environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

(For official use only)

File Reference Number:	
Application Number:	
Date Received:	

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

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **08 December 2014**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.

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

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

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

14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.

15. Shape files (.shp) for maps must be included in the electronic copy of the report submitted to the competent authority.

SECTION A: ACTIVITY INFORMATION

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

YES	NO
	X

1. PROJECT DESCRIPTION

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

INTRODUCTION

The KZN Department of Transport (DOT) proposes to upgrade the existing mud track, to a type 7A gravel road, approximately 1.4 km in length and 6 m in width, and with a road reserve of 20m which conforms to DOT standards. The existing track will be upgraded in one of the Bergville villages off D364, along L1528. The site is located in the Okhahlamba Local Municipality. The existing track is not suitable, and erosion is evident as a direct result of poor drainage. The upgrading of the existing track to a gravel road will improve access for the local community to basic amenities. The road transverses a drainage line, therefore DOT proposes to construct pipe culverts within the drainage line allowing for the continuance of natural flow.

Photo 1: showing existing track of Mahlathini

Photo 2: showing erosion as a result of poor drainage of the existing track

Photo 3: showing the water crossing on the existing track

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

Listed activity as described in GNR 983 (Listing Notice 1)	Description of project activity
Listing Notice 1 of 2014, Listed Activity 12 The development of: (iii) – bridges exceeding 100 square metres in size; (xii) infrastructure or structures with a physical footprint of 100 sq m or more; where such development occurs - (a) within a watercourse	The proposed road upgrade crosses a drainage line therefore DOT proposes to place Two 600mm pipe culverts that conforms to the Department standards.
Listing Notice 1 of 2014, Listed Activity 19 The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock or more than 5 cubic metres from - (i) a watercourse;	The proposed activity will require the temporary removal of soil from the watercourse. The removed soil will be used for infilling and stabilizing the river banks. All top soil will be used in the rehabilitation of the site and **NO** soil will be removed off-site.

2. FEASIBLE AND REASONABLE ALTERNATIVES

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

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

a) Site Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
The preferred route was chosen based on the fact that a road currently exists and no new road will be constructed minimizing the impact to the receiving environment. This alternative has shown to be the best practical option. The road design has taken numerous engineering methodologies into consideration which has a minimal impact on the environment, by improving drainage and reducing erosion along the road. The road has been designed according to DOT standards.		
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
N/A	N/A	N/A
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
N/A	N/A	N/A

In the case of linear activities:

Alternative:	**Latitude (S):**	**Longitude (E):**
Alternative S1 (preferred)		
• Starting point of the activity	28°28´32″ S	29°17´07″E
• Middle/Additional point of the activity	28°28´12″ S	29°17´11″E
• End point of the activity	28°27´52″ S	29°17´23″E
Alternative S2 (if any)		
• Starting point of the activity	N/A	N/A
• Middle/Additional point of the activity	N/A	N/A
• End point of the activity	N/A	N/A
Alternative S3 (if any)		
• Starting point of the activity	N/A	N/A
• Middle/Additional point of the activity	N/A	N/A
• End point of the activity	N/A	N/A

b) Lay-out alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
(a) The proposed construction of an access road from a mud track to a gravel road 6m in width, and a length of 1.4 km. The road will be upgraded on an existing track, which has become prone to erosion and inundated during periods of high rainfall.	28°28´32″ S	29°17´07″E
(b) The propose development of the local road transverses a watercourse therefore DOT proposes to place two 600mm culverts to allow the continuance of the flow of water. The culvert design is in accordance with the DOT standards. This will be upgraded on an existing pathway used by the community members.	28°27´57″ S	29°17´18″ E

Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
No alternate road designs/routes have been investigated as the proposed/preferred designs/routes meet DOT standards for gravel roads, and the proposed construction is an upgrade of an existing track. Furthermore, the access road: 1. Is within the budget available from Department of Transport to establish a gravel road. 2. Have limited impact on the ecological environment as no new road will be constructed.	N/A	N/A
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
N/A	N/A	N/A

c) Technology alternatives

Alternative 1 (preferred alternative)
Figure 1 below: shows the proposed pipe culverts. Refer to the plan of pipe culverts in **Appendix C** - Facility Illustration for a more detailed design.

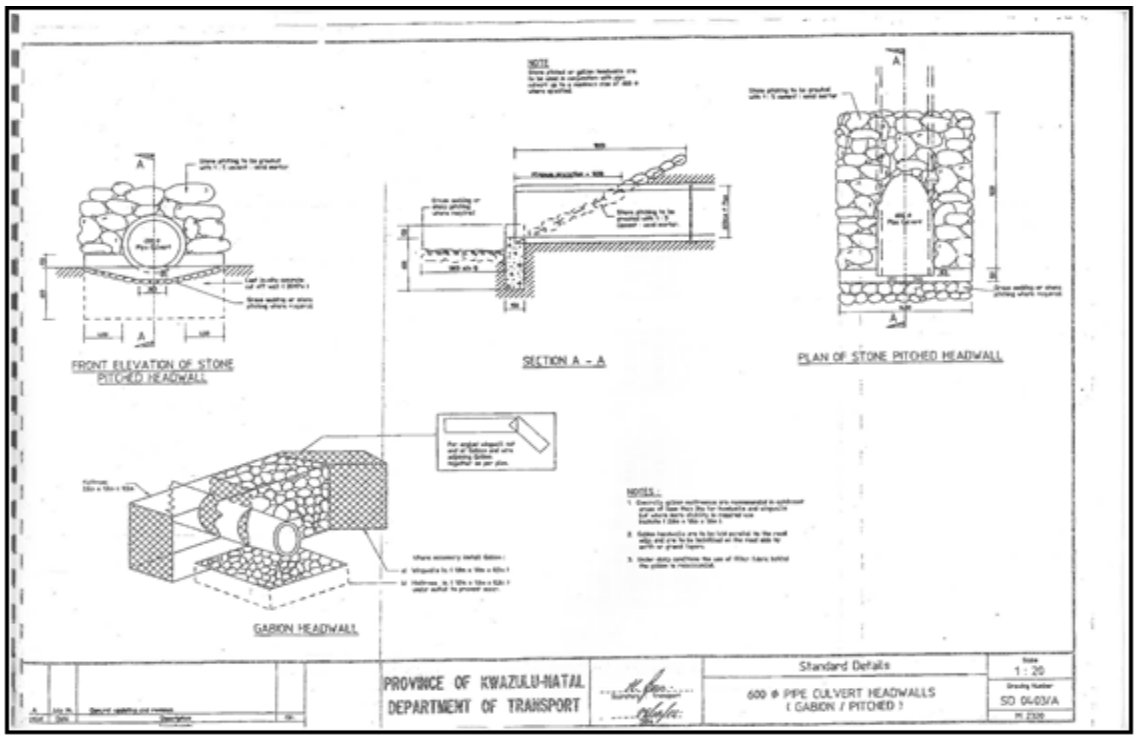


Figure 1: showing the standard pipe culvert design.

Alternative 2
N/A
Alternative 3
N/A

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

No alternate technologies and road routes have been investigated as the preferred design and routes meet the following requirements:

1. The current design for the culvert structure is in accordance with DOT standards.

2. Is within the budget available from Department of Transport to establish a Gravel road.

3. Have limited impact on the ecological environment as no new road will be constructed.
4. The best practical means approach has been adopted and the design favorably suits the ambience of the surrounding environment.

e) No-go alternative

No gravel road and pipe culverts will be constructed, therefore there will be no negative impacts associated with construction activity. However, there will also be no positive impacts associated with the road construction such as the improved connectivity and access for local residents. Residents that make use of the road will continue to experience disruptions, as access is frequently overtopped by flood water, making access difficult at times of high flow. Erosion along the road is evident in areas as a direct result of poor drainage of the existing road. According to the ward councillor, members of the community are left stranded during periods of high rainfall as the existing road becomes impossible to use. The proposed route is .transformed by existing footpaths and highly degraded, most natural vegetation have been invaded by alien vegetation along the track.

3. PHYSICAL SIZE OF THE ACTIVITY

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

Alternative:	**Size of the activity:**
Alternative A1[1] (preferred activity alternative)	2x0.283 m²
Alternative A2 (if any)	N/A m²
Alternative A3 (if any)	N/A m²

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

Alternative:	Length of the activity:
Alternative A1 (preferred activity alternative)	1.4 km
Alternative A2 (if any)	N/A m
Alternative A3 (if any)	N/A m

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

Alternative:	Size of the site/servitude:
Alternative A1 (preferred activity alternative)	N/Am^2
Alternative A2 (if any)	N/Am^2
Alternative A3 (if any)	N/Am^2

4. SITE ACCESS

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

Describe the type of access road planned:

N/A

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

5. ACTIVITY MOTIVATION

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

1. Is the activity permitted in terms of the property's existing land use rights?	YES X	NO	Please explain
The access road is located off the D364 and providing access to the local communities, and school children. The gravel road will be constructed to ensure safe access to pedestrians and motorists. This activity is in line with the property's existing land use rights.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES X	NO	Please explain
The Bergville region is predominately rural and access to basic developmental areas is limited. Therefore the activity is in line with the PSDF.			
(b) Urban edge / Edge of Built environment for the area	YES X	NO	Please explain
The road is not in a built urban environment thus urban edge policies are not affected.			

