulation 57 in the EIA Regulations, 2010) and be attached as Appendix E to this report.

## 6. PARTICIPATION BY DISTRICT, LOCAL AND TRADITIONAL AUTHORITIES

District, local and traditional authorities (where applicable) are all key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of this application and provided with an opportunity to comment.

Has any comment been received from the district municipality?

YES NO

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

Please be advised that the uMgungundlovu District Municipality has no comments on the application.  
Thank you  
Mandisa Khomo

Has any comment been received from the local municipality?

YES NO

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

BID Comment received from Msunduzi Municipality:  
The following preliminary comments are submitted for your information and attention:  
1. The assessment must be informed by the Msunduzi Environmental Management Framework (EMF) and Conservation Plan (C-Plan). Whilst reference is made in the BID to the EKZNW C-Plan, the Msunduzi C-Plan and EMF are at a higher resolution and must therefore inform this study. The Msunduzi EMF and C-Plan must be referred to in the Basic Assessment Report and the site specific reports generated from the EMF and C-Plan must be attached as Annexures to the Basic Assessment Report. In addition any environmental constraints relating to the site raised by the EMF must be specifically evaluated and addressed. The site specific EMF reports referred to above can be obtained from this Unit. Please contact Mr Gerald Naicker in this regard on 033 3923244 or on email gerald.naicker@msunduzi.gov.za  
2. Particular attention should be paid to the management of storm water from the road surface. The adjacent Willowfountain Stream is already degraded and incised possibly as a result of increased storm water flows and measures must therefore be put in place to limit the impact of storm water discharges into the stream.  
3. The EMP must include measures to control alien invasive plants emerging within areas disturbed by the construction activities, particularly at the watercourse crossings.

Has any comment been received from a traditional authority?

YES NO

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

## Basic Assessment Report

12-09-2013 BID Comment received from AMAFA  
Willowfontein Access Road Upgrade, Ward 14, Edendale.  
Our Ref: SAH 13/ CaselD: 3442  
Bernadet Pawandiwa  
Date: Thursday September 12, 2013  
Tel: 033 394 6543  
Email: bernadep@amafapmb.co.za Page No: 1  
CaselD: 3442

In terms of Section 38(8) of the National Heritage Resources Act (Act 25 of 1999) and the KwaZulu-Natal Heritage Act (Act 4 of 2008)

Proposed Willowfontein Road Upgrade, Edendale, Msunduzi Municipality (WARD 14).

We acknowledge receipt of your invitation for comment with regards to the proposed development. The object of AMAFA is to administer, conserve and protect heritage resources of the Province within the terms of KZN Heritage Act no. 4 (2008) and the National Heritage Resources Act No 25 of 1999.

The Edendale area is a historical landscape associated with Christian families of Griqua, Rolong, Sotho, Tlokwa, Hlubi and Swazi origin that saw its status of a successful African village threatened by urban sprawl (Pietermaritzburg labourers) in the 1930s and 1940s. This renders the area a rich cultural landscape where significant sites have been

identified. It is noted that this particular development is a road upgrade within existing servitude and is therefore not a threat to cultural resources.

Since this is an access road upgrade into an all-weather road, in terms of the KwaZulu Natal Heritage Act No.4 of 2008 and the National Heritage Resources Act No.25 of 1999 (Section 38 (1)), we have no objection to the proposed development strictly within the existing transformed servitude. Any deviation beyond 2m of the existing servitude is rendered a new road and will automatically trigger a Heritage Impact Assessment as previous surveys identified several graves and a cemetery along the road. The developer is required to ensure that the construction team operates within the existing servitude to avoid inadvertent damage to graves.

You are also required to adhere to the below-mentioned standard conditions:

Conditions:

1. AMAFA should be contacted if any heritage objects are identified during earthmoving activities and all development should cease until further notice.
2. No structures older than sixty years or parts thereof are allowed to be demolished altered or extended without a permit from AMAFA.
3. No activities are allowed within 50m of a site, which contains rock art.
4. AMAFA should be contacted if any graves are identified during construction and the following procedure is to be followed:

stop construction

report finding to local police station

report to AMAFA to investigate.

Should you have any further queries, please contact the designated official using the case number quoted above in the case header.

## 7. CONSULTATION WITH OTHER STAKEHOLDERS

Any stakeholder that has a direct interest in the site or property, such as servitude holders and service providers, should be informed of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

YES  NO

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

## Basic Assessment Report

WESSA – Re BID 08-04-2013

Proposed Upgrade of Willowfountain Road, Edendale

Background Information Document:

Thank you for inviting comment from WESSA however we do not wish to register as an I&AP. We are satisfied that should a site specific EMP be implemented for each of the stream crossing significant damage to environment can be avoided.

We support the construction of formalized crossings and improved stormwater control.

Regards

Carolyn Schwegman

EIA Co-ordinator

WESSA KZN Region

EKZN Wildlife - Re BID 02/04/2013

Proposed Willowfountain Road Upgrade, Edendale, Msunduzi Municipality (Ward 14) District Municipality: Umgungundlovu

The Draft Basic Assessment Report (*should read BID*), for the above-mentioned application was recently reviewed by Ezemvelo's IEM Planning staff and the comments for the application can be found attached. Please do not hesitate to contact this office if any further biodiversity concerns are discovered during the remainder of the process, or if you have any questions with regards to the content of the response.

Kindly acknowledge receipt of this correspondence.

Kind regards.

DB.

Ezemvelo KZN Wildlife Planning Division: IEM Section

Proposed Willowfountain Road Upgrade, Edendale, Msunduzi Municipality (Ward 14) District Municipality: uMgungundlovu

Thank you for forwarding the above-mentioned application to Ezemvelo KZN Wildlife (Ezemvelo) for review and comment. Whilst Ezemvelo KZN Wildlife endeavors to process applications as quickly as possible, there may be delays in responding due to current resource constraints.

We sincerely regret any inconvenience caused. Please direct any queries in this regard to the Acting Co-ordinator IEM on (tel.) 033 845 1425 or (e-mail) [thambud@kznwildlife.com](mailto:thambud@kznwildlife.com).

Thank you in advance for your support and understanding.

Yours sincerely

D. Berriman.

DWA – Re BID

N. Leburu forwarded BID to Manisha Thakurdin.

10-06-2013 MT requested hard copy of the BID.

12-06-2013 DWA comments on BID forwarded by way of fax:

Background Information Document for the Proposed Willowfountain Road Upgrade, Edendale (Ward 14).

Reference is made to the above-mentioned document received by this Office.

The following matters need to be addressed:

- (1) Management of solid waste generated during the construction phase and post construction phase.
- (2) Management of any hazardous waste material generated pre and post construction.

(3) Identification of any environmental sensitive areas and water resources such as wetlands, streams, rivers, etc, as well as possible pollution impacts and mitigation measures of such water resources.

(4) Stormwater management plan/system including the prevention of erosion and sedimentation.

(5) Sewage treatment and disposal i.e. waste water management. This should also include the type of toilet facilities to be provided for construction workers.

(6) Spill contingency plans

(7) Environmental Management Plan

In addition the following points need to be taken into consideration:

- The removal of any indigenous trees would need to be authorised by the Department of Forestry, Fisheries and Agriculture.

- Mr Norman Ward from the Water Resources Management Section of this Department must be contacted on (031) 336 2700 in order to obtain the necessary authorisations (licence, etc.), should there be any **alteration** to the bed, banks, course or characteristics of a watercourse or any **impedance or diversion** of flow of a watercourse as well as any **abstraction** and/or **storage** of water.

- Please note that all wetland areas must be delineated according to this Departments guideline entitled "*A practical field procedure for identification and delineation of wetlands and riparian areas.*" (DWAF, 2005).

This Department awaits required information in order to provide more detailed comments.

Please do not hesitate to contact this office should you have any concerns, comments or queries.

Yours faithfully

Nonkululeko Mokoena

DOT- Re BID

10-04-2013 Initial Comments on BID received.

Ref: T10/2/2/159/240

Proposed Willowfontain Road Upgrade

1. Your application dated 25 March 2013 refers.

2. The application was received on 9 April 2013.

3. You are advised that the application is in the process of being investigated and that you will be advised accordingly of this Department's comments.

4. When communicating with this office, please supply the above mentioned file reference.

12-06-2013 DOT Comments on BID received.

M. Schmid forwarded comments.

Proposed Willowfontain Road Upgrade Edendale: Situate in the Msunduzi Municipality: situate in the Administrative District and Province of KwaZulu-Natal.

1. Your letter dated March 2013 refers.

2. In terms of the KwaZulu-Natal Provincial Road Act No. 4 of 2001 this Department has no objections to the abovementioned PROPOSED ROAD UPGRADE.

3. This approval shall not exempt the applicant from the provisions of any other law.

Yours faithfully.

M. Schmid.

Head Transport

ESKOM Re BID

## Basic Assessment Report

### **20-03-2013 Eskom – Re BID**

We refer to the above mentioned application's documents in respect of Willowfountain Road, Pietermaritzburg.

Please take note and ensure that the following is carried forward in your documents, that in respect of Eskom's powerlines, no encroachments are permitted within the following in respect of our servitudes:

132kV lines = 18 metres on either side of the centre line  
88kV lines = 16 metres on either side of the centre line  
33kV lines = 16 metres on either side of the centre line  
22kV lines = 12 metres on either side of the centre line  
11kV lines = 12 metres on either side of the centre line

Eskom's underground cables are usually layed 1 metre to 1.5 metres, when excavation is anticipated, ensure you check with our offices for cable positions.

Prior to the approval of the development, the owner shall lodge with the development Administration, for approval by the Minister, a certificate furnished by Eskom, the local municipality or other supplier of electricity for the benefit of the inhabitants of the development, to the effect that all substation servitudes required by it will be provided and have been depicted on the general plan.

Trees should not be planted within their horizontal falling distance of the power lines.

The roads crossing under the power lines may only cross in safe areas where, what is known as "broken conductor conditions" as defined in the Occupational Health & Safety Act 85 of 1993, are met. Generally, roads located within 10 m of wood poles are within legal safety requirements. This will be applicable to all property entrances adjoining existing roads.

The ground clearance, as prescribed by the law has to be maintained, the natural ground levels within the servitude area are therefore to be retained, and no soil, or any other material, may be stock piled within the servitude area.

Regarding the use of machinery, the operators are seldom informed as to the extreme danger of using equipment in close proximity to the live overhead conductors. No soil is to be disturbed, by any civil work, within a 3 m radius of any pole or stay wire. Where civil work is done outside of this radius the soil must be suitably sloped and protected so as not to cause erosion in or onto the 3 metre radius of undisturbed soil.

Please note that the applicable building restrictions either side of any existing powerline must be adhered to when planning new buildings or developments on the property.

Please further take note that the costs of relocations of any of Eskom's infrastructure, will be for the account of the developer.

Applications can be lodged via Eskom's call centre on 086 003 7566.

Please further take note that if any 275kV, 400kV or 765 kV Lines are involved, you need to send a copy of the application to Eskom's transmission division at Megawatt Park.

Regards

Michelle

Eskom Holdings SOC Limited

Lands and Rights Section

Land Development Department

Telkom – Re BID

02-04-2013 Network Infrastructure Provisioning, Wayleave Management, Eastern Region  
Sthembiso Mchunu

Ref. No:EWIP\_NKWP0578\_13

Basic Assessment Process for the Proposed Willowfountain Road Upgrade

Your notification dated 19 March 2013 refers.

In reference to the Electronic Communications Act No. 36 of 2005.

No telecommunication infrastructure owned by Telkom SA is affected.

Approval of the proposed is valid for six months. If construction has not yet commenced within this time period then the file must be resubmitted for approval. Any changes and deviations from the original planning during construction must be immediately communicated to this office.

Yours faithfully.

Raymond Couch  
Operations Manager.

## SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the 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. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

Msunduzi Municipality Stream crossings

1. The assessment must be informed by the Msunduzi Environmental Management Framework (EMF) and Conservation Plan (C-Plan) Whilst reference is made in the BID to the EKZNW C-Plan, the Msunduzi C-Plan and EMF are at a higher resolution and must therefore inform this study. The Msunduzi EMF and C-Plan must be referred to in the Basic Assessment Report and the site specific reports generated from the EMF and C-Plan must be attached as Annexures to the Basic Assessment Report. In addition any environmental constraints relating to the site raised by the EMF must be specifically evaluated and addressed.

a. Particular attention should be paid to the management of storm water from the road surface. The adjacent Willowfountain Stream is already degraded and incised possibly as a result of increased storm water flows and measures must therefore be put in place to limit the impact of storm water discharges into the stream.

b. The EMPr must include measures to control alien invasive plants emerging within areas disturbed by the construction activities, particularly at the watercourse crossings.

2. The Edendale area is an historical landscape associated with Christian families of Griqua, Rolong, Sotho, Tlokwa, Hlubi and Swazi origin that saw its status of a successful African village threatened by urban sprawl (Pietermaritzburg labourers) in the 1930s and 1940s. This renders the area a rich cultural landscape where significant sites have been identified. It is noted that this particular development is an access road upgrade into an all-weather road within existing transformed servitude and is therefore not a threat to cultural resources, and AMAFA, therefore, has no objection to the proposed development **strictly within the existing transformed servitude**. Any deviation beyond 2m of the existing servitude is rendered a new road and will automatically trigger a Heritage Impact Assessment as previous surveys identified several graves and a cemetery along the road. The developer is required to ensure that the construction team operates within the existing servitude to avoid inadvertent damage to graves. You are also required to adhere to the below-mentioned standard conditions:

Conditions:

- i. AMAFA should be contacted if any heritage objects are identified during earthmoving activities and all development should cease until further notice.
- ii. No structures older than sixty years or parts thereof are allowed to be demolished altered or



extended without a permit from AMAFA.

iii. No activities are allowed within 50m of a site, which contains rock art.

iv. AMAFA should be contacted if any graves are identified during construction and the following procedure is to be followed:

stop construction

report finding to local police station

report to AMAFA to investigate.