(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES	NO X	Please explain
It has been identified by the IDP (2012-2017) that the construction of local roads is a priority. This is as per the DOT three to five year planned programmes (IDP, 2012-2017, p99). The main aim of the municipality is to encourage more engagement with the Department of Rural Development and Land Reform; Department of Agriculture, Environmental Affairs and Rural Development in order to improve the state of the rural environment. The Okhahlamba Local Municipality has many projects that are to be implemented. There are numerous environmental applications that govern all projects that are planned or implemented; thus ensuring sustainable development at Okhahlamba. NEMA principles which involve EIA principles as well are followed in order to achieve sustainable development.			
(d) Approved Structure Plan of the Municipality	YES X	NO	Please explain
The ward councillor has expressed the communities' concerns with regards to the need for local roads that are not inundated during high rainfall periods. He expressed these concerns to the local municipality which were documented. Therefore the activity is in line with the approved structure plan of the municipality.			
(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	YES	NO X	Please explain
No existing environmental management priorities for the area will be compromised, as the activity will contribute to the EMF.			

(f) Any other Plans (e.g. Guide Plan)	YES	NO X	Please explain
N/A			
3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	YES X	NO	Please explain
The proposed activity contributes to improved access routes within the local municipality, and therefore is in line with the IDP and SDF.			
4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	YES X	NO	Please explain
Community members are often left stranded during periods of high rainfall, therefore, the upgrading of the existing track to a gravel road will impact positively to members of the community. During the construction process local labour will be sourced (required/rooted) by the contractor, thus offering skilled training opportunities to members of the community. As a result of the construction process, employment will increase as potential investors will be able to access the area. It is therefore, a high societal priority for local community members. The ward councilor has expressed the urgent need for the road to be constructed as soon as possible.			
5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development?	YES X	NO	Please explain
All necessary services are available for the activity to commence.			

6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)?	YES	NO X	Please explain
No infrastructure planning is envisaged by the municipality with regards to this project. The project costs are borne by the Department of Transport.			
7. Is this project part of a national programme to address an issue of national concern or importance?	YES	NO X	Please explain
The proposed activity is site specific and is at a localized level.			
8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	YES X	NO	Please explain
The site is extremely degraded and banks along the road are highly eroded as a direct result of poor drainage of the existing track. The natural vegetation of the site is interrupted by the existence of alien vegetation. On completion of construction, the site will be rehabilitated. Therefore, the location factors favour this activity.			
9. Is the development the best practicable environmental option for this land/site?	YES X	NO	Please explain
The proposed site has been assessed and a favorable position for the road construction has been identified with all stakeholders. This will significantly decrease the overall costs of proposing to construct an entirely new gravel road.			
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES X	NO	Please explain
The proposed construction of the road will positively impact the local community by providing access to basic amenities, and minimizing the negative impact of flooding, and soil erosion.			

11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	YES	NO X	Please explain
No precedent will be set in the area; however the upgrade of the road from a track to a gravel road will improve accessibility for community members.			
12. Will any person's rights be negatively affected by the proposed activity/ies?	YES	NO X	Please explain
During the Public Participation Process no person expressed the view that the proposed activity will directly affect them, all stakeholders fully supported the project proposal. No dwellings will be relocated as the existing track does not transverse any properties or infringe on the rights of the residents.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	YES	NO X	Please explain
The project is located in a rural area, and therefore the urban edge is not affected.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	YES	NO X	Please explain
This is a localized site specific activity, and will benefit the local community members.			

15. What will the benefits be to society in general and to the local communities?	Please explain

There is an urgent need to ensure safe and reliable means of crossing the road for both vehicles and pedestrians. The proposed activity to upgrade the existing access road will encourage economic development in the area. The upgrade of the existing road will also make travelling for basic amenities, education and work feasible for local community members. The existing local road is prone to flooding particularly during periods of high rainfall, thus limiting the access to basic amenities. The local road may not have benefits as far reaching as to society in general, however, the upgrade of the existing access road lays the foundation for further and knock-on development which would lead to the upliftment of disadvantaged societies. The majority of the population has no formal education and is illiterate. Most community members are dependent on governmental social grants, pensions and even informal trading to earn a living. Therefore, the development of this area is of great importance. The proposed action of upgrading the existing road can be considered as the first step towards upliftment or development of the local community. The road will also allow for public transport modes to cater to the local community. The construction of the road would contribute to the community in the following ways:

- Vehicles would not have to endure rugged terrain.
- Communities will have easier access to public and governmental transportation.
- Travelling route distances would be decreased.
- Will increase the safety of the people within the community.
- Response and delivery time would be increased for public and emergency services.
- Easier travelling routes for basic needs, schools and medical centers.

16. Any other need and desirability considerations related to the proposed activity?	Please explain
According to the IDP (2012 to 2017) there is a critical need to improve access roads within the local municipality. The area is predominately rural and developmental initiatives are limited with regards to funding. The Department of Transport has funded the project and similar projects within the District. Communities expressed their excitement for the project, as they are of the view that the Government is taking their concerns of development seriously.	
17. How does the project fit into the National Development Plan for 2030?	Please explain
The National Development Plan for 2030 sets out strategic goals in terms of access to basic services and amenities. Although this project is site specific in nature, it contributes to the cumulative effect of developmental nodes of rural communities to the urban environments.	
18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.	
According to section 23 of NEMA the appropriate environmental management tools were applied effectively. The EAP is an independent person, appointed by Nankhoo Engineers to determine all negative as well as positive impacts of the proposed activities might have on the environment. Mitigation measures were also proposed in this report. All the information compiled by the EAP was rated in a scoring matrix, taking environmental, cultural heritage and ecological issues into account. The BAR will be circulated into the public domain for a Public Participation Process as described in NEMA. All comments received during the entire BAR process will be recorded as part of the Issues and Responses Report. Particulars regarding this Process have been included in **Appendix D.** All impacts with regards to the construction and operation of the pipe culverts have been identified in Section D. The impacts that have been identified must be managed and mitigated. These measures have been included in the Environmental Management Programme attached as **Appendix E**.	

19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.
All principles of NEMA have been taken into consideration. The construction of the pipe culverts will be socially sustainable due to the continuous access that will be provided to local community members. Access to basic amenities would be available at all times for community members. The proposed activity will ensure that community members gain access to schools at all times encouraging economic development. All factors mentioned in Section 2 (4) of NEMA were taken into consideration, assessed and discussed in Section D. Through Section 2 of NEMA it is understood that the principles as set out in this section have been taken into account through the proper application of a Basic Assessment Process as described by NEMA, and by assessing the predicted and actual impacts of the proposed activity in order to assist the Competent Authority in adequately making an informed decision.

6. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Environmental Management Act, 1998 (Act No 107 of 1998)	Environmental Authorisation is required in terms of Regulation R 983 of Dec 2014 (included within NEMA 107 of 1998)	Department of Environmental Affairs	1998
Environmental Impact Assessment Regulations (Notice No. R983 of 2014)	Guidelines with regards to the Environmental Impact Assessment Process to be undertaken	Department of Environmental Affairs	1998
Constitution of Republic of South Africa (Act No 108 of 1996)	The project falls within the boundaries of South Africa	Department of Environmental Affairs	1998
National Heritage Resources Act (Act No 25 of 1999)	Any possible artefacts which could be of cultural or historical significance must be identified	SAHRA	1999
National Environmental Biodiversity Act 10 of 2004	Damaging of, disturbance to or destroying of plant or animal species during the clearing of the site	Department of Environmental Affairs	2004
Integrated Environmental Management Guideline, Public Participation	Public Participation Process	Department of Environmental Affairs	2010

7. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	YES X	NO
If YES, what estimated quantity will be produced per month?		5 m^3

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

All solid waste will be disposed at the registered local landfill site. This will be addressed in the EMPr. The ECO will audit the EMPr and submission will be made to the CA for review.

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

The construction solid waste will be disposed of at the registered landfill site by the contractor. This will be addressed in the EMPr. The ECO will audit the EMPR and submission will be made to the CA.

Will the activity produce solid waste during its operational phase?	YES	NO x
If YES, what estimated quantity will be produced per month?		N/A m^3

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

N/A

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

N/A

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

N/A

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

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?	YES	NO X

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

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

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

b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?	YES	NO X
If YES, what estimated quantity will be produced per month?		N/A m^3
Will the activity produce any effluent that will be treated and/or disposed of on site?	YES	NO X

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

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

If YES, provide the particulars of the facility:

Facility name:			
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:

N/A

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other that exhaust emissions and dust associated with construction phase activities?	YES	NO X
If YES, is it controlled by any legislation of any sphere of government?	YES	NO

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

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

N/A

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?	YES	NO X

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

e) Generation of noise

Will the activity generate noise?	YES X	NO
If YES, is it controlled by any legislation of any sphere of government?	YES	NO X

Describe the noise in terms of type and level:

Noise will only be generated during the construction phase (machinery, generator etc.) The level of the noise is however low as there are no residents nearby. No noise will be generated during the operational phase, therefore the impact is temporary in nature.

8. WATER USE

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

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

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:	N/A	
Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?	YES	NO x

9. ENERGY EFFICIENCY

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

N/A

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

N/A

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

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

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

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

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

YES	NO
X	

Name of Specialist	Neelesh Ramasis
Qualification	Bsc. Environmental Science

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

Property description/physical address:	**Province**	Kwa-Zulu Natal
	District Municipality	UThukela Municipality
	Local Municipality	Okhahlamba Municipality
	Ward Number(s)	Ward 13
	Farm name and number	N/A
	Portion number	N/A
	SG Code	N/A

Is a change of land-use or a consent use application required? YES NO

1. GRADIENT OF THE SITE

Alternative S1:

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10 X	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

Alternative S2 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

Alternative S3 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:2.1 Ridgeline		2.4 Closed valley		2.7 Undulating plain / low hills	X
2.2 Plateau		2.5 Open valley		2.8 Dune	
2.3 Side slope of hill/mountain		2.6 Plain		2.9 Seafront	
2.10 At sea					

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

	Alternative S1:		**Alternative S2 (if any):**		**Alternative S3 (if any):**	
Shallow water table (less than 1.5m deep)	YES	NO X	YES	NO	YES	NO
Dolomite, sinkhole or doline areas	YES	NO X	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES X	NO	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO X	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO X	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO X	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	NO X	YES	NO	YES	NO
An area sensitive to erosion	YES X	NO	YES	NO	YES	NO

As per the site investigation on the 27/10/15, the following features have been identified:

Okhahlamba Municipality is one of the five local municipalities within the area of the UThukela district municipality. Okhahlamba is located west of Emnambithi/Ladysmith, neighboring the international boundary with Lesotho and Free State Province in the north (SDF, 2013) .The site for the proposed development is located in one of the villages in the Okhahlamba municipality off D364, along L1528.

The general topography of the region as per the site investigation was classified as undulating plains/low hills. The general gradient of the site is 1:15-1:10, which indicates generally a flat terrain. A water crossing along the route is present and development of pipe culverts will take place in order for community members to utilize, ensuring safety and movement across. The distance across the water crossing is approximately 20m. The pipe culverts can withstand heavy rains, a 1-10 year flood line. This is a statistical probability which means that in any given year there is a 10% chance that this area could flood, this can occur if the area is classified as a flood risk area (Dinicola, 2014). The water crossing is underlain by Sedimentary rock, which can be classified as sandstone.

During the summer months, increased rainfall leads to difficulty in crossing the watercourse, therefore the construction of culverts would be advantageous to the members of the community. The geology of the region is underlain by specific geological units, the Drakensberg Lembombo group, and the stormberg group which consists of sandstones of the lowermost Molteno formation. In these formations consists geological outcrops which have been identified on site as Sandstone. There exist very few geotechnical hindrances to development where areas are underlain by this specific type of rock. There are no steep slopes present in the area, due to the gradient and terrain being generally flat. Therefore there is no need for a slope stability assessment report. Sandstone is considered to be generally stable and good founding conditions occur for structures which occur at nominal depths.

Soils around this region exhibit a red/yellow colour, which is an indication of the presence of iron which is dominated by hematite and aluminum. Soils in this region

are shallow on hard weathering rock. Deep soil deposits are found along rivers and streams on level to moderate slopes. The area has an estimated clay content of between 30-50% near the watercourse. The banks of the watercourse are severely eroded and presence of gullies and dongas in this region are evident.

Some of the soils in this region are severely degraded due to geological influence, overgrazing and improper land use. There are no steep slopes or cliffs near the site of development which means that construction will not be hampered.

4. GROUNDCOVER

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

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

5. SURFACE WATER

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

6. LAND USE CHARACTER OF SURROUNDING AREA

Natural area	Dam or reservoir	Polo fields
Low density residential	Hospital/medical centre	Filling station [H]
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential[A]	Church	Agriculture
Retail commercial & warehousing	Old age home	River, stream or wetland
Light industrial	Sewage treatment plant[A]	Nature conservation area
Medium industrial [AN]	Train station or shunting yard [N]	Mountain, koppie or ridge
Heavy industrial [AN]	Railway line [N]	Museum
Power station	Major road (4 lanes or more) [N]	Historical building
Office/consulting room	Airport [N]	Protected Area
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam[A]	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	Other land uses (describe)

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

N/A

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

N/A

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

N/A

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

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

7. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:	YES	NO
	Uncertain	
A draft BAR has been uploaded onto the AMAFA website. Comment will be included in the final BAR.		

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

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

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

According to the recent statistics, the Okhahlamba Local Municipality has a total population of 132 068 and it is a sparsely populated area which is predominantly tribal. 97% of the population is black African. The primary enrolment rate is high in this municipality at 93,1 % but the matric pass rate is very low at 22,5% in 2011 (Stats SA, 2011).

The major contributors to the economy are agriculture, tourism and wholesale trade. The unemployment rate is 43%, which is among the highest in the district, which has a dependency ratio of 79. There is though a huge concern on the youth unemployment rate which is 52,3%. The largest employer is wholesale, retail trade, catering and accommodation (20%), while community services are the second largest employer at 18%. This is followed by manufacturing (15%) and general government (12%). The majority of the population within OLM does not receive any form of income, whilst 28% earn between R1-R400 pm and 11% earn between R801-R1600 per month. This is an indication of high levels of poverty and low levels of income.

Level of unemployment:

In Okhahlamba, the employment opportunities are scarce. This has escalated the unemployment levels both for skilled and unskilled labour. There has been a decrease in the unemployment rate since 2001 from 58.9% to 43% in 2011. Although this is positive, the high youth unemployment rate of 52.3% is a concern.

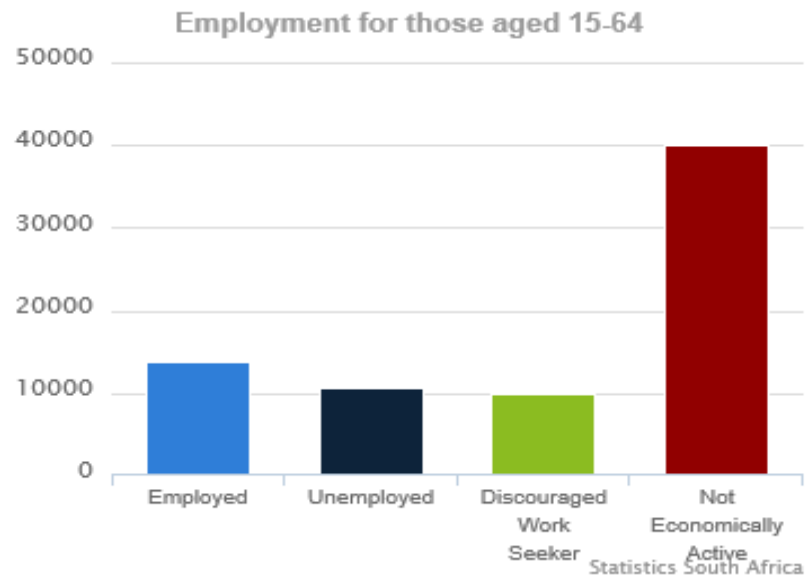


Chart showing unemployment levels within the Okhahlamba Local Municipality (Stats SA, 2011).

Employment Status	Number
Employed	13718
Unemployed	10501
Discouraged Work Seeker	9709
Not Economically Active	39853

Economic profile of local municipality:

Okhahlamba Municipality currently relies on subsistence agriculture, government services, government grants and migrant worker income to sustain its residents. There is extremely limited agricultural potential due to settlement pressure, traditional farming methods, poor bio-resource groupings and limited irrigation potential. Most residents sustain their families through subsistence agriculture or wage work in factories in and around Bergville, Ladysmith, Estcourt and Weenen. One of the major economic issues facing the Municipality is the fact that there are no major markets for the delivery and resale of products in the municipal area, and development nodes are minimal.

The chart below is an indication of the types of industry that people generally engage with, comprising mostly of community/ social and personal, wholesale/Retail and private households (IDP, 2012 – 2017, p20).