Should you have any further queries, please contact the designated official using the case number quoted above in the case header.

3. WESSA does not wish to register as an I&AP and they are satisfied that should a site specific EMP be implemented for each of the stream crossing significant damage to environment can be avoided.

WESSA support the construction of formalized crossings and improved stormwater control.

4. DWA require that the following matters be addressed:

(1) Management of solid waste generated during the construction phase and post construction phase.

(2) Management of any hazardous waste material generated pre and post construction.

(3) Identification of any environmental sensitive areas and water resources such as wetlands, streams, rivers, etc, as well as possible pollution impacts and mitigation measures of such water resources.

(4) Stormwater management plan/system including the prevention of erosion and sedimentation.

(5) Sewage treatment and disposal i.e. waste water management. This should also include the type of toilet facilities to be provided for construction workers.

(6) Spill contingency plans

(7) Environmental Management Plan

In addition the following points need to be taken into consideration:

- The removal of any indigenous trees would need to be authorised by the Department of Forestry, Fisheries and Agriculture.

- Mr Norman Ward from the Water Resources Management Section of this Department must be contacted on (031) 336 2700 in order to obtain the necessary authorisations (licence, etc.), should there be any alteration to the bed, banks, course or characteristics of a watercourse or any impedance or diversion of flow of a watercourse as well as any abstraction and/or storage of water.

- Please note that all wetland areas must be delineated according to this Departments guideline entitled "A practical field procedure for identification and delineation of wetlands and riparian areas." (DWAf, 2005).

This Department awaits required information in order to provide more detailed comments.

Please do not hesitate to contact this office should you have any concerns, comments or queries.

5. DOT requested/noted the following:

- When communicating with this office, please supply the above mentioned file reference.

- In terms of the KwaZulu-Natal Provincial Road Act No. 4 of 2001 this Department has no objections to the abovementioned PROPOSED ROAD UPGRADE.

- This approval shall not exempt the applicant from the provisions of any other law.

6. Eskom require that the following points be included in the report:

The following items must be carried forward in your documents, that in respect of Eskom's powerlines, no encroachments are permitted within the following in respect of our servitudes:

132kV lines = 18 metres on either side of the centre line  
88kV lines = 16 metres on either side of the centre line  
33kV lines = 16 metres on either side of the centre line  
22kV lines = 12 metres on either side of the centre line  
11kV lines = 12 metres on either side of the centre line

- Eskom's underground cables are usually layed 1 metre to 1.5 metres, and when excavation is anticipated, cable positions must be checked with Eskom offices.

- The owner shall lodge with the development Administration, for approval by the Minister, a certificate furnished by Eskom, the local municipality or other supplier of electricity for the benefit of the inhabitants of the development, to the effect that all substation servitudes required by it will be provided and have been depicted on the general plan, prior to the approval of the development.

- Trees should not be planted within their horizontal falling distance of the power lines.

- The roads crossing under the power lines may only cross in safe areas where, what is known as "broken conductor conditions" as defined in the Occupational Health & Safety Act 85 of 1993, are met. Generally, roads located within 10 m of wood poles are within legal safety requirements. This will be applicable to all property entrances adjoining existing roads.

The ground clearance, as prescribed by the law has to be maintained, the natural ground levels within the servitude area are therefore to be retained, and no soil, or any other material, may be stock piled within the servitude area.

- For the use of machinery, the operators are seldom informed as to the extreme danger of using equipment in close proximity to the live overhead conductors. No soil is to be disturbed, by any civil work, within a 3 m radius of any pole or stay wire. Where civil work is done outside of this radius the soil must be suitably sloped and protected so as not to cause erosion in or onto the 3 metre radius of undisturbed soil.

- It must be noted that the applicable building restrictions either side of any existing powerline must be adhered to when planning new buildings or developments on the property.

- It must also be noted that the costs of relocations of any of Eskom's infrastructure, will be for the account of the developer.

- Applications can be lodged via Eskom's call centre on 086 003 7566.

- It must be noted that if any 275kV, 400kV or 765 kV Lines are involved, a copy of the application must be sent to Eskom's transmission division at Megawatt Park.

7. Telkom require the following to be included:

- No telecommunication infrastructure owned by Telkom SA is affected.

- Approval of the proposed is valid for six months. If construction has not yet commenced within this time period then the file must be resubmitted for approval. Any changes and deviations from the original planning during construction must be immediately communicated to this office.

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached as Appendix E to this report):

Please refer also to Comments and Response report attached to this report as Appendix E.

Msunduzi Municipality Stream crossings

1. The assessment has been informed by the Msunduzi Environmental Management Framework (EMF) and Conservation Plan (C-Plan) together with the site specific reports generated from the EMF and C-Plan which are attached as Annexures to the draft Basic Assessment Report. Environmental constraints relating to the site raised by the EMF have been specifically evaluated and addressed.

a. Stormwater Management: management of storm water from the road surface has been included in the draft Basic Assessment Report. It is noted that the adjacent Willowfontain Stream is already degraded and incised possibly as a result of increased storm water flows and measures have therefore been included in the draft Basic Assessment Report to help limit the impact of storm water discharges into the stream.

b. An EMPr has been drafted and includes measures to control alien invasive plants emerging within areas disturbed by the construction activities, particularly at the watercourse crossings.

2. It has been noted in the report, that the Edendale area is an historical landscape associated with Christian families of Griqua, Rolong, Sotho, Tlokwa, Hlubi and Swazi origin that saw its status of a successful African village threatened by urban sprawl (Pietermaritzburg labourers) in the 1930s and 1940s, which renders the area a rich cultural landscape where significant sites have been identified. It has also been noted that this particular development is an access road upgrade into an all-weather road within existing transformed servitude and is therefore not a threat to cultural resources, and AMAFA, therefore, has no objection to the proposed development strictly within the existing transformed servitude; however, any deviation beyond 2m of the existing servitude is rendered a new road and will automatically trigger a Heritage Impact Assessment as previous surveys identified several graves and a cemetery along the road. It has also been noted in the report that the developer is required to ensure that the construction team operates within the existing servitude to avoid inadvertent damage to graves, and in addition to this the following standard conditions have been imposed:

Conditions:

i. AMAFA should be contacted if any heritage objects are identified during earthmoving activities and all development should cease until further notice.

ii. No structures older than sixty years or parts thereof are allowed to be demolished altered or extended without a permit from AMAFA.

iii. No activities are allowed within 50m of a site, which contains rock art.

iv. AMAFA should be contacted if any graves are identified during construction and the following procedure is to be followed:

stop construction

report finding to local police station

report to AMAFA to investigate.

The project involves the construction of a 1.6km, 6m wide black top all-weather road complete with drainage and watercourse crossings, storm water drains and a pedestrian walkway. The road upgrade has been designed to align with the existing roads for the most part, there will be widening by 3 to 5 metres in certain areas, realignment of approximately 500m of road, the upgrading of four existing culverts, the realignment and upgrading of two hairpin bends/watercourse crossing points.

An HIA has, therefore, been commissioned for the project as the proposed road upgrade will extend beyond 2m of the existing road servitude in certain places.

3. A site specific EMPr has been drafted for the stream crossings, in order to help to avoid

significant damage to the environment, formalized crossing construction and improved stormwater control have been included.

4. The following matters required by DWA have been included and addressed in the draft Basic Assessment Report:

- (1) Solid waste management, including the management of solid waste generated during the construction phase and post construction phase.
- (2) Management of any hazardous waste material generated pre and post construction.
- (3) Identification of any environmental sensitive areas and water resources such as wetlands, streams, rivers, etc, as well as possible pollution impacts and mitigation measures of such water resources.
- (4) Stormwater management plan/system including the prevention of erosion and sedimentation.
- (5) Sewage treatment and disposal i.e. waste water management. This should also include the type of toilet facilities to be provided for construction workers.
- (6) Spill contingency plans
- (7) Environmental Management Plan

In addition the following points need to be taken into consideration:

- The removal of any indigenous trees would need to be authorised by the Department of Forestry, Fisheries and Agriculture.
- Mr Norman Ward from the Water Resources Management Section of this Department must be contacted on (031) 336 2700 in order to obtain the necessary authorisations (licence, etc.), should there be any alteration to the bed, banks, course or characteristics of a watercourse or any impedance or diversion of flow of a watercourse as well as any abstraction and/or storage of water.
- Please note that all wetland areas must be delineated according to this Departments guideline entitled "A practical field procedure for identification and delineation of wetlands and riparian areas." (DWAF, 2005).

The wetland delineation report has been compiled in accordance with the cited Department guidelines.

5. The following items as requested by DOT have been included in the Draft Basic Assessment report:

- In terms of the KwaZulu-Natal Provincial Road Act No. 4 of 2001, DOT has no objections to the abovementioned PROPOSED ROAD UPGRADE.
- This approval does not exempt the applicant from the provisions of any other law.

6. The following items have been included in the Draft Basic Assessment report, in response to comments received from Eskom:

- The Eskom information provided must be carried forward in the project reports and, in respect of Eskom's powerlines, no encroachments are permitted within the following in respect of Eskom servitudes:

132kV lines = 18 metres on either side of the centre line

88kV lines = 16 metres on either side of the centre line

33kV lines = 16 metres on either side of the centre line

22kV lines = 12 metres on either side of the centre line

11kV lines = 12 metres on either side of the centre line

- Eskom underground cables are usually laid at a depth of 1 metre to 1.5 metres, therefore, when excavation is anticipated, contractors must ensure and check with Eskom offices for cable positions.
- Prior to the approval of the development, the owner must lodge with the development Administration, for approval by the Minister, a certificate furnished by Eskom, the local municipality or other supplier of electricity for the benefit of the inhabitants of the development, to the effect that all substation servitudes required by it will be provided and have been depicted on the general plan.
- Trees should not be planted within their horizontal falling distance of the power lines.
- Any road crossing under power lines may only occur in safe areas where, what is known as “*broken conductor conditions*” as defined in the Occupational Health & Safety Act 85 of 1993, are met. Generally, roads located within 10 m of wood poles are within legal safety requirements. This will be applicable to all property entrances adjoining existing roads.
- The ground clearance, as prescribed by the law has to be maintained, the natural ground levels within the servitude area are therefore to be retained, and no soil, or any other material, may be stock piled within the servitude area.
- Machinery use on site, machinery operators must be properly informed as to the extreme danger of using equipment in close proximity to live overhead conductors. No soil is to be disturbed, by any civil work, within a 3 m radius of any pole or stay wire. Where civil work is done outside of this radius the soil must be suitably sloped and protected so as not to cause erosion in or onto the 3 metre radius of undisturbed soil.
- All applicable building restrictions either side of any existing powerline must also be adhered to when planning new buildings or developments on the property.
- The cost for the relocation of any of Eskom's infrastructure, will be for the account of the developer and applications must be lodged via Eskom's call centre on 086 003 7566.
- Where any 275kV, 400kV or 765 kV Lines are involved, a copy of the application must be sent to Eskom's transmission division at Megawatt Park.

7. Telkom require the following:

It is noted that Telkom have commented to state that no telecommunication infrastructure owned by Telkom SA is affected.

Telkom have also commented that this approval of the proposed is valid for six months, and if construction has not yet commenced within this time period then the file must be resubmitted for approval, and any changes or deviations from the original planning during construction must be immediately communicated to Telkom's offices.

## 2. 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

### 2.1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN PHASE

#### a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the planning and design phase:

#### Alternative S1 (preferred alternative)

## Basic Assessment Report

**Direct impacts:**

- Surveyors on site may damage vegetation in order to obtain line of sight / while walking around the site.
- Survey activities must be conducted within the existing road servitude, any deviation beyond 2m of the existing servitude is rendered a new road and will automatically trigger a Heritage Impact Assessment as previous surveys identified several graves and a cemetery along the road. The developer is required to ensure that the construction team operates within the existing servitude to avoid inadvertent damage to graves.

**Indirect impacts:**

- Damaged vegetation may take a while to recover, and this may facilitate the establishment of weeds / alien invasive sp.
- Erosion may result should damaged vegetation not recover.

**Cumulative impacts:**

- Less healthy and diverse composition of vegetation.
- Potential for soil erosion.

**Alternative S2 (if any)**

**Direct impacts:**

**Indirect impacts:**

**Cumulative impacts:**

**No-go alternative (compulsory)**

**Direct impacts:**

- No vegetation would be disturbed.
- The existing stream crossings would remain with no upgrade.
- Erosion potential would remain.
- Access to local households in the area, and the area in general, including schools, sportsfield/recreational areas and shops and the greater road network would remain poor.
- Negative impacts associated with the design and planning of the road would be avoided.
- There would be no potential negative impacts in terms of the graves and cemetery identified along the road.

**Indirect impacts:**

- The lack of improved access may reduce mobility thus also possibly reducing the potential economic growth in the area.
- Mobility of vehicles may be reduced and it may be difficult to establish utilities and amenities (e.g. electricity, water) in the area without constructing formal access roads.
- The 'status quo' would remain unchanged.
- There would be no impact on vegetation etc within the new road servitude.

**Cumulative impacts:**

By continually utilising an access road in poor condition, the road erosion may extend beyond the road width and residents may traverse the road edges and increase the extent of erosion. The formalisation of the roads will help reduce the occurrence of potholes, erosion ruts and water logged soils and assist in the management of stormwater and erosion issues in the affected area.