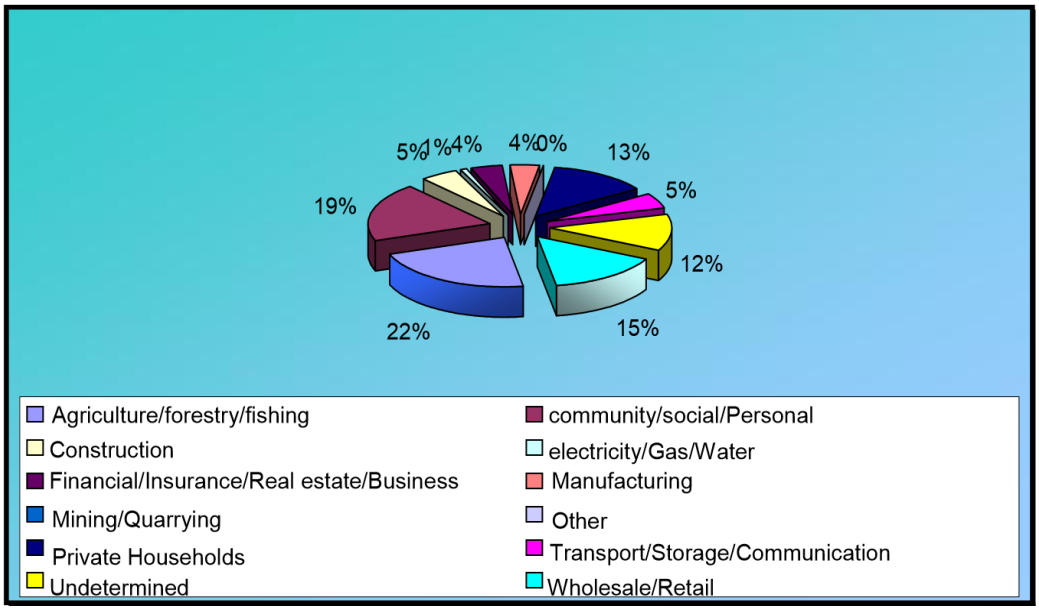
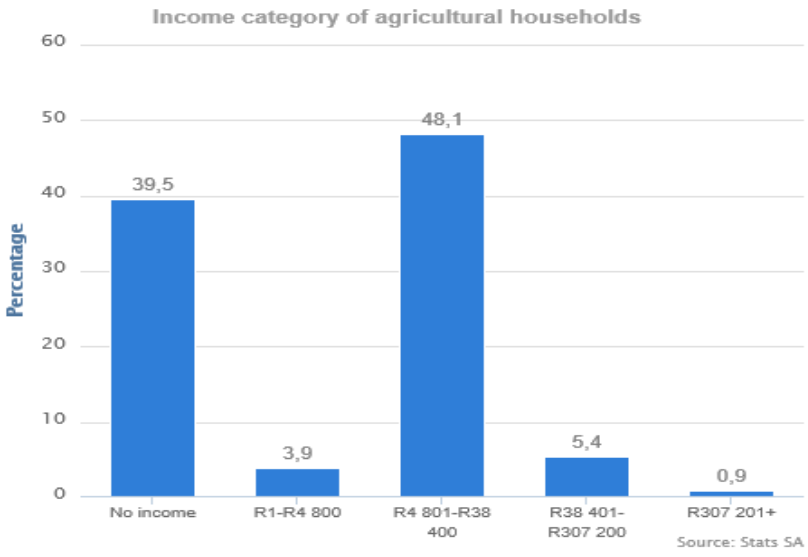


Chart 2: showing economic profile of OLM (IDP, 2012 – 2017, p20).

This is the income generated by each household with their agricultural produce to sustain their families.



Stats SA, 2011

Level of education:

There are no institutions of higher learning within the municipality. After matriculation, children either go to the Ladysmith Technical College to further their studies or move out of the UThukela District. The latter is not always practical and affordable as most people in the area cannot afford to provide their children with better education opportunities outside of the municipal area. The cost is simply too much. At primary and secondary levels the facilities are distributed all over the municipality and these are well utilized by the communities. There is, however, a need to extend or renovate most of the schools, as most are unsuitable for proper education purpose.

Group	Percentage
No Schooling	2,9%
Some Primary	46,4%
Completed Primary	6,3%
Some Secondary	31,8%
Completed Secondary	11,5%
Higher Education	0,5%
Not Applicable	0,7%

Showing levels of education in the municipality

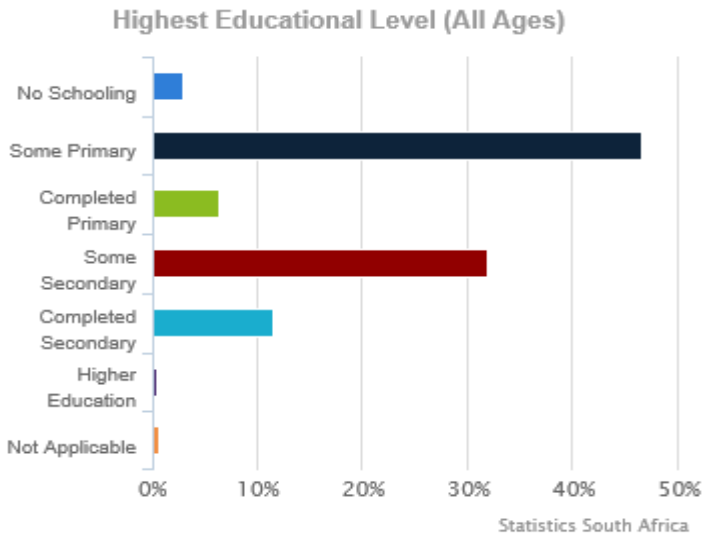


Chart: showing level of education in the municipality, (Stats SA, 2011)

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	To be determined	
What is the expected yearly income that will be generated by or as a result of the activity?	R N/A	
Will the activity contribute to service infrastructure?	YES X	NO
Is the activity a public amenity?	YES X	NO
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	15	
What is the expected value of the employment opportunities during the development and construction phase?	R 1.9 million	
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?	1	
What is the expected current value of the employment opportunities during the first 10 years?	N/A	
What percentage of this will accrue to previously disadvantaged individuals?	100 %	

9. BIODIVERSITY

Various sensitivity maps have been consulted during the desk studies, and no biodiversity issues were identified. The site is degraded and the presence of alien vegetation and existing footpaths have transformed the site, therefore the proposed activity will contribute to the rehabilitation of the site which has been outlined in the EMPr. A draft BAR has been submitted to KZN Wildlife for comments and forms part of the Public Participation Process.

A draft BAR has been sent to KZN Wildlife, comment will be included in the final BAR.

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

Systematic Biodiversity Planning Category				**If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan**
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	N/A

b) Indicate and describe the habitat condition on site

Habitat Condition	**Percentage of habitat condition class (adding up to 100%)**	**Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).**
Natural	%	
Near Natural (includes areas with low to moderate level of alien invasive plants)	%	
Degraded (includes areas heavily invaded by alien plants)	%	
Transformed	100 %	The existing road has been utilized as an access

(includes cultivation, dams, urban, plantation, roads, etc)		road over a number of years, therefore the site has become degraded by footpaths and erosion.

c) Complete the table to indicate:

(i) the type of vegetation, including its ecosystem status, present on the site; and

(ii) whether an aquatic ecosystem is present on site.

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

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

Natural vegetation is minimal being invaded by alien vegetation and footpaths. The area has become completely transformed and offers no significant biodiversity or natural pristine ecosystems**.**

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Illanga Newspaper	
Date published	12/11/2015	
Site notice position	**Latitude**	**Longitude**
	28˚28'32''	29˚17'07''
Date placed	12/11/2015	

Include proof of the placement of the relevant advertisements and notices.

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 983.

A site notice was placed at a strategic point along the route on the 12th of November 2015, and a Newspaper article in IsiZulu was published in the Ilanga Newspaper on the 12th of November 2015 (See **Appendix D**). The elected ward councillor of the area was made aware of the proposed development, and subsequently a site walkover was undertaken to outline the proposed route upgrade. A hand delivered proposal letter was signed by the ward councillor informing him about the proposed project (date of hand delivery 12/11/2015 see acknowledgment of receipt). The elected structure that currently exists was chosen to be the most appropriate means of informing community members of the proposed project. All organs of state that were identified during the process have been informed and requested to comment on the BAR. (See **Appendix D** for confirmation of all correspondence to stakeholders and "comments & responses"). The ward councillor has indicated that no Tribal Authorities (INDUNA) exist in this area, the land is presently owned by the individual home owners, and no objections were raised by these land owners during PPP.

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2) (b) of GN 983

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
Mr Kenneth Simelane	Ward Councillor	082 071 4759

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
No concerns have been raised by the local community, other than the lack of formal access to all amenities. The ward councillor expressed the need for a local road, and the employment opportunities that will be created during the construction phase. **The upgrade of the local road is a priority for DOT projects for the next financial year (2016/17).**	Responses have been included in the **Appendix D** entitled 'Comments Received'

4. COMMENTS AND RESPONSE REPORT

SEE **APPENDIX D** FOR COMMENTS AND REPONSES REPORT.

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	e-mail	Postal address
Department of Transport	Mr C. Mkhonto	036 6384400	chris.mkhonto@kzntransport.gov.za	Private Bag x9911 Ladysmith 3370
Amafa	Ms Bernadet	033 3946543	bernadetp@amafapmb.co.za	P.O.Box 2685 PMB 3201
Okhahlamba Municipality	Mr N. Malinga	036 4488000	nkosi.malinga@okhahlamba.org	P.O Box 71 Bergville 3350
KZN Wildlife	Mr D Wieners	033 8451999	Dominic.Wieners@kznwildlife.com	P.O.Box 13053 3202
Department of Water & Sanitation	Mr S. Govender	031 3362798	govenders@dwa.gov.za	P.O. Box 1018 Durban 4000

SECTION D: IMPACT ASSESSMENT

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

N.B All mitigation measures have been outlined in specific detail in the EMPr **(Appendix E),** therefore this section must be read in conjunction with the EMPr. The impacts that have been outlined below relate to both activities. Due to this being a linear development and the access road following the existing track, no alternative routes have been investigated. The proposed upgrade will follow the existing track which will have minimal impact to the environment as no further disturbance is envisaged. Furthermore the proposed culvert construction will also be constructed along an existing crossing which has already been disturbed by human activities. It is not feasible to construct the culverts at a “new crossing point” since this will have adverse negative impacts to the environment. For reporting purposes the existing route will be investigated and forms the preferred alternative **(Route 1).**

1.1 Selection of Route – Access Road

The selection of an access road will have the greatest environmental impact. The proposed gravel road will be constructed along an existing track. The area is degraded with the presence of alien vegetation and highly eroded banks. Therefore the existing road has been selected as the preferred alternative as not to cause further disturbance to the environment. Engineering Designs prepared by DOT has taken the most efficient techniques with minimal impact to the environment into consideration. Generally, roads are constructed along the path of least disturbance, often following existing tracks.

1.2 Selection of Site – Culvert Structure

The selection of a culvert crossing point will have the greatest environmental impact. The proposed new culvert structure will be constructed along an existing crossing point with footpaths that have been developed over the years. The area is degraded with the presence of alien vegetation. Therefore the existing crossing point has been selected as the preferred alternative as not to cause further disturbance to the environment. The proposed local road forms part of the culvert crossing.

Impact Rating

Methodology used to determine impacts

The following presents the assessment criteria used to evaluate the impacts resulting from the proposed development. Assessments of potential impacts are taken into account to give a summary of the impacts that would take place on site during construction time. Management and mitigation of impacts have been taken into account, with specific reference to types of impacts, duration of impacts, likelihood of potential impacts actually occurring and the magnitude.

Impact Assessment Methodology

The impacts that may result from the construction phase and operation phase of the project was assessed according to a number of criteria to arrive at an overall significance rating. The criteria used were as follows:

Ranking Scales for Environmental Risk Assessment

Probability Rating (P)

Rating	Probability
5	Definite
4	High Probability
3	Medium Probability
2	Low Probability
1	Improbable
0	None

Duration Rating (D)

Rating	Duration
5	Permanent
4	Long term (ceases with operational life)
3	Medium Term (5-15 years)
2	Short-term (0-5 years)
1	Immediate

Scale Rating (S)

Rating	Scale
5	International
4	National
3	Regional
2	Local
1	Site
0	None

Magnitude Rating (M)

Rating	Magnitude
10	Very High
8	High
6	Moderate
4	Low
2	Minor

After each impact is rated according to the ranking scales above, the **environmental significance** of each impact could be assessed by applying the following formula:

SP= (MAGNITUDE (M) + DURATION (D) + SCALE(S) x PROBABILITY (P)

Where SP is defined as significance points. The maximum value of significance points (SP) is 100. Environmental effects could therefore be rated as either high (H), moderate (M), or low (L) significance is based on the following:

Rating	SP
>60 Points	High (H) Environmental Significance
30-60 Points	Moderate (M) Environmental Significance
<30 Points	Low (L) Environmental Significance

Positive and negative impacts of the proposed activity

Impact	**Impact type** **Positive (+ve) or** **Negative (-ve)**	**Activity/Mitigation**	**Preferred Alternative**				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
Dust Pollution	**(-)**	During construction high levels of dust is emitted into the atmosphere by construction vehicles and sediment is produced as a result of dust that enters the environment in rainfall runoff. These impacts are short-term and will only result over construction period. No surrounding dwellings will directly be affected. These impacts have been addressed in detail within the EMPr.	Local	Immediate	Medium	Minor	**Low Environmental Significance**
			Score Rating				
			2	1	3	2	15

Impact	Impact type Positive (+ve) or Negative (-ve)	Activity/Mitigation	Preferred Alternative				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
Spillages	**(-)**	Construction vehicles pose major threats with regards to spillages on-site; this may result in the contamination of soil and water. The presence of fuels on-site may have a negative impact on the groundwater. Cement mixing/spillages on open ground pose a threat to the receiving environment. Mixing of cement must take place on a tray. These impacts have been addressed in the EMPr.	Site	Immediate	Medium	Low	**Low Environmental Significance**
			Score Rating				
			1	1	3	4	18

Impact	**Impact type** **Positive (+ve) or** **Negative (-ve)**	**Activity/Mitigation**	**Preferred Alternative**				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
Soil erosion	**(-)**	All topsoil that will be removed during construction will be prone to erosion; therefore all topsoil must be stockpiled using the appropriate erosion control techniques. Soil erosion was evident at various points along the existing path. A vegetation rehabilitation plan will be included in the EMPr to address the mitigation measures that must be implemented to reduce soil erosion on site.	Site	Immediate	Medium	Low	**Low Environmental Significance**
			Score Rating				
			1	1	3	4	18

Impact	**Impact type** **Positive (+ve) or** **Negative (-ve)**	**Activity/Mitigation**	**Preferred Alternative**				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
Unplanned routes/footpaths	**(-)**	Construction workers may disturb or create footpaths that are not planned or existing, which may lead to areas becoming prone to erosion and spread of alien vegetation. Strict control measures must be implemented by the Contractor and ECO. All areas must be clearly demarcated and incidents must be reported immediately to the site agent.	Site	Immediate	Medium	Minor	**Low Environmental Significance**
			Score Rating				
			1	1	3	2	12

Impact	**Impact type** **Positive (+ve) or** **Negative (-ve)**	**Activity/Mitigation**	**Preferred Alternative**				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
Water quality	**(-)**	During construction, water quality is compromised. This is mainly due to human activity and by implementing inappropriate techniques such as diverting the flow of the water course. Pollution of the water course is also a major concern during construction, such as washing of equipment and discharging waste into the river. These impacts have been addressed thoroughly in the EMPr.	Site	Immediate	High	Low	**Low Environmental Significance**
			Score Rating				
			1	1	4	4	24

Impact	Impact type Positive (+ve) or Negative (-ve)	Activity/Mitigation	Preferred Alternative				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
Habitat Fragmentation	**(-)**	Roads can act as barriers or filters to animal movement and lead to habitat fragmentation. Many species will not cross the open space created by a road due to the threat of predation, and roads also cause increased animal mortality from traffic. This barrier effect can prevent species from migrating and re-colonizing areas where the species has gone locally extinct as well as restricting access to seasonally available or widely scattered resources. The proposed development follows an existing track therefore this will pose a low	Site	Short-term	High	Low	**Low Environmental Significance**
			Score Rating				
			1	2	4	4	28

Habitat Fragmentation Continued		environmental impact as the site is already disturbed. These impacts have been addressed in the EMPr.					