Indicate mitigation measures to manage the potential impacts listed above:

**Alternative S1**

**Alternative S2**

- Marking of survey points must be done with the Engineers approval.
- Vegetation clearing must be kept to a minimum during the survey operations.
- Survey work must remain within the existing servitude, any deviation beyond 2m of the existing servitude is rendered a new road and will automatically trigger a Heritage Impact

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Assessment as previous surveys identified several graves and a cemetery along the road. The developer is required to ensure that the construction team operates within the existing servitude to avoid inadvertent damage to graves.	
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### b. Process, technology, layout or other alternatives

List the impacts associated with any process, technology, layout or other alternatives that are likely to occur during the planning and design phase (please list impacts associated with each alternative separately):

There is no process, technology or layout alternative for the proposed road upgrade. The proposed road upgrade involves the upgrade of an existing gravel road and the upgrade of existing watercourse crossings and the proposed road layout has been designed with minimal changes to the existing vertical and horizontal alignment of the existing road, however, there will be widening by 3 to 5 metres in certain areas, realignment of approximately 500m of road, the upgrading of four existing culverts, and the realignment and upgrading of two hairpin bends/watercourse crossing points.

The watercourse crossing structures will be upgraded and designed to minimise impact on the streams and banks.

The project need and desirability is specific to the location that it is intended for. The proposed road upgrade and construction is machine intensive, involving the upgrade of an existing road, therefore, no technology alternatives have been considered. The proposed tar road is low maintenance, cost effective and has a relatively short installation period.

#### Alternative A1 (preferred alternative)

**Direct impacts:**

**Indirect impacts:**

**Cumulative impacts:**

#### Alternative A2 (if any)

**Direct impacts:**

**Indirect impacts:**

**Cumulative impacts:**

#### No-go alternative (compulsory)

The current *status quo* would remain unchanged and the erosion and stormwater runoff currently occurring on site would continue and potentially exacerbate. There would be no improved access for local residents in the area.

**Direct impacts:** None identified, however, the existing stream crossing structures would remain in place together with the existing gravel road.

**Indirect impacts:** None identified.

**Cumulative impacts:** None identified.

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1:	Alternative A2:

## 2.2. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION PHASE

### a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the construction phase:

#### Alternative S1 (preferred site)

##### **Direct impacts:**

- **Local traffic** and mobility of local people might be affected by construction activities.
- **Health and Safety** – Construction vehicles and activities could pose a safety risk to local residents and workers, strict control measures should be implemented.
- **Indigenous vegetation** may be disturbed and some may be completely destroyed. The four watercourse crossings have been identified as sensitive habitats.
- **Fauna** may be disturbed during the construction activities.
- **Hydrology** there may be an impact on stream flows during construction, however, the proposed road upgrade and the proposed watercourse crossing structures which will be fitted with culvert headwall details and splitter blocks on the outlet side have been designed to help to reduce water velocity and erosion/scour potential, together with a section of reno mattress protection below the headwall structure, should help to reduce erosion potential.
- **Soil** may be disturbed, and soil erosion may occur. Stormwater management associated with the proposed development should be incorporated into the site design and should take into consideration the erosion potential of the region.
- **Air pollution** including dust will likely be generated by activities during construction, but this will cease after construction is completed. Dust is currently a problem in dry conditions when vehicles travel along the existing informal road. Dust will be generated by the activity during construction but this may reduce to nil after construction.
- Spillages of **hazardous substances**, such as oil and diesel may occur.
- Incorrect disposal of construction **waste** may cause pollution, including ground and surface water pollution and pollution of neighbouring properties.
- **Noise** pollution may be generated by construction activities.
- Adjacent **graves** and the cemetery identified may be disturbed during construction works.
- **Social** - There may be an increased number of people in the area during the construction period.  
There will be improved access for local communities through the improvement of the existing local access road upgrade to a formal municipal black top all weather road.
- **Existing services** – There are existing water pipelines, sewers and stormwater drain servitudes and there are also telephone poles and power poles in the area. There are also large overhead powerlines in the study area. The servitudes for these services must be observed and no work may take place within these servitudes. Any disturbance to servitudes will need to be checked with the relevant service provider prior to work taking place. Eskom has provided details regarding any encroachment into Eskom servitudes.
- **Material sourcing** – Off-site environmental degradation may be caused as a result of the use of unpermitted materials sourcing.
- Improved access for local communities through the improvement of the local access road being upgraded to a formal gravel road.
- Improved stream crossing structures to allow free water flow of the affected streams.

##### **Indirect impacts:**

- The construction activities may result in a temporary closure of the existing access



road sections, hampering the mobility of the local residents and disrupting traffic passing through.

- Removal of indigenous vegetation may have an effect on local biodiversity and other species within the ecosystem.
- Disturbance of soil may result in increased soil erosion on the road flanks, notably during storm events.
- Storm water management associated with the proposed development should be incorporated into the site design and should take into consideration the erosion potential of the region.
- Improper management of waste may result in the pollution of local ground and surface water. Construction waste generated by the activity may pollute the area and even possibly the properties of the people living in the immediate surroundings.
- Road Safety – The proposed development may result in an increase in vehicle speeds along the route.
- Improved access may promote greater opportunity for traders to access local towns thus promoting economic growth in the area.
- Improved access will allow greater mobility in general for example it will facilitate access for utilities and service provisions and amenities such as electricity, water and emergency vehicles.

**Labour and materials** are to be sourced locally, wherever possible, which will help to promote **economic upliftment** during construction. Skills learnt by local labourers may be applied to future work opportunities.

**Cumulative impacts:**

**Road Safety** - The proposed road upgrade will result in the improvement of the existing access road of the Willowfountain area. Residents of Willowfountain would have improved access to their homes and the area in general, including schools, sportsfield/recreational areas and shops and the greater road network. This may result in increased traffic in the area, as well as increased numbers of vehicles and travelling speeds, however, at this stage this is unlikely to be at very significant levels. Site specific traffic management measures could be put in place to help manage this potential impact. There may be an increase in social interaction between homesteads and the local community which may have positive and negative cumulative impacts. These impacts should be considered and outlined in a project specific EMP.

**Alternative S2 (if any)**

**Direct impacts:**

**Indirect impacts:**

**Cumulative impacts:**

**No-go alternative (compulsory)**

**Direct impacts:**

- Access to the Willowfountain area and surrounding areas would remain poor.
- The lack of a proper access road may result in increased erosion of the existing road notably during the rainy season.
- Negative impacts associated with the construction of the road will be avoided. The 'status quo' would remain unchanged. The "rural" nature of the area and the "sense of place" would remain.

**Indirect impacts:**

- The lack of improved access will reduce mobility to residents of the Willowfountain area, thus possibly also reducing potential economic growth in the area.
- Mobility of vehicles may be reduced and it may be difficult to establish additional infrastructure.
- Emergency vehicle access would be limited.
- There would be a lack of economic development and there would be no benefit felt by the local community in terms of labour creation.

**Cumulative impacts:**

## Basic Assessment Report

Impacts such as soil erosion and surface water runoff may exacerbate as a result of the continued use of the existing gravel access road. There would also be no upgrade of existing stream crossing structures.

Indicate mitigation measures to manage the potential impacts listed above:

**Alternative S1**

**Alternative S2**

<b>Vegetation disturbance</b>	
<ul style="list-style-type: none"> <li>• Riparian vegetation and areas to be identified and demarcated (danger tape and fencing), and disturbances must be limited to the working corridor/road servitude only.</li> <li>• Only vegetation in the immediate vicinity of the construction site and the proposed road should be removed, and only directly prior to construction commencing.</li> <li>• Once construction has been completed, indigenous vegetation should be re-installed wherever possible over the disturbed area, and as close to area of source as possible.</li> <li>• All alien invasive vegetation which emerges should be removed according to accepted alien invasive plant removal techniques for each species for two years after the completion of the construction phase.</li> <li>• Any vegetation which is to be removed for post construction rehabilitation must be re-instated and replanted as soon as construction activities are complete. Seeding of suitable indigenous grasses must be effected on denuded areas and removed plant material re-planted as close to area of source as possible.</li> <li>• No “muthi” plants are to be removed.</li> <li>• The existing alien invasive plants that have established along the existing road edges, in particular in disturbed areas and in the vicinity of the four watercourse crossings, should be cut down and treated to help eradicate these weeds according to accepted alien invasive plant removal techniques for each species for two years after the completion of the construction phase and an ongoing programme to control and eradicate these alien invasive weeds along the proposed roadside upgrade, would, help to prevent further spread and infestation. Rehabilitation, (with a rehabilitation maintenance component), in these spaces with suitable indigenous vegetation will also assist greatly in reducing this problem.</li> <li>• Previous MOSS areas, now replaced as ESP areas have been identified on site. There is a Riparian corridor running along the eastern</li> </ul>	

portion of the road, from the start point of the proposed road upgrade up to Water course 1 crossing. Water course crossing 1, (please refer to Figure 7), is described as a Key Area, and on the Msunduzi C-Plan (Figure 5a), Site/Unit ID 14478 indicates Midlands Mistbelt Grassland and Dry Ngongoni Veld, together with the Natal Banana Frog, the African Striped Weasel and the Natal Cycad. These sensitive areas are No-go areas, together with the four watercourse crossings, which are all classified as sensitive areas.

- Construction workers must not be permitted to gain access to these sensitive areas and adequate fencing and controls must be put in place to manage all staff movement.
- No indigenous trees to be cut, trimmed, damaged or removed under any circumstances, any such activity requires a license from DAFF.

**Disturbance of soil**

- Erosion prevention measures should be taken into consideration in the design of the construction camp/s and access roads and the road itself. Designated pedestrian access systems should also be provided.
- All topsoil to be removed from the road alignment (where new), and stored in a designated area and protected from runoff by diversion berms wherever necessary. Topsoil stockpiles should also be seeded to minimise the erosion potential.
- Topsoil stockpiles are not to exceed 1.5m in order to help maintain soil viability.
- Drainage embankments are only to be disturbed where required and any such activities are to be kept to a minimum.

**Watercourse / Drainage Line crossing**

- The proposed upgraded bridging/culvert structures should be designed to accommodate seasonal peak flow and to allow a near natural flow regimen so as not to impact on the downstream system of the stream.
- Drainage areas should be avoided wherever possible.
- River flow is not to be obstructed or blocked or damaged during the upgrading of the river crossings.
- The construction area should be kept to a minimum when working in the watercourse

crossings.

- Construction within the watercourse areas should be scheduled to take place during low rainfall months (if feasible).
- Any banks disturbed during the construction process must be adequately retained and rehabilitated.
- Any outfall points must be designed to include treatment of the soil below with either gabion baskets, stone pitching, stilling pond or other mechanism to help reduce erosion potential and dissipate water flow and velocity, or as per Engineering specifications.
- Drainage line crossings/culvert design to be designed to allow for animal passage and to allow habitat linkages.

**Air Pollution and Dust**

- Burning of waste material must not take place.
- Fumes (or black smoke) emitted from vehicles and equipment / appliances must be mitigated & monitored and action should be taken to avoid nuisance to the public. All construction vehicles must be fitted with operational silencers and should be regularly serviced so as not to emit smoke. Proof of maintenance records would be required.
- Dust suppression by watering can assist significantly to help reduce dust problems. Watering down will form part of the gravel road construction process.

**Spillages of hazardous substances**

- Should any hazardous materials be spilt, the soil/substrate onto which they are spilt must be cleaned up immediately and removed to an approved waste site. Proper site records must be kept of any spillages.
- Vehicles must not be serviced on site.
- Drip trays must be provided for leaky vehicles left on site, and these vehicles must be repaired immediately.
- Hazardous substances are those that are potentially poisonous, flammable, carcinogenic, or toxic. Some examples are: diesel, petrol, oil, bitumen, cement, solvent based paints, lubricants, explosives, drilling fluids, pesticides, herbicides, LPG.
- Hazardous storage and refuelling areas must be 110% bunded with an impermeable liner to protect groundwater quality.

- Fuel tanks must meet relevant specifications and be elevated so that leaks are easily detected. Fuel tanks must be 110% banded.
- Storage areas containing hazardous substance/materials must be clearly sign posted.
- The proximity of houses, schools and powerlines etc. should be taken into consideration when deciding on storage areas for any hazardous substances.
- Residents living adjacent to the construction sites must be notified of the existence of the hazardous storage area.
- Staff dealing with these materials/substances must be aware of their potential impacts and follow appropriate safety measures. This must be monitored (ECO function). Staff must also be aware of how to deal with any incident that might occur, relating to any hazardous materials/substances stored or used on site. Any spillages must adhere to the OHSA.

**Waste**

- No littering or illegal dumping of any waste material to take place on site and/or as the result of construction activities.
- The contractor shall ensure that no littering occurs in the work or camp areas.
- Products, equipment and materials packaging, paper, containers and plastics must be carefully managed to help avoid any dispersal by wind or other. These waste products to be sorted for recycling purposes.
- Provision must be made for waste collection facilities (i.e. bins or refuse plastic bags) and the waste must be disposed of at a registered waste site.
- No burning of waste will be permitted on site, no waste disposal holes or trenches may be constructed.
- Ensure that all hazardous substances (i.e. oil contaminated soil or water etc.) are labelled and disposed of at a landfill site licensed to accept such hazardous waste. All waste disposed of during construction must be documented during construction. Active records must be kept with references and verification documentation.
- Bins and/or skips to be provided at convenient intervals for disposal of waste within the construction camp.
- Bins should have liner bags for efficient control and safe disposal of waste.
- All bins and skips must be fitted with lids – their lids/covers must be monkey proof.

- Where water borne sewerage is not available, temporary chemical toilets must be provided by a company approved by the Engineer. Chemical toilets to be provided at a ratio of 1:20 with regular servicing weekly/fortnightly, (as deemed necessary to maintain hygienic standards), in areas where work teams are located. These toilets are to be within easy access to the workers onsite. They are to be located away from sensitive natural areas.
- The construction of pit latrines or “long drop” toilets is forbidden.
- Under no circumstances may open areas or the surrounding bush or degraded or built up areas be used as a toilet facility. An environmental awareness program and training must be provided to all workers.