Impact	**Impact type** **Positive (+ve) or** **Negative (-ve)**	**Activity/Mitigation**	**Preferred Alternative**				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
Impact on surface and ground water	**(-)**	Spillage of chemicals and oil and fuel leaks from construction vehicles may result in the contamination of soil and groundwater. Proper management should be practiced to prevent contamination topsoil in the event of negligent fuel storage and cement mixing. Poor management with regards to solid waste collection at the construction site could lead to surface water contamination. These impacts have been addressed in detail within the EMPr.	Site	Short-term	Low	Moderate	**Low Environmental Significance**
			Score Rating				
			1	2	2	6	14

Impact	**Impact type** **Positive (+ve) or** **Negative (-ve)**	**Activity/Mitigation**	**Preferred Alternative**				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
Impact of Storm water	**(-)**	Storm water could lead to erosion without the proper mitigation measures in place, and side drains not properly constructed. A proper storm water management plan must be drawn and culverts or drains placed on appropriate locations as approved by the engineer. These impacts have been addressed in the EMPr.	Site	Short-term	Low	Low	**Low Environmental Significance**
			Score Rating				
			1	2	2	4	14

Impact	**Impact type** **Positive (+ve) or** **Negative (-ve)**	**Activity/Mitigation**	**Preferred Alternative**				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
Sanitation	**(-)**	Inadequate sanitation could lead to pollution of the water table. Proper sanitation facilities must be made available on site and they must be away from any water body to prevent contamination. These impacts have been addressed in the EMPr.	Site	Short-term	Medium	Low	**Low Environmental Significance**
			Score Rating				
			1	2	3	4	21

Impact	**Impact type** **Positive (+ve) or** **Negative (-ve)**	**Activity/Mitigation**	**Preferred Alternative**				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
Heritage impacts	**(+)**	There are no artifacts or historical sites in close to the development area but if any artefacts or fossils are found during the construction phase, work should cease immediately and the relevant authority be informed. These impacts have been addressed in the EMPr.	Local	Short-term	Medium	Moderate	**Moderate Environmental Significance**
			Score Rating				
			2	2	3	6	30

Impact	**Impact type** **Positive (+ve) or** **Negative (-ve)**	**Activity/Mitigation**	**Preferred Alternative**				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
Noise disturbance	**(-)**	Construction machinery and personnel could disturb the peace in the surrounding area as there are residents along the development site. This will be minimal and short term as it will be during the construction phase. There will also be a limit to operational hours. These impacts have been addressed in the EMPr.	Site	Immediate	Medium	Minor	**Low Environmental Significance**
			Score Rating				
			1	1	3	2	12

Impact	**Impact type** **Positive (+ve) or** **Negative (-ve)**	**Activity/Mitigation**	**Preferred Alternative**				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
Waste Disposal	**(-)**	Waste is generated through construction activities and therefore the possibility of the area being polluted is increased. All waste must be transferred to a nearby landfill site. These impacts have been addressed in the EMPr	Site	Short-term	Medium	Minor	**Low Environmental Significance**
			Score Rating				
			1	2	3	2	15

Impact	**Impact type** **Positive (+ve) or** **Negative (-ve)**	**Activity**	**Preferred Alternative**				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
Socio-Economic Impact	**(+)**	Construction creates temporary employment for community members. The road would increase the potential for residents to improve their business potential both locally and give them better access to outside markets. The road can bring in potential investors for future projects. These impacts have been addressed in detail within the EMPr.	Local	Short-term	Definite	N/A	**Low Environmental Significance**
			Score Rating				
			2	2	5	N/A	20

Impact	**Impact type** **Positive (+ve) or** **Negative (-ve)**	**Activity**	**Preferred Alternative**				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
No-go option	**(-)**	Safety - During most rainy seasons, the local road is flooded. The local community's safety will therefore be compromised.	-	-	-	-	**-**
			Score Rating				
			-	-	-	-	-

Impact	**Impact type** **Positive (+ve) or** **Negative (-ve)**	**Activity/Mitigation**	**Preferred Alternative**				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
Spread of Alien Vegetation	**(-)**	The removal of topsoil and natural vegetation with an increase in human activity may result in the increase of alien vegetation. The vegetation rehabilitation will address this issue in more detail within the EMPr.	Local	Short-term	Medium	Moderate	**Moderate Environmental Significance**
			Score Rating				
			2	2	3	6	30

Impact	**Impact type** **Positive (+ve) or** **Negative (-ve)**	**Activity/Mitigation**	**Preferred Alternative**				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
Waste Disposal	**(-)**	Waste such as plastic and paper will impact surrounding animals if ingested. These impacts have been addressed in the EMPr.	Local	Short-term	Low	Moderate	**Low Environmental Significance**
			Score Rating				
			2	2	2	6	20

Impact	**Impact type** **Positive (+ve) or** **Negative (-ve)**	**Activity/Mitigation**	**Preferred Alternative**				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
Socio-Economic Impact	**(+)**	Improved living standards. Roads give easy access to basic needs. These impacts have been addressed in the EMPr.	Local	Permanent	High Probability	N/A	**Low Environmental Significance**
			Score Rating				
			2	5	4	N/A	28

Impact	**Impact type** **Positive (+ve) or** **Negative (-ve)**	**Activity**	**Preferred Alternative**				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
No-go option	**(-)**	Safety - During most rainy seasons, the river crossing is flooded. The local community's safety will therefore be compromised.	-	-	-	-	**-**
			Score Rating				
			-	-	-	-	-

Cumulative/significance impacts

Impact	**Impact type** **Positive (+ve) or** **Negative (-ve)**	**Activity/Mitigation**	**Preferred Alternative**				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
Water Resource	**(-)**	Water will be required during the construction phase that may lead to extra demands on the local water resources of the municipality. However, water will be transported to the site via tanks which will minimize the impact. These impacts have been addressed in the EMPr.	Local	Immediate	High Probability	Moderate	**Moderate Environmental Significance**
			Score Rating				
			2	1	4	6	36

Impact	**Impact type** **Positive (+ve) or** **Negative (-ve)**	**Activity/Mitigation**	**Preferred Alternative**				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
Waste Generation	**(-)**	Extra waste generated during the construction phase could result in added pressure placed on the local landfill site. Recycling will be encouraged. Organic waste can be separated from the inorganic waste and a composting bin can be placed for organic waste which can later be used for gardening once ready. These impacts have been addressed in the EMPr.	Local	Immediate	Medium	Moderate	**Low Environmental Significance**
			Score Rating				
			2	1	3	6	27

Impact	**Impact type** **Positive (+ve) or** **Negative (-ve)**	**Activity**	**Preferred Alternative**				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
No-go option	**(-)**	Safety - During most rainy seasons, the road is flooded. The local community's safety will therefore be compromised.	-	-	-	-	**-**
			Score Rating				
			-	-	-	-	-

Impacts/Significance associated with the Operational Phase

Impact	**Impact type** **Positive (+ve) or** **Negative (-ve)**	**Activity/Mitigation**	**Preferred Alternative**				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
Increased traffic in the area	**(-)**	The proposed road upgrade would lead to increased traffic in the area. However since the road primarily services the local community this should not have a significant impact on them.These impacts have been addressed in detail within the EMPr.	Local	Permanent	Medium	Moderate	**Moderate Environmental Significance**
			Score Rating				
			2	5	3	6	39

Impact	**Impact type** **Positive (+ve) or** **Negative (-ve)**	**Activity/Mitigation**	**Preferred Alternative**				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
Increased vehicular fumes contributing to Air Pollution	**(-)**	It is not envisaged that the increased vehicular fumes will contribute significantly to increased localized air pollution but may have a cumulative effect. These impacts have been addressed in the EMPr.	Local	Medium-term	Medium	Moderate	**Moderate Environmental Significance**
			Score Rating				
			2	3	3	6	33

Impact	**Impact type** **Positive (+ve) or** **Negative (-ve)**	**Activity**	**Preferred Alternative**				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
Increased socio-economic benefits	**(+)**	The positive impact is that of increased socio-economic development to the local community. The road will provide easy access to basic enmities such as schools and clinics for the community. These impacts have been addressed in the EMPr.	Local	Permanent	High Probability	N/A	**Low Environmental Significance**
			Score Rating				
			2	5	4	N/A	28

Impact	**Impact type** **Positive (+ve) or** **Negative (-ve)**	**Activity**	**Preferred Alternative**				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
Safety Issues for the community	**(+)**	The proposed road is merely an upgrade of the existing track; therefore safety issues do not pose a major threat. These impacts have been addressed in the EMPr.	Local	Long term	Low Probability	Minor	**Low Environmental Significance**
			Score Rating				
			2	4	2	2	16

Impact	**Impact type** **Positive (+ve) or** **Negative (-ve)**	**Activity/Mitigation**	**Preferred Alternative**				
			Scale	Duration	Probability	Magnitude	Significance points (SP)
Increased noise	**(-)**	The road services the local community therefore noise levels should not be affected greatly by the upgrade. These impacts have been addressed in the EMPr.	Local	Short-term	Medium Probability	Minor	**Low Environmental Significance**
			Score Rating				
			2	2	3	2	18

Possible mitigation measures and level of risk

Mitigation measures of Planning and Design phase

Activity	Impact summary	Significance	Proposed mitigation
N/A	***Direct impacts:*** No direct impacts were identified.	N/A	There are no mitigation measures to consider.
	Indirect impacts: No indirect impacts were identified.	N/A	There are no mitigation measures to consider.
	Cumulative impacts: No cumulative impacts were identified.	N/A	There are no mitigation measures to consider.

Mitigation measures during Construction Phase

Activity	Impact summary	Significance	Proposed mitigation
	Direct impacts:		
• Vegetation clearing • Removal of indigenous species.	**Habitat Fragmentation:** Roads can act as barriers or filters to animal movement and lead to habitat fragmentation. Many species will not cross the open space created by a road due to the threat of predation, and roads also cause increased animal mortality from traffic. This barrier effect can prevent species from migrating and recolonizing areas where the species has gone locally extinct as well as restricting access to seasonally available or widely scattered resources. This will be a low negative impact as a track already exists, and the new proposed gravel road is an upgrade, therefore the route has been disturbed by the existing track and footpaths.	**Low Negative**	Clearing of vegetation should be kept to a minimum and must be introduced in a phased manner, where rehabilitation is immediately undertaken as soon as a section of road construction is finished. No animals shall be harmed. Fire control should be implemented.

Activity	Impact summary	Significance	Proposed mitigation
• Stripping of topsoil • Excavation (for the stormwater drainage channels, service trenches and access road) incorrectly managed topsoil and construction stockpiles Soil compaction during bulk earth works (soil moisture content).	**Increased Storm Water run-off and Soil Erosion :** Soil erosion may occur where the soils' moisture absorption capacity and rate are decreased. This causes increased runoff which subsequently promotes erosion. During the construction phase, soil erosion may arise from activities which expose and/or compact the soil layer. Such activities (decreased ability for soil to absorb water), and may cause unnecessary soil erosion. Incorrect topsoil stripping and stockpile management can result in soil losses via erosion (wind and water)	**Low Negative**	A full depth topsoil should be stripped from areas affected by construction and related activities prior to the commencement of major earthworks. This should include all working areas and storage areas. Soils that are compacted during the construction of the road should be efficiently ripped to loosen and even the compacted layers. This will provide for a balanced absorption rate. Vehicle access to the site must as far as possible be limited to existing roads. If new roads need to be constructed, they should follow cleared areas such as cattle pathways.

	Increased Storm Water run-off and Soil Erosion : Since the construction phase is a short term, temporary phase, erosion must be monitored during earth work activities as guided by the specification of the EMPR. It is thus possible to prevent erosion to acceptable levels.	**Low Negative**	The site must be managed in a manner that prevents pollution of downstream watercourses or groundwater, due to suspended solids, silt or chemical pollutants. Temporary cut-off drains and berms may be required to capture stormwater and promote infiltration and protect from erosion.

Activity	Impact summary	Significance	Proposed mitigation
Construction activities within/ near the non-perennial river	**Water quality** Pollution from construction waste and hazardous waste may enter the non-perennial tributaries. Uncontrolled excavation or stock piling may result in river sedimentation. **Impact on Streams cont....**	**Medium Negative** **Medium Negative**	The extent of the construction site at the stream crossings must be kept as minimal as possible and must be clearly demarcated. Construction activities must be restricted to defined area. The road upgrade at the crossings must: • Be seated at the same ground level as the existing structure and follow the present gradient, so as not to change present hydraulic flows to or cause hydraulic disturbance at outlet points • Restrict the removal or disturbance of aquatic or riverine vegetation to areas of direct construction only and such area shall be kept to the minimum possible. • Be provided with appropriate anti – erosion measures to reduce and manage scour at the interface of the structure and

			streambed or erosion of the base or banks of the watercourse in question. • No diversion of an existing stream or water course is permitted, without approval. • No plant material, fish or fauna may be removed from the site under any circumstances.

Activity	Impact summary	Significance	Proposed mitigation
Use of construction machinery Vehicles	**Increased Noise Generation:** Excessive noise pollution from the construction sites may impact the surrounding environment. Construction machinery (e.g. jackhammer) and construction vehicles (e.g. trucks loaded with stone) will create noise. Such noise will be generated in a discontinuous fashion during daytime only while the road is being built.	**Low Negative**	Dust and noise during construction must be monitored and controlled so as to minimise disturbance to wildlife and users of the reserve. The EMP outlines mitigation measures in more specific detail.
Vehicular movement on dust roads Exposure of soil excavation activities	**Increased Dust Generation :** Movement of machinery and haul vehicles to the site is likely to lead to increased dust. Besides its nuisance factor to humans, increased dust deposition on roadside vegetation may negatively affect plant growth and wildlife grazing on this vegetation.	**Low Negative**	Factors such as wind can often affect the intensity to which these impacts are experienced. Drilling and other noise and dust creating construction activities should be restricted to normal working hours between 08h00 and 16h00. All material stockpiles are to be covered with a temporary cover, such as heavy duty shade cloth or tarpaulin, in order to control dust and migration of the material beyond the storage area. Where necessary

	Increased Dust Generation cont....	**Low Negative**	and feasible water may be sprayed as a dust suppressant. Progressive replacement of vegetation cover as construction is completed along the route must be undertaken. As far as is practically possible use is to be made of species occurring within 100 m of the road route during re-vegetation and rehabilitation.
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
Excavation	**Heritage impacts (Damage to Cultural / Paleontological Resources)** No sites of heritage significance were identified at the project site as reported in the Paleontological and Archaeological Impact Assessments However, cultural, heritage and paleontological artefacts may potentially be uncovered during excavation and/or possibly damaged by construction activity.	**Low Negative**	The fenced area must be avoided during construction. Continued care should be taken to observe any site of heritage significance during construction. Should any archaeological artefacts and paleontological remains be exposed during construction, work on the area where artefacts were found will cease immediately and appropriate department and/ or person will be notified as soon as possible.

Activity	Impact summary	Significance	Proposed mitigation
• Removal of grass layer • Rehabilitation of cleared areas	**Loss of species -Vegetation** Loss of important Taxa and ineffective vegetation rehabilitation measures could result in encroachment of alien vegetation.	**Low Negative**	The rehabilitation around the project area must be done with indigenous grasses local to the area and that require minimal horticultural maintenance. All weeds and invasive vegetation should be eradicated over a period of time.
Incorrect disposal of construction waste	**Waste Management Impact – loss of natural habitat and impact on the visual landscape** The incorrect disposal of construction waste could lead to a negative visual impact and loss of natural habitat. With appropriate mitigation this impact will be reduced to an insignificant level. There is not a lot of rubble generated with the construction of a structure. The bulk will be concrete and this will be spoiled in borrow pits and in Landfills.	**Low Negative**	A well-organized site must be kept to ensure minimal negative visual impact. Construction rubble and waste must not be allowed to be dumped permanently at the site, but must be removed by the contractor. The contractor must provide adequate waste disposal and sanitation facilities. Portable toilets must be provided and adequate facilities for the cooking needs of the construction workers should be provided. During construction, wastes must be separated at source and disposed at relevant suitably licensed facilities. Waste should be separated into recyclable and

	Waste Management Impact – loss of natural habitat and impact on the visual landscape cont.....	**Low Negative**	non-recyclable materials and distributed for recycling where applicable. During the construction phase, construction waste will be used as fill material and as foundation for the proposed upgrade processes where possible. The re-use of construction waste materials will minimize the amount of waste that will need to be disposed of at registered municipal waste facilities. Only inert, non-hazardous construction material will be re-used.

Activity	Impact summary	Significance	Proposed mitigation
Storage of hazardous chemicals	**Increased risk of fires** Fires may occur as a result of incorrectly stored chemicals such as fuel, oil and chemical spills; or from cooking and heating activities by workers.	**Low Negative**	All hazardous chemicals used on site, must be stored in appropriate containers and within a bund or bunded area to prevent spills (bunding must provide for 110% capacity of chemicals contained). Hazardous waste that may arise from construction activity must be correctly containerised, stored undercover and timeously removed by appropriate contractors. Hazardous waste that may arise from construction activity must be correctly containerized, stored undercover and timeously removed by appropriate contractors. Spill Kits and Fire control equipment must be kept on site and selected staff must be

			provided with fire fighting training.
Activity	**Impact summary**	**Significance**	**Proposed mitigation**
Excavation activities	**Interruption of Existing Services:** Damage to existing power line, water pipes or fixed-line telephone services could occur. As a matter of principle, existing services will be protected by marking, fencing or barriers from interruption by road building activities.	**Low Negative**	Existing service infrastructure, e.g. telephone lines, etc, should be clearly demarcated before work commences to avoid disruptions of services to the surrounding agricultural community. If services need to be shut down temporarily, an official with the necessary expertise should supervise this to ensure that infrastructure services are reinstated within an acceptable timeframe.
Acquisition of contract workers	**Job Creation** The project will include temporary job creation for the local communities. In terms of sustainability, selected workers will be provided prior to construction, which will allow for skill development in the community.	**High Positive**	No mitigation is required.

Activity	Impact summary	Significance	Proposed mitigation
Maximising security of the site	**Site Establishment** The construction camp and storage site should be fenced for the duration of the construction phase, in order to give maximum security to the surrounding environment and materials.	**Low positive**	No mitigation is required.

Activity	Impact summary	Significance	Proposed mitigation
	Indirect impacts:		
Storm water management	Storm water contamination has been listed as a direct environmental impact that may arise from chemical or solid waste that spills or enters streams or ground water. Storm water contamination can also be an indirect impact of erosion. Since erosion may result in sedimentation of downstream watercourses	**Low Negative**	The storage of chemicals must comply with the relevant provisions of the hazardous materials legislation. As a minimum legible signage must be in place and staff must be provided with appropriate training by the contractor. Erosion should be managed in order to prevent the indirect impacts of sedimentation

Mitigation measures during Operational Phase

Activity	Impact summary	Significance	Proposed mitigation
	Direct impacts:		
Chemicals and wastes generated from vehicles and residents.	**Storm Water pollution:** Runoff from roads and impervious surfaces may collect petrol, motor oil, heavy metals, general waste or other pollutants generated from vehicles. This may enter the storm water drains, which may ultimately contaminate surface and underground waters.	**Low Negative**	The responsibility lies with the road users and surrounding communities to practice proper waste management i.e. Prevent littering, dumping of both hazardous and general waste. Although, listed, this impact is considered relatively low as no significant contamination is expected for the project area.