**Noise will be generated by the activity**

- Construction vehicles must be regularly serviced to ensure a level of minimum emissions.
- Where necessary workers are to wear ear protection.
- No construction activity to take place from 5pm to 8am, or on weekends. This is a residential area.

**Graves and cemetery sites may be disturbed during construction works**

- Any identified graves and cemetery sites in close proximity to the proposed road layout must be ascribed an appropriate buffer zone and fenced/cordoned off and marked with danger tape. No construction activities may occur near to any identified graves or cemetery areas.
- All members of the construction team and personnel working on site must be made aware of the graves and cemetery areas and the protection requirements through regular awareness training. These areas will be a no-go areas.
- No removal of artefacts or alterations of any heritage structure will be allowed within this buffer zone.
- No construction activities may occur near to the identified graves and cemetery sites.
- Should construction activities uncover or expose any archaeological or historical residues, construction activities must cease immediately pending an evaluation by the heritage authorities, in line with the KwaZulu-Natal Heritage Act.

**Fauna will be displaced**

- Killing of fauna for any reason will not be allowed. Any persons found doing so will be removed from site.
- Disturbance to all existing fauna and their respective habitats must be minimised wherever possible.
- Previous MOSS areas, now replaced as ESP areas have been identified on site. There is a Riparian corridor running along the eastern portion of the road, from the start point of the proposed road upgrade up to Water course 1 crossing. Water course crossing 1, (please refer to Figure 7), is described as a Key Area, and on the Msunduzi C-Plan (Figure 5a), Site/Unit ID 14478 indicates Midlands Mistbelt Grassland and Dry Ngongoni Veld, together with the Natal Banana Frog, the African Striped Weasel and the Natal Cycad.
- Construction workers must not be permitted to gain access to these sensitive areas and adequate fencing and controls must be put in place to manage all staff movement. These sensitive areas are No-go areas, together with the four watercourse crossings, which are all classified as sensitive areas.

**Increased social impacts - Environmental Education**

- Ensure that all site personnel have a basic level of environmental awareness training. The Contractor must submit a proposal for this training to the ECO for approval prior to the commencement of construction.
- Construction workers should be made aware that they are not to make excessive noise (e.g. shouting/hooting).
- The need for a 'clean site' policy must be explained to the construction workers.
- A general regard for the social and ecological well-being of the site and adjacent areas is expected of the site staff. Workers need to be made aware of the following general rules:
  - a. No alcohol / drugs to be present on site.
  - b. No firearms allowed on site or in vehicles transporting staff to / from site (unless used by security personnel).
  - c. Prevent excessive noise.
  - d. Prevent unsocial behaviour.
  - e. No harvesting of firewood or plants for 'muthi' from the site or from the adjacent areas.
  - f. Construction staff are to make use of the

facilities provided for them, as opposed to ad-hoc alternatives, (e.g. fires for cooking, the use of surrounding areas / bush as a toilet is forbidden). This is a predominantly natural veld/grassland area and there are major risks associated with any fires in the area. No open fires are to be made

- g. Trespassing on private/commercial properties adjoining the site is forbidden.
- h. Driving under the influence of alcohol is prohibited.
- i. This is a residential area, and there are schools located, one in the eastern section of the road, approximately 400m from the start point of the road, on the northern side, the second to the south of the road, approximately 250m away. Construction workers are to be made aware of the potential for harm to occur to local residents.
- j. Pedestrians utilise this road on a daily basis and construction workers must ensure that all road users are provided safe access routes and construction workers must be made aware of the risks to pedestrians from their actions.

**Storm water runoff**

- The period that stripped areas are left open to exposure should be minimised wherever possible, particularly since work is along and across sensitive watercourses and watercourse crossings. Care must be taken to ensure that lead times are not excessive.
- Wind screening and stormwater control must be undertaken to prevent soil loss from the site where required.
- Procedures that are in place to conserve topsoil during the construction phase of the project are to be applied to the set up phase, i.e. topsoil is to be conserved while providing access to the site and setting up the construction camp.

**Stormwater Damage Mitigation**

- To help prevent stormwater damage, the increase in storm water runoff resulting from the construction activities must be estimated and the drainage system designed accordingly.
- During site establishment, stormwater culverts and drains must be located and



<p>covered with metal grids to prevent blockages where deemed necessary by the Engineer.</p> <ul style="list-style-type: none"><li>• Temporary cut off drains and berms may be required to capture stormwater and promote infiltration.</li><li>• During construction, un-channelled stormwater flow must be controlled to help prevent soil erosion. Where large areas of soil are left exposed, rows of straw / hay or bundles of cut vegetation should be dug into the soil in contours to slow surface wash and capture eroded soil. The spacing between rows will be dependent upon slope.</li><li>• Any site access spaces should also be shaped as described above to help reduce stormwater runoff.</li><li>• Stormwater cut off drains must be incorporated into the road design to help reduce the erosion potential of stormwater runoff.</li><li>• Site access roads should also be shaped as described above to help reduce the potential for stormwater runoff.</li></ul> <p><b>Traffic safety</b></p> <ul style="list-style-type: none"><li>• Traffic management and control systems to be put in place as necessary.</li><li>• Construction vehicles to adhere to the speed limit at all times, where necessary speed bumps to be installed to help ensure this.</li><li>• Traffic calming measures should be employed during the construction phase.</li><li>• Proper traffic control mechanisms are to be put in place to protect school children, pedestrians and road users in general during both construction and operational phases. This is a residential area, and there are schools located, one in the eastern section of the road, approximately 400m from the start point of the road, on the northern side, the second to the south of the road, approximately 250m away. Pedestrians utilise this road on a daily basis and safe access routes must be provided for them during both construction and operational phases.</li></ul> <p><b>Services and Servitude Conditions</b></p> <p><b>Eskom</b></p> <ul style="list-style-type: none"><li>• Eskom Servitude Conditions: no encroachments are permitted within the following in respect of our servitudes:</li><li>• 132kV lines = 18 metres on either side of the centre line</li></ul>	
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- 88kV lines = 16 metres on either side of the centre line
- 33kV lines = 16 metres on either side of the centre line
- 22kV lines = 12 metres on either side of the centre line
- 11kV lines = 12 metres on either side of the centre line
- Eskom's underground cables are usually laid 1 metre to 1.5 metres, when excavation is anticipated, ensure you check with our offices for cable positions.
- Prior to the approval of the development, the owner shall lodge with the development Administration, for approval by the Minister, a certificate furnished by Eskom, the local municipality or other supplier of electricity for the benefit of the inhabitants of the development, to the effect that all substation servitudes required by it will be provided and have been depicted on the general plan.
- Trees should not be planted within their horizontal falling distance of the power lines.
- The roads crossing under the power lines may only cross in safe areas where, what is known as "broken conductor conditions" as defined in the Occupational Health & Safety Act 85 of 1993, are met. Generally, roads located within 10 m of wood poles are within legal safety requirements. This will be applicable to all property entrances adjoining existing roads.
- The ground clearance, as prescribed by the law has to be maintained, the natural ground levels within the servitude area are therefore to be retained, and no soil, or any other material, may be stock piled within the servitude area.
- Regarding the use of machinery, the operators are seldom informed as to the extreme danger of using equipment in close proximity to the live overhead conductors. No soil is to be disturbed, by any civil work, within a 3 m radius of any pole or stay wire. Where civil work is done outside of this radius the soil must be suitably sloped and protected so as not to cause erosion in or onto the 3 metre radius of undisturbed soil.
- Please note that the applicable building restrictions either side of any existing powerline must be adhered to when planning new buildings or developments on the property.

- Please further take note that the costs of relocations of any of Eskom's infrastructure, will be for the account of the developer.
- Applications can be lodged via Eskom's call centre on 086 003 7566.
- Please further take note that if any 275kV, 400kV or 765 kV Lines are involved, you need to send a copy of the application to Eskom's transmission division at Megawatt Park.

**Telkom**

- In reference to the Electronic Communications Act No. 36 of 2005.
- No telecommunication infrastructure owned by Telkom SA is affected.
- Approval of the proposed is valid for six months. If construction has not yet commenced within this time period then the file must be resubmitted for approval. Any changes and deviations from the original planning during construction must be immediately communicated to this office.
- If Telkom any infrastructure is affected and needs to be relocated, such costs would be for the customer's account.
- Kindly inform Telkom SA in writing if infrastructure needs to be relocated. If Telkom plant is affected. If any Telkom infrastructure is affected and needs to be relocated, such costs would be for the customer's account.
- Telkom SA to be informed in writing if infrastructure needs to be relocated.

**Materials sourcing**

- Materials for construction activities must be sourced in a legal and sustainable way to prevent off-site environmental degradation.
- Contractors to prepare a source statement indicating the sources of all materials (including topsoil, sands, natural gravels, crushed stone, asphalt, clay liners etc.) and submit these to the Engineers for approval prior to commencement of any work.
- Where possible, a signed document from the supplier of natural materials should be obtained confirming that they have been obtained in a sustainable manner and in compliance with the relevant legislation.
- Where materials are borrowed (mined) proof must be provided of authorisation to utilise these materials from the landowner / mineral rights owner and the Department of Minerals and Energy.

**b. Process, technology, layout or other alternatives**

## Basic Assessment Report

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the construction phase (please list impacts associated with each alternative separately):

**There is no process, technology or layout alternative for the proposed road upgrade. The proposed road upgrade involves the upgrade of an existing gravel road and the upgrade of existing watercourse crossings and the proposed road layout has been designed with minimal changes to the existing vertical and horizontal alignment of the existing road, however, there will be widening by 3 to 5 metres in certain areas, realignment of approximately 500m of road, the upgrading of four existing culverts, and the realignment and upgrading of two hairpin bends/watercourse crossing points.**

**The watercourse crossing structures will be upgraded and designed to minimise impact on the streams and banks.**

**The project need and desirability is specific to the location that it is intended for. The proposed road upgrade and construction is machine intensive, involving the upgrade of an existing road, therefore, no technology alternatives have been considered. The proposed tar road is low maintenance, cost effective and has a relatively short installation period.**

### Alternative A1 (preferred alternative)

**Direct impacts:** The impacts associated with the preferred road layout will be the same as those listed under S1, as there is no process, technology or layout alternative. The project need and desirability is specific to the location that it is intended for.

**Indirect impacts:**

The impacts associated with the preferred road layout will be the same as those listed under S1, as there is no process, technology or layout alternative. The project need and desirability is specific to the location that it is intended for.

**Cumulative impacts:**

The impacts associated with the preferred road layout will be the same as those listed under S1, as there is no process, technology or layout alternative. The project need and desirability is specific to the location that it is intended for.

### Alternative A2

**Direct impacts:**

**Indirect impacts:**

**Cumulative impacts:**

### No-go alternative (compulsory)

**Direct impacts:** None of the abovementioned impacts will occur. (Please refer to S1)  
The current stormwater and runoff issues would remain. The road surface may continue to deteriorate, soil erosion would continue and road safety for road users would remain unimproved. Access for local residents would also not be improved.

**Indirect impacts:** None of the abovementioned impacts will occur. (Please refer to S1)  
The current stormwater and runoff issues would remain. The road surface may continue to deteriorate, soil erosion would continue and road safety for road users would remain unimproved. Access for local residents would also not be improved.

**Cumulative impacts:** None of the abovementioned impacts will occur. (Please refer to S1)  
The current stormwater and runoff issues would remain. The road surface may continue to deteriorate, soil erosion would continue and road safety for road users would remain unimproved. Access for local residents would also not be improved.

Indicate mitigation measures to manage the potential impacts listed above:

## Basic Assessment Report

Alternative A1:

Alternative A2:

Mitigation measures will be as per mitigation measures for Alternative S1.	
--	--

### 2.3. IMPACTS THAT MAY RESULT FROM THE OPERATIONAL PHASE

#### a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the operational phase:

##### Alternative S1 (preferred alternative)

###### **Direct impacts:**

- Local pedestrian traffic safety may be at risk with the additional vehicles on the road and increased vehicle speeds.
- Soil erosion may occur if sufficient stormwater control measures are not put in place.
- Improved access for the local communities and municipal services.
- Existing graves and cemetery sites identified will need to be afforded appropriate buffer zones and adequately fenced off.
- Alien invasive plant material may establish during the operational phase owing to new areas of disturbance.

###### **Indirect impacts:**

- The proposed development may result in an increase in vehicle speeds along the route; this may in turn increase safety risks to drivers, local pedestrians and local livestock.
- Improved access may promote greater opportunity for traders to access local towns thus potentially promoting economic growth in the area.
- Improved access may help facilitate access for additional infrastructure and economic development.
- The proposed road upgrade will result in the improvement of the existing access roads of Willowfontain.
- Residents of Willowfontain would have improved access to their homes and the wider road network.
- There may be an increase in traffic in the area owing to the improved accessibility.
- Improved access may promote greater opportunity for traders to access local towns thus promoting economic growth in the area.
- Improved access will allow greater mobility in general for example it will facilitate access for utilities and service provisions and amenities such as electricity, water and emergency vehicles.

###### **Cumulative impacts:**

The proposed road upgrade should result in the improvement of the existing road and the link of this road to the wider road network. This indirect cumulative impact may also have far reaching social impacts, where local people are in greater and more frequent contact with visitors and access to public transport such as busses and taxis etc. is facilitated. There may be an increase in social interaction between homesteads and the local community which may have positive and negative cumulative impacts.

##### Alternative S2 (if any)

###### **Direct impacts:**

###### **Indirect impacts:**

###### **Cumulative impacts:**

**No-go alternative (compulsory)**

**Direct impacts:**

None of the abovementioned impacts will occur.

**Indirect impacts:**

None of the abovementioned impacts will occur.

**Cumulative impacts:**

None of the abovementioned impacts will occur.

Indicate mitigation measures to manage the potential impacts listed above:

**Alternative S1**

**Alternative S2**

<ul style="list-style-type: none"> <li>• The road design must allow pedestrians sufficient space to move parallel to the road without affecting vehicle traffic flow.</li> <li>• Stormwater cut off drains must be incorporated into the road design to help reduce the erosion potential of stormwater runoff.</li> <li>• Speed limit road signs and pedestrian/school children crossing caution signs must be erected as necessary along the road length.</li> <li>• Alien invasive plant management programme should continue into the operation phase to help ensure the successful rehabilitation of all re-vegetated areas.</li> </ul>	
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**b. Process, technology, layout or other alternatives**

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the operational phase (please list impacts associated with each alternative separately):

There is no process, technology or layout alternative for the proposed road upgrade. The proposed road upgrade involves the upgrade of an existing gravel road and the upgrade of existing watercourse crossings and the proposed road layout has been designed with minimal changes to the existing vertical and horizontal alignment of the existing road, however, there will be widening by 3 to 5 metres in certain areas, realignment of approximately 500m of road, the upgrading of four existing culverts, and the realignment and upgrading of two hairpin bends/watercourse crossing points. The watercourse crossing structures will be upgraded and designed to minimise impact on the streams and banks.

The project need and desirability is specific to the location that it is intended for. The proposed road upgrade and construction is machine intensive, involving the upgrade of an existing road, therefore, no technology alternatives have been considered. The proposed tar road is low maintenance, cost effective and has a relatively short installation period.

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### Alternative A1 (preferred alternative)

**Direct impacts:** The impacts associated with the preferred road layout will be the same as those listed under S1, as there is no process, technology or layout alternative. The project need and desirability is specific to the location that it is intended for.

**Indirect impacts:** The impacts associated with the preferred road layout will be the same as those listed under S1, as there is no process, technology or layout alternative. The project need and desirability is specific to the location that it is intended for.

**Cumulative impacts:** The impacts associated with the preferred road layout will be the same as those listed under S1, as there is no process, technology or layout alternative. The project need and desirability is specific to the location that it is intended for.

### Alternative A2

**Direct impacts:**

**Indirect impacts:**

**Cumulative impacts:**

### No-go alternative (compulsory)

**Direct impacts:** None of the abovementioned impacts will occur. (Please refer to S1)  
The current stormwater and runoff issues would remain. The road surface may continue to deteriorate, soil erosion would continue and road safety for road users would remain unimproved. Access for local residents would also not be improved.

**Indirect impacts:** None of the abovementioned impacts will occur. (Please refer to S1)  
The current stormwater and runoff issues would remain. The road surface may continue to deteriorate, soil erosion would continue and road safety for road users would remain unimproved. Access for local residents would also not be improved.

**Cumulative impacts:** None of the abovementioned impacts will occur. (Please refer to S1)  
The current stormwater and runoff issues would remain. The road surface may continue to deteriorate, soil erosion would continue and road safety for road users would remain unimproved. Access for local residents would also not be improved.

Indicate mitigation measures to manage the potential impacts listed above:

#### Alternative A1

#### Alternative A2

Mitigation measures will be as per mitigation measures for Alternative S1.	
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## 2.4. IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING OR CLOSURE PHASE

The proposal involves a road upgrade, the installation of stormwater drains and bridging/culvert structures at the watercourse crossings. The scenario of decommissioning the proposed road upgrade is unlikely.

### a. Site alternatives

## Basic Assessment Report

List the potential impacts associated with site alternatives that are likely to occur during the decommissioning or closure phase:

### Alternative S1 (preferred alternative)

**Direct impacts:**

The scenario of decommissioning the proposed road upgrade is unlikely.

**Indirect impacts:**

The scenario of decommissioning the proposed road upgrade is unlikely.

**Cumulative impacts:**

The scenario of decommissioning the proposed road upgrade is unlikely.

### Alternative S2

**Direct impacts:**

**Indirect impacts:**

**Cumulative impacts:**

### No-go alternative (compulsory)

**Direct impacts:**

The scenario of decommissioning the proposed road upgrade is unlikely.

**Indirect impacts:**

The scenario of decommissioning the proposed road upgrade is unlikely.

**Cumulative impacts:**

The scenario of decommissioning the proposed road upgrade is unlikely.

Indicate mitigation measures to manage the potential impacts listed above:

#### Alternative S1

#### Alternative S2

The scenario of decommissioning the proposed road upgrade is unlikely.	
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### b. Process, technology, layout or other alternatives

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the decommissioning or closure phase (please list impacts associated with each alternative separately):

**The proposed road upgrade involves the upgrade of an existing gravel road and an upgrade of existing watercourse crossings. The scenario of decommissioning the proposed road upgrade is unlikely.**

### Alternative A1 (preferred alternative)

**Direct impacts:**

The scenario of decommissioning the proposed road upgrade is unlikely.

**Indirect impacts:**

The scenario of decommissioning the proposed road upgrade is unlikely.

**Cumulative impacts:**

The scenario of decommissioning the proposed road upgrade is unlikely.

### Alternative A2



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<b>Direct impacts:</b>
<b>Indirect impacts:</b>
<b>Cumulative impacts:</b>

<b>No-go alternative (compulsory)</b>
<p><b>Direct impacts:</b> The scenario of decommissioning the proposed road upgrade is unlikely.</p> <p><b>Indirect impacts:</b> The scenario of decommissioning the proposed road upgrade is unlikely.</p> <p><b>Cumulative impacts:</b> The scenario of decommissioning the proposed road upgrade is unlikely.</p>

Indicate mitigation measures to manage the potential impacts listed above:

<b>Alternative A1</b>	<b>Alternative A2</b>
The scenario of decommissioning the proposed road upgrade is unlikely.	

### 2.5. PROPOSED MONITORING AND AUDITING

For each phase of the project and for each alternative, please indicate how identified impacts and mitigation will be monitored and/or audited.

<b>Alternative S1 (preferred site)</b>	<b>Alternative S2</b>
<p><b>Preliminary/Design Phase:</b> No Monitoring required.</p> <p><b>Construction Phase:</b> An Independent Environmental Control Officer should be contracted to undertake monthly site inspections for the duration of the construction phase of the proposed project. A monthly Environmental Audit report should be developed and copied to the DAEA with a final report at the end of the construction phase.</p> <p><b>Operational Phase</b> An annual Site Audit should be undertaken by an independent ECO, or alternatively the site will form part of the Msunduzi Municipality road network and be monitored as part of the Msunduzi Municipality routine road maintenance schedule.</p>	

## Basic Assessment Report

Alternative A1 (preferred alternative)

Alternative A2

As per S1 above.	
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### 3. 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 S1 (preferred site)

The proposed project should not result in impacts on the natural or social environment that are considered significant or that will result in undue risks. The nature and types of negative impacts do not outweigh the potential benefits of this project, provided the impacts listed above in Section E are correctly managed.

#### Type of Impacts

Negative impacts will likely occur in the biophysical, natural and social environment. As noted in this report soils and local watercourses may be impacted and due consideration of stormwater control and soil erosion prevention is required. The upgrade of the road and drainage crossing structures should help to reduce further erosion and improve the current situation of erosion and stormwater. Much of the site has already been transformed by the existing gravel road, thus the ecological sensitivity of the site is considered moderate to low, with the main focus areas being the watercourse crossings. The site does, however, fall within previous MOSS areas, now replaced as ESP areas have been identified on site. There is a Riparian corridor running along the eastern portion of the road, from the start point of the proposed road upgrade up to Water course 1 crossing. Water course crossing 1, (please refer to Figure 7), is described as a Key Area, and on the Msunduzi C-Plan (Figure 5a), Site/Unit ID 14478 indicates Midlands Mistbelt Grassland and Dry Ngongoni Veld, together with the Natal Banana Frog, the African Striped Weasel and the Natal Cycad. These sensitive areas must be adequately managed and any potential links must be taken into consideration. Riparian vegetation and areas to be identified and demarcated (danger tape and fencing), and disturbances must be limited to the working corridor/road servitude only. Impacts may occur in terms of the removal of natural vegetation, loss of fauna and the establishment of weeds post construction. Suitable alien invasive weed control measures should help to reduce this impact. The project EMP and Rehabilitation Plan will provide guidelines in the management of the reinstatement and rehabilitation of these areas.

The benefits of the project will include improvement of access for the local community and the potential for both economic growth and greater access for emergency vehicles, utilities etc. However, traffic, livestock, school children and pedestrian safety will be a concern, and the necessary road and traffic safety management systems will need to be put in place, including speed limit signs and pedestrian/school children caution signs.

#### Likelihood

Most of the impacts are likely to occur – such as the removal of vegetation, noise creation, and the increase in traffic.

#### Duration

The duration of most impacts should be short term (4-6months) during the construction phase, including the loss of vegetation and potential soil erosion issues. The majority of impacts on the local community should also be short term, and will occur more specifically during the construction phase. There will be an increase in traffic volume to the specific area due to accessibility of the road, this will be a permanent change.

The loss of vegetation would be permanent and without proper stormwater and soil erosion control measures, a number of impacts may extend into the medium to long term, notably soil erosion.

**Spatial Scale**

The site and immediate surrounding residential/informal households may be affected. The increased volume of traffic may affect homesteads in the local vicinity, however, these impacts should not prove significant, provided the recommended mitigation measures are implemented.

**Intensity**

Impacts on the local natural environment are likely to be low to moderate as most of the area has already been impacted by the construction of the existing road. Social impacts are likely to be low in terms of pedestrian and traffic safety, provided suitable road and traffic safety measures are put in place and properly managed. These negative impacts are offset by the MODERATE to HIGH BENEFITS that should be experienced by the local community in terms of the improved access and mobility.

**Significance:**

The overall environmental significance in terms of the natural environment is that there will be a low to moderate impacts that will be limited to the construction period. The loss of vegetation due to the increased road servitude will, however, be permanent, as will the increased traffic volumes.

Initial social impacts will be limited to the short term construction phase and will likely be low in terms of safety and inconvenience. These impacts may be offset by the benefits associated with the development of the road. Social impact in terms of interaction between visitors and locals will increase as the improved infrastructure will increase mobility.

**Alternative S2**

[Redacted content]

**Alternative A1 (preferred alternative)**

As per S1 above.

**Alternative A2**

[Redacted content]

**No-go alternative (compulsory)**

The No-Go option attempts to provide an understanding of the impacts associated with not upgrading the access road.

**Type of Impacts**

There will be no negative impacts associated with not upgrading the access road other than continued erosion of the existing gravel access road, and the road becoming less stable and potentially hazardous with erosion.

There will be no social benefits associated with not upgrading the access road such as increased mobility and formal access to the extended road network. There will also be no improved access for the local community.

**Likelihood**

On the assumption that the road is not built – the impacts or lack of impacts will be definite.

**Duration**

Not applicable.

**Spatial Scale**

On the assumption that the road is not upgraded - the site and immediate surrounding villages/households will not be impacted nor receive any benefits. Access would remain poor and possibly exacerbate with time.

**Intensity**

There will be NO IMPACT on the local natural and social environment from not upgrading the access road, apart from continued erosion of the existing road, and issues with access, safety and potential road widening as vehicles might attempt to avoid eroded areas/potholes. Likewise there will be NO BENEFITS if the NO-GO Option is adopted. The current 'status quo' will remain the same with the potential for further erosion.

**Overall Significance:**

There will be NO IMPACT on the local natural and social environment from not upgrading the access road, other than the current erosion issues potentially exacerbating with time. Likewise there will be NO BENEFITS if the NO-Go option is adopted.

**SECTION F. RECOMMENDATION OF EAP**

Is the information contained in this report and the documentation attached hereto in the view of the EAPr sufficient to make a decision in respect of this report?

YES	NO

If "NO", please contact the KZN Department of Agriculture & Environmental Affairs regarding the further requirements for your report.

If "YES", please attach the draft EMPr as Appendix F to this report and 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:

Should a positive Environmental Authorisation be granted, we would recommend that the following conditions be included in the authorisation:

An independent Environmental Control Officer should be appointed to monitor the compliance of construction activities, with the approved project specific EMPr. A Rehabilitation Plan has been included under the EMP for the project to provide guidelines for the reinstatement and rehabilitation within sensitive areas, such as the proposed upgraded bridge structures. It is the responsibility of the proponent and the contractor to implement mitigation measures outlined in the project specific EMPr and Rehabilitation Plan to adhere to conditions of the Environmental Authorisation.

The construction area should be kept to a minimum (the smallest possible work area), along the road length and more specifically at the watercourse crossings. Riparian vegetation and areas to be identified and demarcated (danger tape and fencing), and disturbances must be limited to the working corridor/road servitude only. Re-instatement of indigenous vegetation should take place where vegetation clearing has been required for construction purposes. Any disturbed banks to be stabilised and rehabilitated with suitable indigenous vegetation, and any outfall points to be adequately protected with gabion baskets or similar type structures to help both dissipate water and help prevent erosion. The water course areas and the previous MOSS areas, now replaced as ESP areas have been identified on site. There is a Riparian corridor running along the eastern portion of the road, from the start point of the proposed road upgrade up to Water course 1 crossing. Water course crossing 1, (please refer to Figure 7), is described as a Key Area, and on the Msunduzi C-Plan (Figure 5a), Site/Unit ID

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14478 indicates Midlands Mistbelt Grassland and Dry Ngongoni Veld, together with the Natal Banana Frog, the African Striped Weasel and the Natal Cycad, these will be No-go areas for the duration of the project and all members of the construction team will need to be made aware of this through regular awareness training.