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	Direct impacts:		
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Summary of the risk rating:

The proposed development route has been carefully planned to cater for the proven needs and necessities of the community while being mindful of imposing the least negative environmental impacts. The route occurs within the existing road servitude. Vegetation clearance will be restricted to alien invasive vegetation; no indigenous vegetation will be removed as the upgrade follows the existing track indicating disturbance. The preferred route does not transverse any environmentally sensitive area (wetlands) as well as homesteads. It is more cost effective and considered a more practical alternative from an environmental and engineering perspective. Furthermore the route follows the existing track which has resulted in significant alteration of the natural habitat. According to the risk rating after all significant impacts were taken into consideration, the preferred route is said to have a **low environmental significance** after all impacts were rated individually. It was found that most of the impacts listed and rated have a low environmental significance.

Alternative 2

No alternative site or route has been identified. Alternative alignments would require additional disturbance to the environment with very little potential of improvement in terms of environmental performance. This is a linear activity and the proposed gravel road will be upgraded on the existing track to minimise negative impacts to the environment, furthermore DOT has assessed other options and none were cost effective. As a new road will require relocation of dwellings and disturbance to the natural state of the surroundings. Therefore upgrading the existing track with portal culverts along existing crossing points is the most feasible option. The road design has taken numerous engineering methodologies into consideration which has a minimal impact on the environment, by improving drainage and reducing soil erosion along the road. The road has been designed in accordance to DOT standards. It would be more cost effective to upgrade the road which follows an existing track, rather to construct a new road which would have negative impacts on the surrounding environment as well as on the flora and fauna of the area.

6. ENVIRONMENTAL IMPACT STATEMENT

Alternative A (preferred alternative)

It is the opinion of the EAP that all potential impacts that could potentially occur during the construction and operational phase of the road construction have been identified and key impacts and their mitigation measures are provided in this report. There are no route alternatives as the existing road will be upgraded to a gravel road causing minimal negative impact to the environment. No fatal flaws were identified during the Basic Assessment Process, which included a comprehensive Public Participation Process. Most of the impacts will occur during the construction phase, and therefore be for a limited period and can be adequately mitigated. The EMPr has been developed to provide adequate mitigation measures for all phases of the proposed development including the proposed culvert construction.

The following factors were taken into consideration (Access Road):

A) Site and route

- The route and site location has been selected based on the fact that an existing track is currently used as an access road, however this is not suitable. DOT therefore proposes to upgrade the existing track to a gravel road which conforms to DOT standards.
- The existing route is disturbed and footpaths have been created along the track.
- Should a new access road be constructed this will impact negatively on the receiving environment.

B) Land

- No land needs to be expropriated and the community has expressed the need for the track to be upgraded to a gravel road.
- No land will be lost that is currently utilized by the community or the school.

C) Design of the gravel road

- The proposed design of the gravel road has taken DOT standards into consideration. This will improve the overall drainage of the road and minimize surface run-off and erosion along the road verges.
- The route is relatively gentle in gradient and no major modifications are

envisaged along the route.

D) Funding

- DOT has made funding available for this financial year 2015/16, the upgrade falls within the ambient of road infrastructure projects for the local municipality.

It is the opinion of the EAP that the proposed access road should be constructed.
The construction would result in minor environmental impact whilst promoting development in the area. The construction of this road from an environmental perspective will result in an improved situation with minimal erosion and damage caused by storm water run-off.

The following factors were taken into consideration (culvert structure):

Damage to stream and surrounding environment:

Specific concerns would be heavy vehicle traffic operating in close proximity to the stream and drainage line causing banks to erode and collapse, resulting in sedimentation of the stream. Storage of materials and soil within or near the stream could also result in the deposition of these materials into the stream leading to contamination of the river system. These impacts can be managed by designating areas of the watercourse that are not within the construction footprint as 'no-go' areas. Heavy vehicles should therefore be kept at least 15 m away from the stream and drainage line except where needed for the construction of the culverts.
As per the EMPr, no materials may be stored within 30 m of the stream or drainage line. No dumping is to be permitted within these areas.

Damage to the steam channel during the excavation of material from the stream bed.

Over time, sediment has accumulated up stream and flow was impeded. This material will be excavated to level out the bed so that water can flow easily through without damming up on the upstream side or falling from too great a height. Although this involves excavation and removal of material from the river bed, most

of this material will be re-used in the rehabilitation phase.

It is the opinion of the EAP that the proposed culverts should be constructed. This construction would result in minor environmental and social impact, as minor vegetation will be removed and general disturbance for the construction of the culverts at this point. The culverts will be designed to withstand at least 1:10 year flood events therefore providing safe access to the local community. The construction of culverts from an environmental perspective will result in an improved situation with less erosion and damage to the stream bed when compared to the current informal crossing. It is not logical to upgrade the existing road without constructing a proper crossing point, therefore both activities are recommended provided the construction EMP is strictly adhered to and an ECO is appointed during the construction phase.

Alternative B

N/A

Alternative C

N/A

No-go alternative (compulsory)

Should the proposed construction of both the road and culverts not go ahead, the site would be exposed to on-going erosion as well as major safety concerns for crossing the existing track during high rainfall periods The road provides the local community access to a number of amenities, therefore the “No-Go” alternative was used as a baseline for impact studies. The proposed construction has positive impacts with minimal environmental impacts.

SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?	YES x	NO

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

N/A

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

- The EMPr must be strictly adhered to and implemented during the construction and operational phases.
- An ECO should be appointed by the applicant to undertake Environmental Audits and submit reports to the Competent Authority when requested.
- All mitigation measures and factors outlined in the BAR must be considered.
- Should cultural artefacts or heritage sites occur in close proximity to the site, construction must cease immediately and the applicant must appoint a heritage specialist to submit a report to AMAFA.
- All impacts identified during the planning and design, construction and operation can be adequately mitigated Impacts identified and addressed through mitigation included: vegetation, waste management, traffic and emissions.
- The proposed development site will have an impact of **low; short - term significance** on the receiving environment (albeit extremely limited) if the majority of indigenous species are retained within the development.
- It is imperative that runoff from the proposed development is adequately managed and the sewerage and waste water do not result in deterioration of water quality for the adjacent river.

- The development is designed at the planning stage to take cognizance of the river and to take environmentally sound measures which ensure well rounded sustainability.
- In addition, the development of sound storm water management structures should eliminate any run-off into the River reducing the risk of flood events.
- Construction of the access road would contribute to the community in the following ways:
  (a) Vehicles would not have to endure rugged terrain.
  (b) Communities will have easier access to public and governmental transportation.
  (c) Travelling route distances would be decreased.
  (d) Will increase the safety of the people within the community as there will be no need to walk through dense vegetation to get to their destination.
  (e) Response and delivery time would be increased for public and emergency services.
  (f) Easier travelling routes for basic needs, schools and medical centers.
  (g) The culverts will link both communities and enhance activity between the communities.
- Based on the status quo above and given the indigent nature of the communities affected it is the EAP‘s recommendation that route one be authorized by the Competent Authority.
- Furthermore, no concerns were raised by I&AP‘s (public and stakeholders) for the preferred layout and development, in contrary there was general consensus in support for the development.
- The development is in keeping with the land use of the surrounding area and it is therefore the EAP‘s recommendation that the preferred option be approved for the proposed development.

Is an EMPr attached?	YES	NO
	X	

_____ _____

SHELDON SINGH **DATE**

APPENDIX A.1

LOCALITY MAP

APPENDIX A.2
AERIAL PHOTO

APPENDIX A.3
TOPOGRAPHICAL MAP

APPENDIX B

SITE PHOTOS

APPENDIX C

C.1 - PLAN OF PIPE CULVERTS

C.2 - PLAN OF THE ROAD

C.1 - PLAN OF PIPE CULVERTS

C.2 – PLAN OF ROAD

APPENDIX D

PUBLIC PARTICIPATION

- **D.1 – SUMMARY OF COMMENTS/RESPONSES FROM I&APS**
- **D.2 – PROOF OF RECIEPTS**
- **D.3 – COPY OF NEWSPAPER AD**
- **D.4 – COPY OF SITE NOTICES**
- **D.5 - COMMENTS FROM AMAFA**
- **D.6 – COMMENTS FROM KZN WILDLIFE**
- **D.7 – COMMENTS FROM WATER & SANITATION**

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APPENDIX E

ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)