There are sections along the proposed road upgrade that may require embankment cutting. These sections must take the existing vegetation into consideration and no indigenous trees, nor any tree used as a resource may be cleared. Any cut banks should be terraced and adequately stabilised and rehabilitated.

It is important that every effort be made to retain all the large indigenous trees along the road edge, however, in the event that an indigenous tree has to be removed, it will be necessary to obtain a permit from the Department of Agriculture, Forestry and Fisheries for the clearing of any indigenous trees.

It is also strongly recommended that appropriate alien invasive control measures be implemented within the proposed road reserve and construction areas where disturbance occurs within the drainage lines.

Grave site areas and cemetery areas have been identified along the road length and a minimum of a 10m buffer zone should be maintained around these sites utilising danger tape (or similar) to prevent any access/encroachment. No removal of artefacts or alterations of any heritage structure will be allowed within the buffer zone. Should the developer wish to develop in the immediate vicinity of any grave (within the 10m buffer zone), then a phase two archaeological assessment would be required to assist with the mitigation process.

All members of the construction team will need to be made aware of the graves and the cemetery sites and the protection requirements through regular awareness training. The minimum 10m buffer zone will be a No-go area. The KwaZulu-Natal Heritage Act requires that operations exposing archaeological and historical residues should cease immediately pending an evaluation by the heritage authorities.

Power line, telephone and water line servitude requirements must be observed during the construction process.

## SECTION G: APPENDIXES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix E: Comments and responses report

Appendix F: Draft Environmental Management Programme (EMPr)  
Draft Rehabilitation Plan

Appendix G: Other information

Appendix A: Site plan(s)

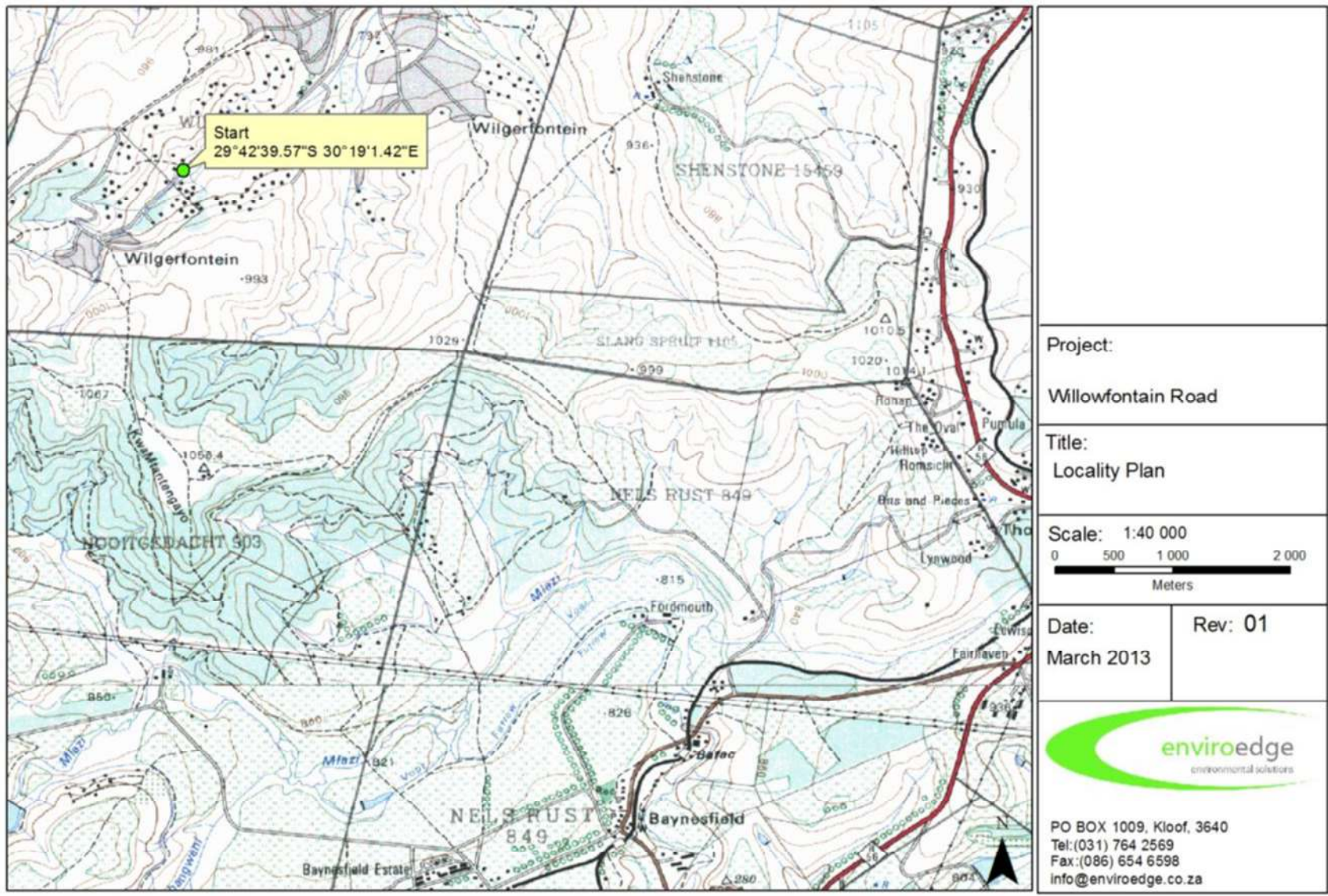


Figure 1: Locality Plan



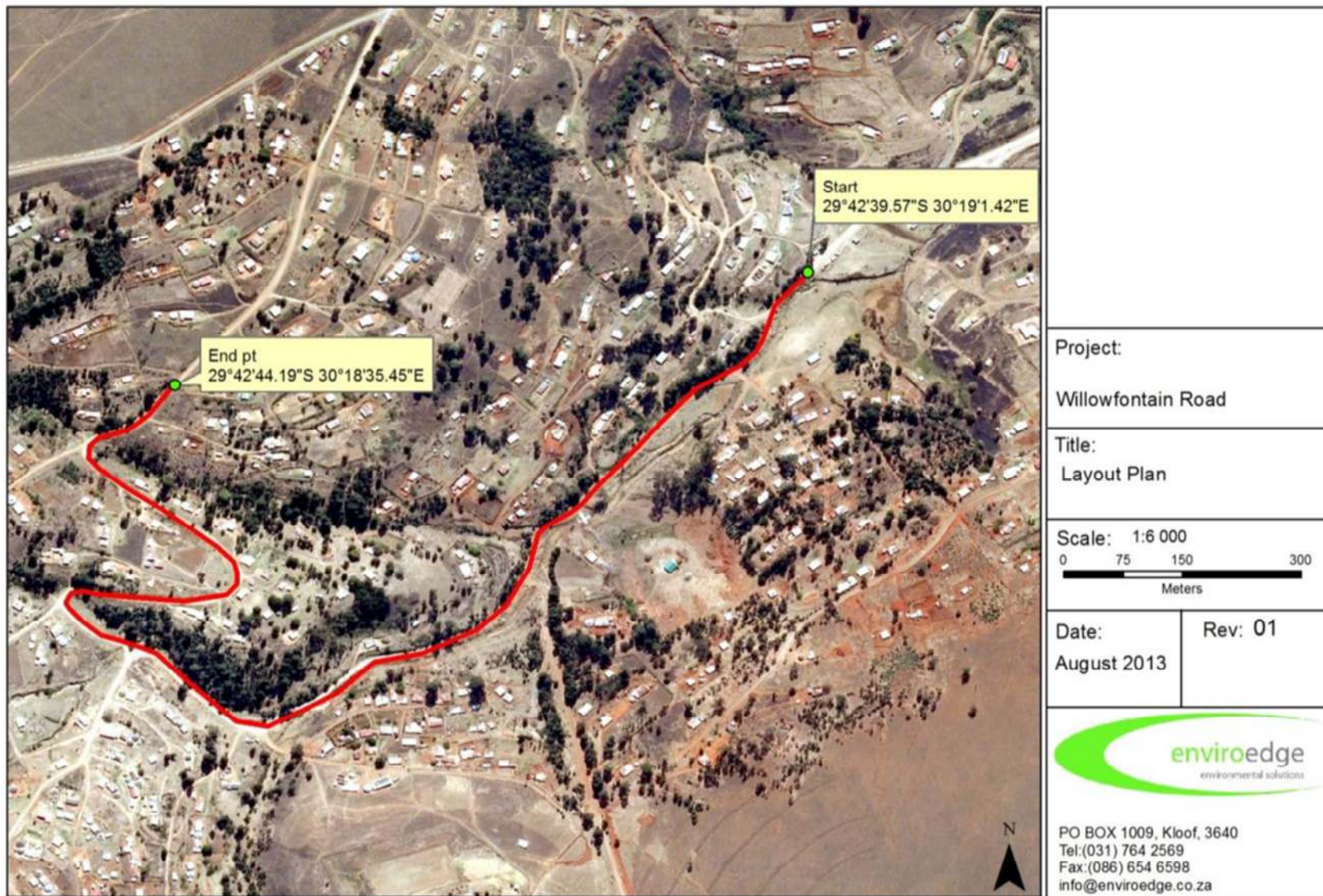


Figure 2: Layout Plan

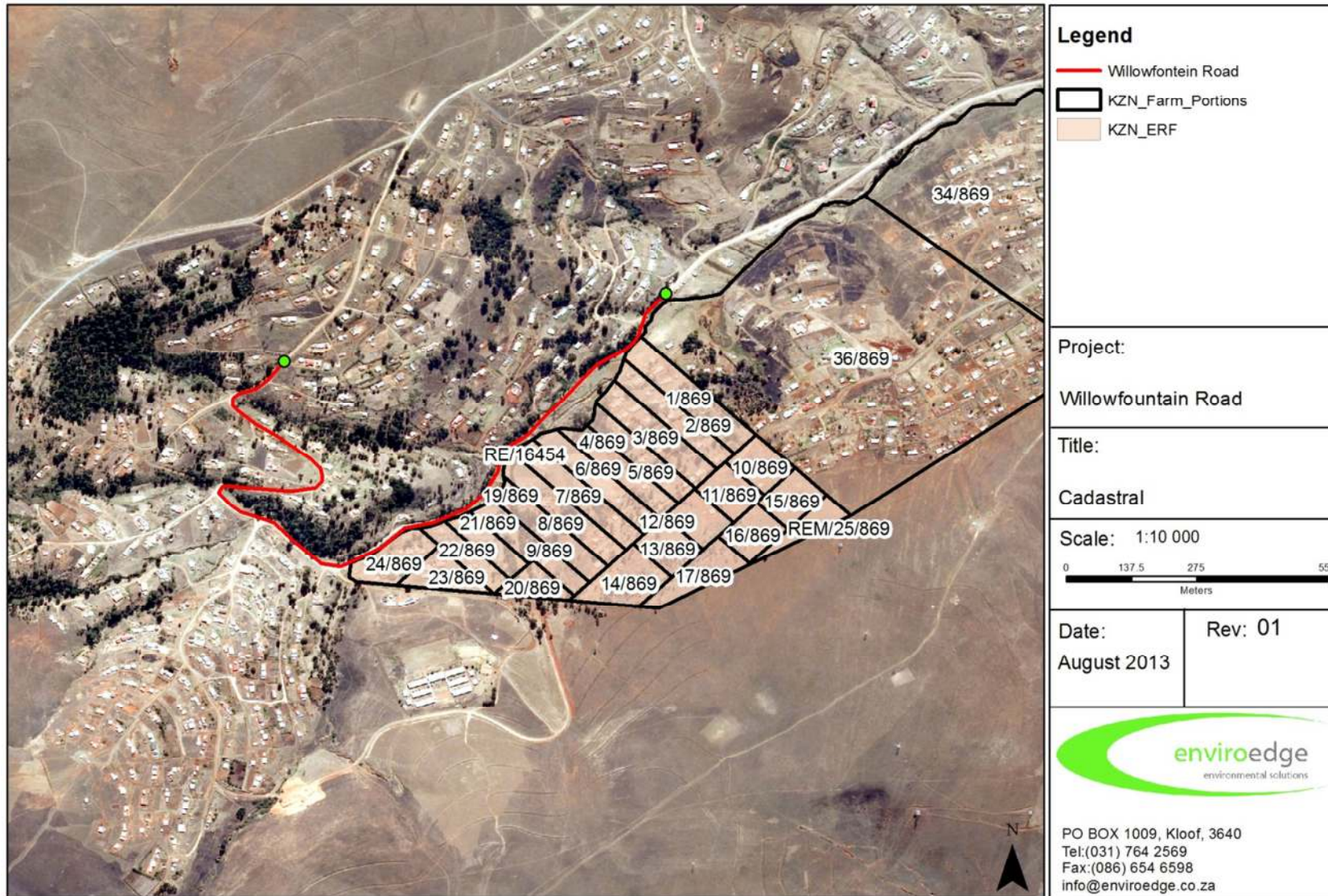


Figure 3: Cadastral Layout

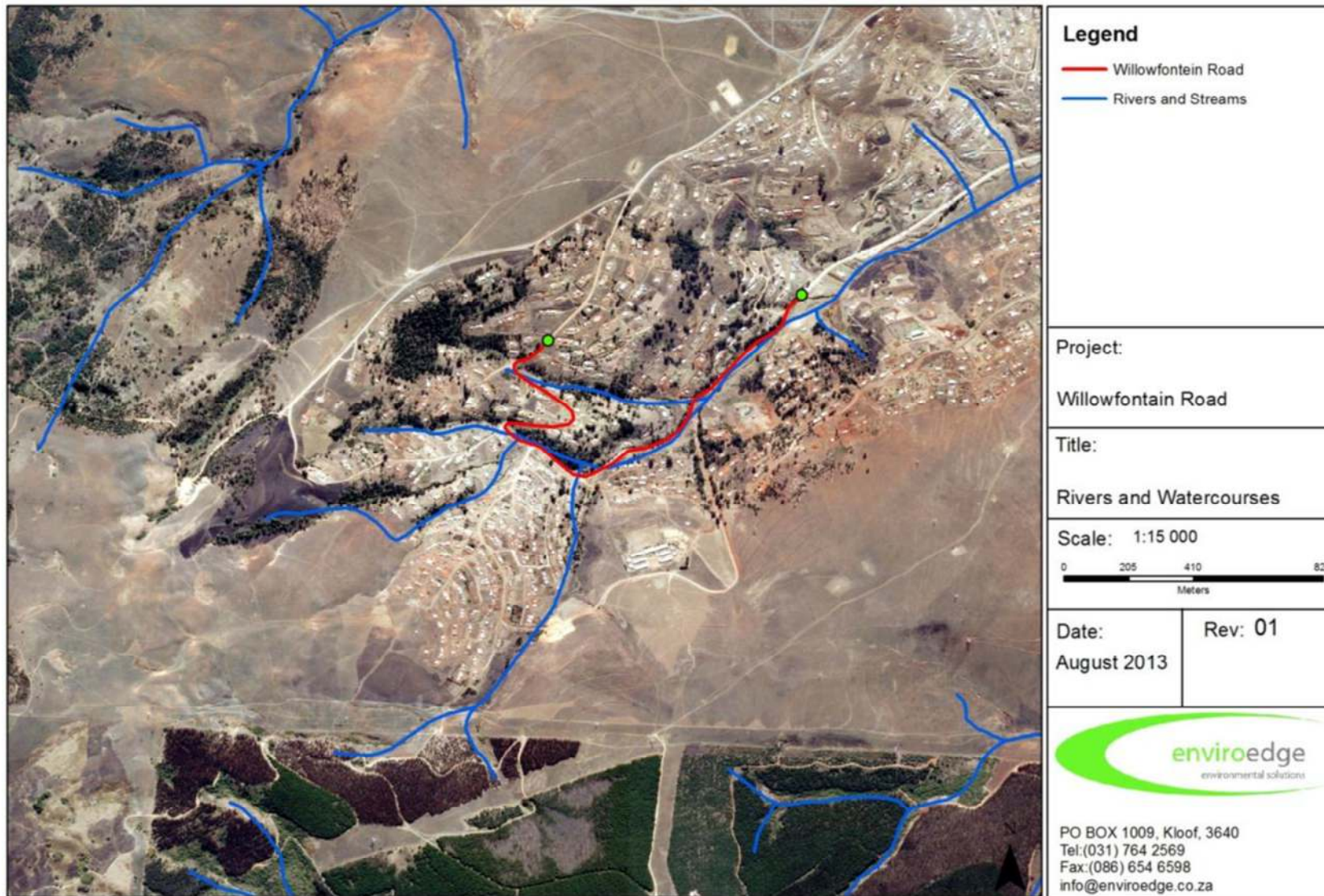


Figure 4: Rivers and Watercourses Plan

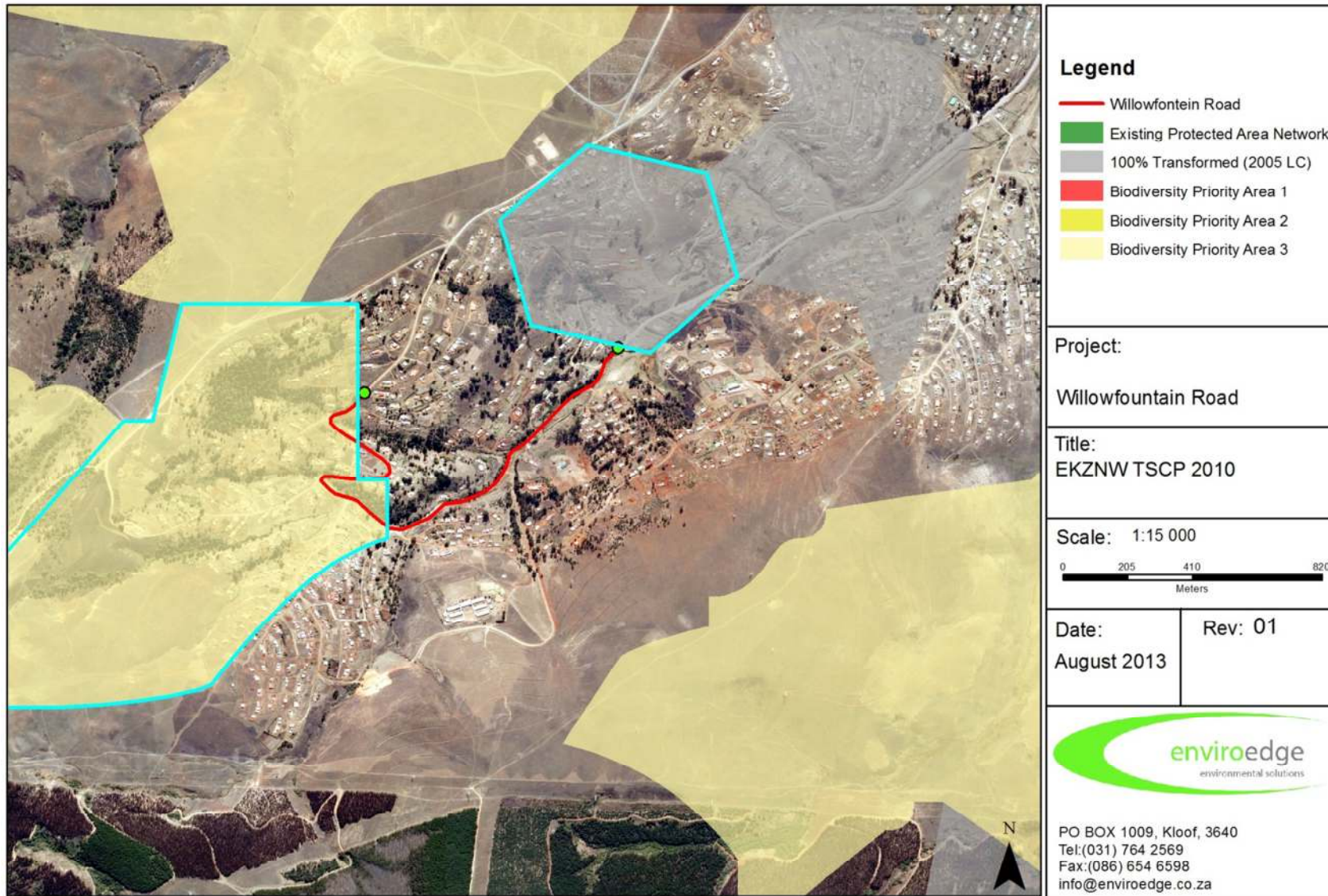


Figure 5: EKZNW Terrestrial Systematic Conservation Plan

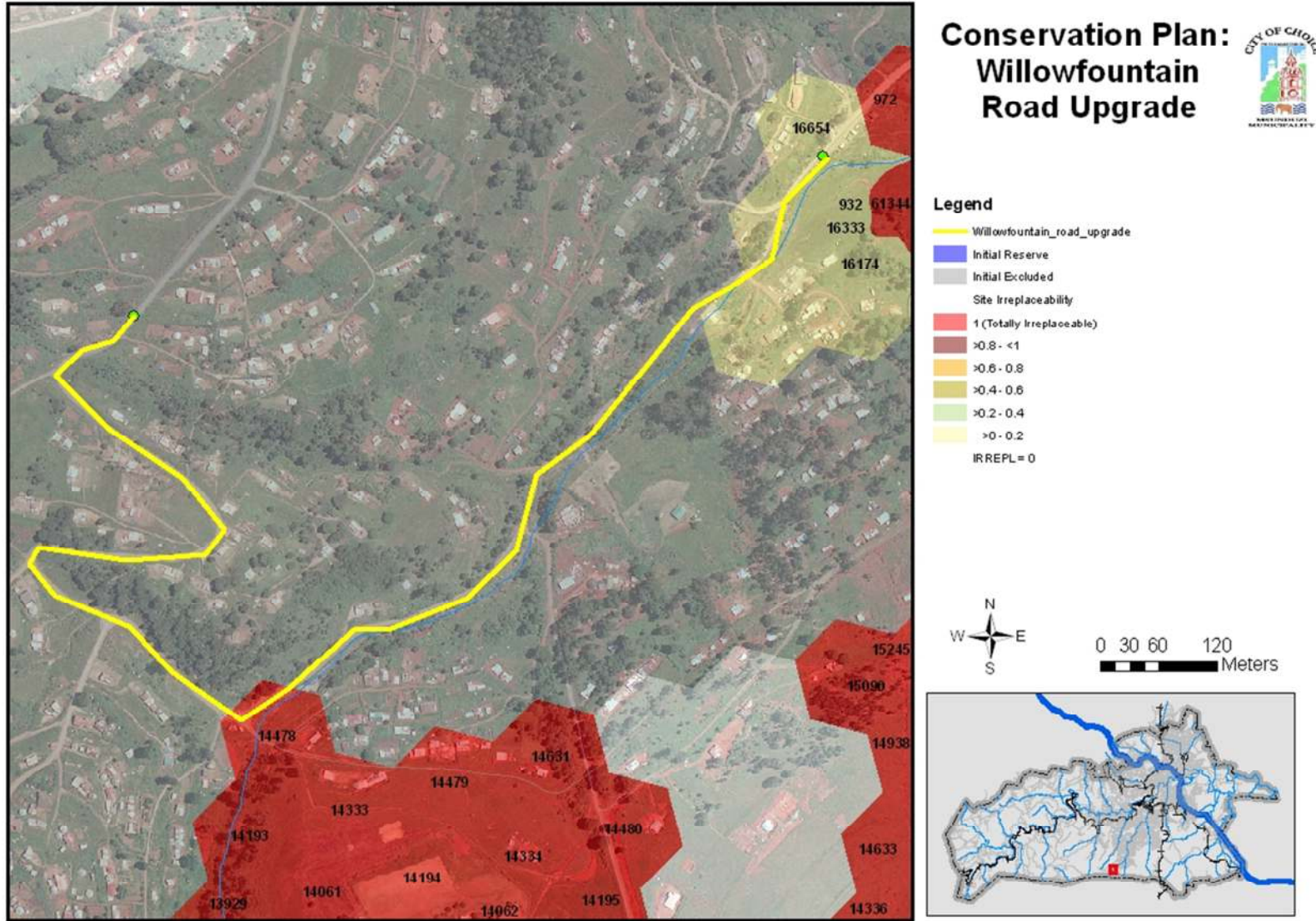


Figure 5a: Msunduzi Municipality C-Plan

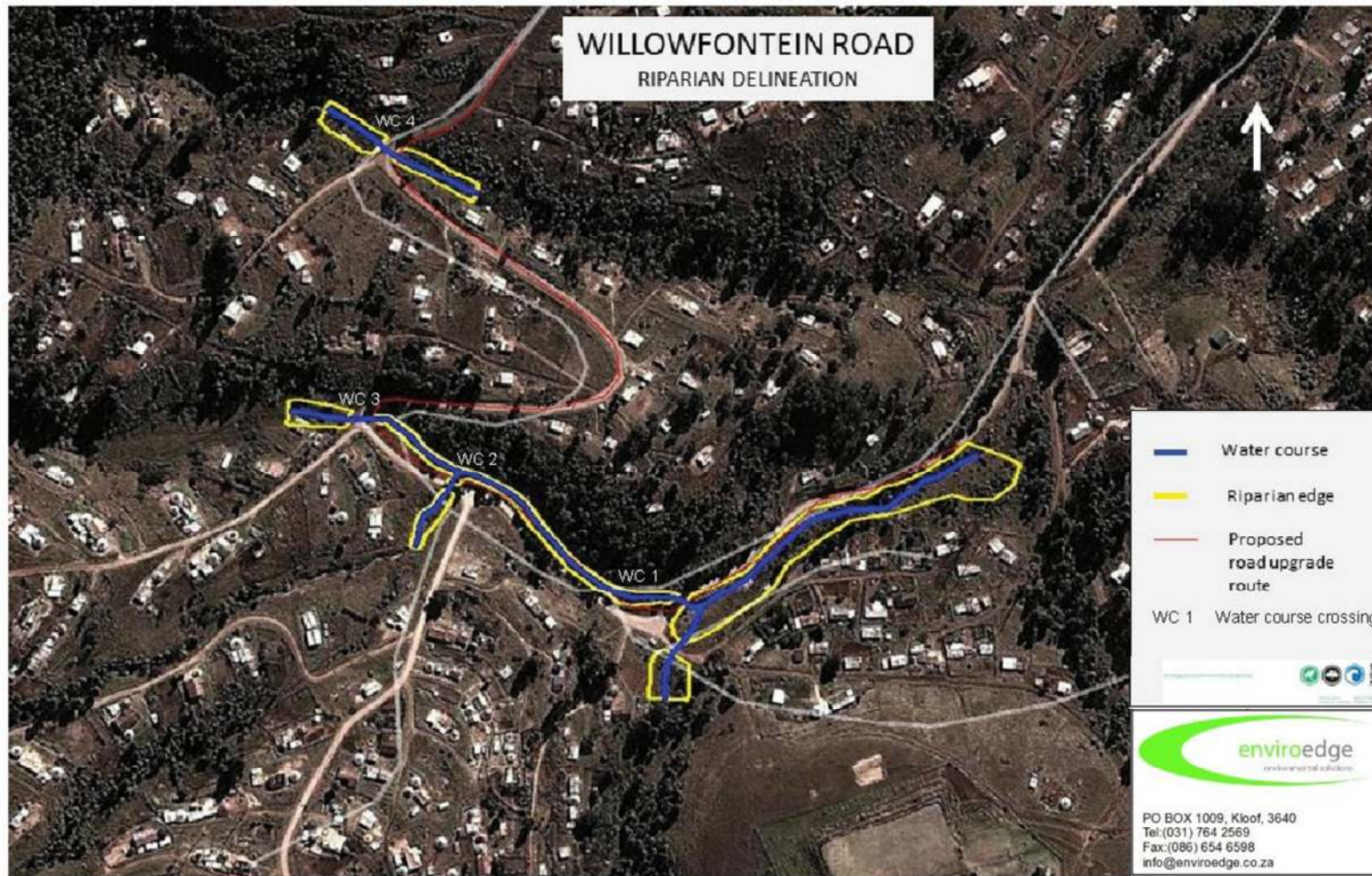


Figure 6: Watercourse Crossings 1 - 4 and riparian Delineation

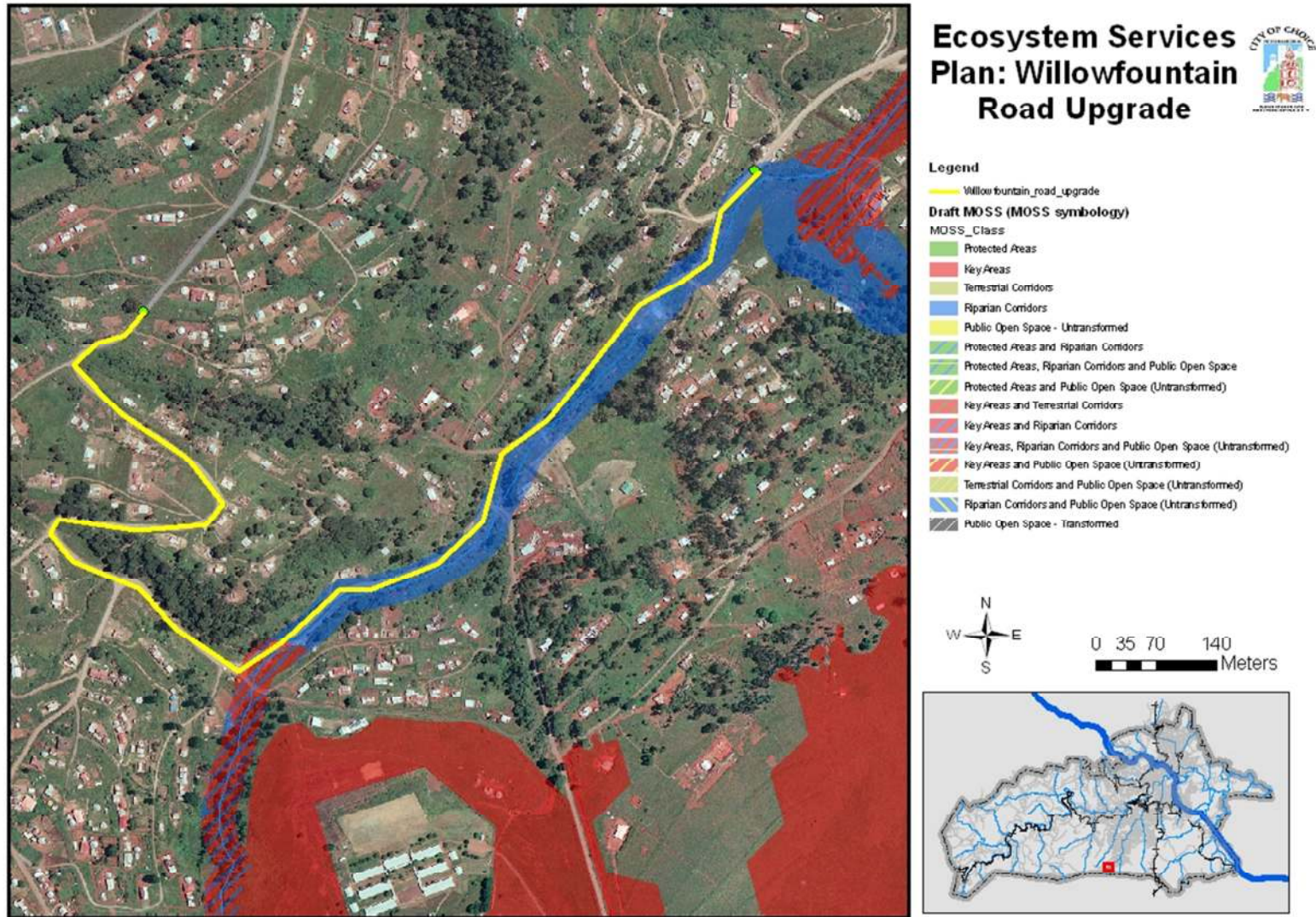


Figure 7: Msunduzi Municipality Ecosystem Services Plan (ESP)

Appendix B: Photographs



**Willowfountain Road Site Photographs**



**Figure 1: Start point of Willowfountain Road looking south-west.**



**Figure 2: Watercourse crossing 1 looking south-south-west.**



**Figure 3: Mid-section of road, stream tributary of Wilgerfontein river to south (left) of road looking south-west.**



**Figure 4: Main Watercourse crossing 2 looking north-west.**



**Figure 5: View back along road from Watercourse crossing 3 down looking south-east, stream to north-east of road (left).**



**Figure 6: Main Watercourse crossing 3, upstream of WC 2, looking south-east.**



**Figure 7: Watercourse crossing 4 looking north-east over crossing point. Watercourse crossing 4 upstream of Watercourse crossing 1. (See Figure 2).**



**Figure 8: End point of Willowfountain Road looking south-west down road.**

Appendix C: Facility illustration(s)

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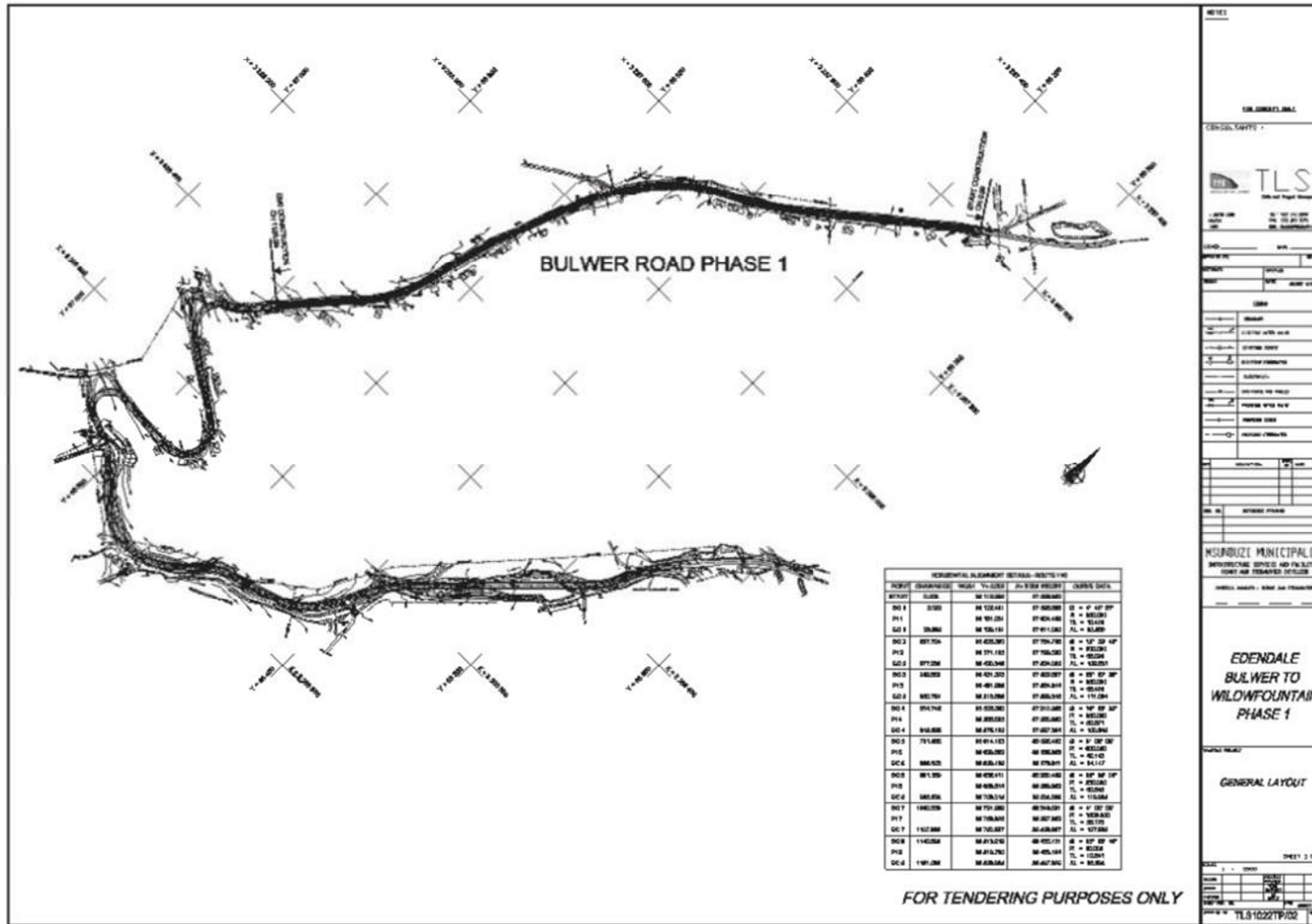


Figure 8: Msunduzi Municipality Willowfountain Road Upgrade project – Layout Plan

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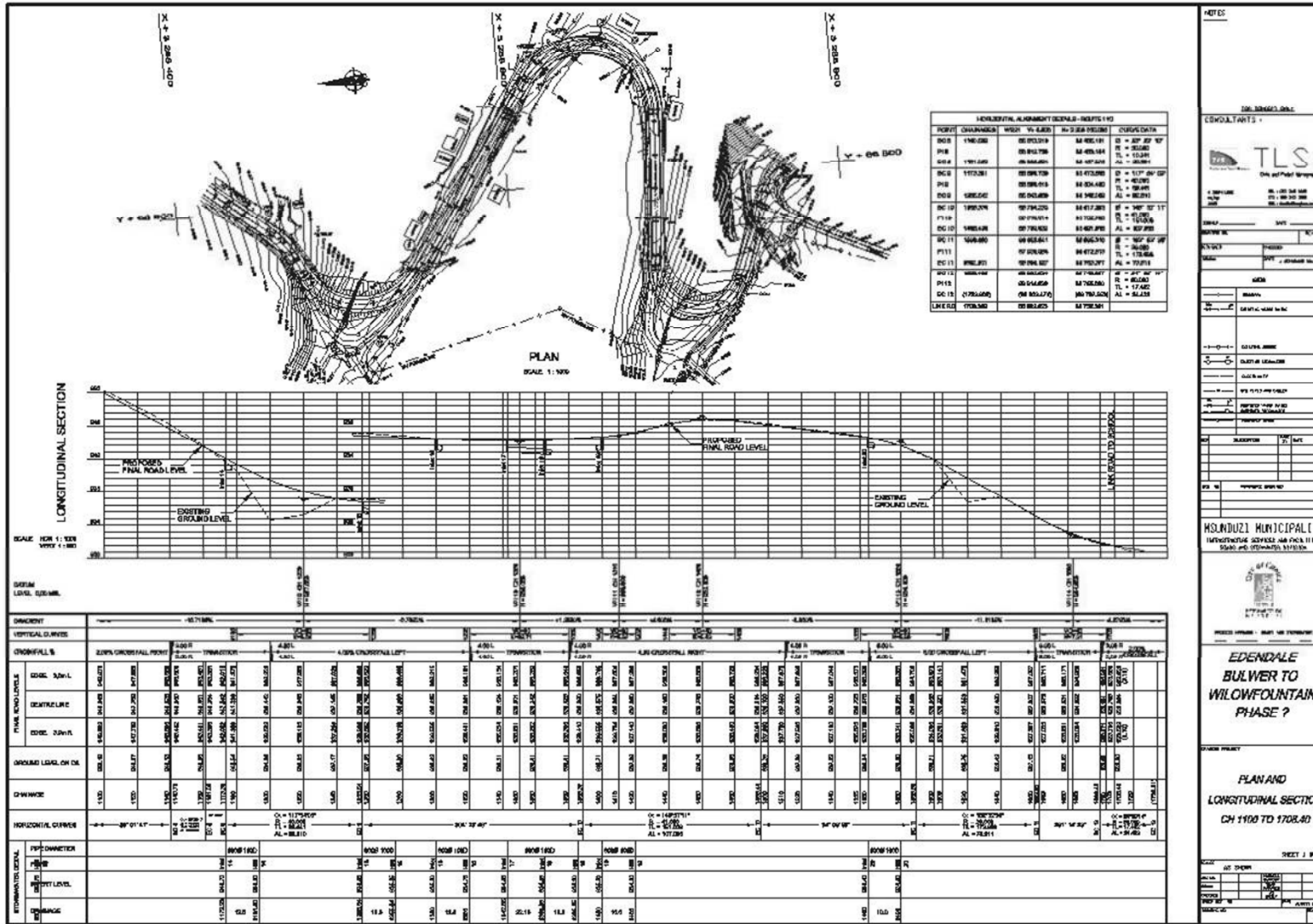


Figure 9: Msunduzi Municipality Willowfontain Road Upgrade project – Drainage Details

Appendix D: Specialist reports

Appendix E: Comments and responses report

Appendix F: Draft Environmental Management Programme (EMPr)  
Draft Rehabilitation Plan



Appendix G: Other information

