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 proposes to construct a causeway structure along local road L2525, in the UMzinyathi District (DC 24). The new structure will be built in one of the Greytown villages. There is an urgent need to ensure safe and reliable means of crossing the river for both vehicles and pedestrians, which will promote economic growth in the area. The watercourse becomes inundated during periods of high rainfall leaving school children stranded and community members not being able to access basic services in the area.

Photo 1: showing proposed causeway development.

Photo 2: showing existing track and proposed causeway development.

Photo 3: showing existing road and proposed causeway construction.

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	Based on DOT standard details for a causeway the approx. width is 8.45 m and length is 7.4 m which varies according to the stream width. A standard causeway will be constructed with a length of 10 m and width of 8 m which will be supported on pad foundation founded on bedrock
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 crossing point for the causeway was chosen based on location. The proposed causeway is as close as possible to the current crossing footpath and the existing local road L2525. As the realignment of roads is extremely costly, no other crossing points have been investigated. This alternative has shown to be the best practical option when taking into consideration the minimal impact to the receiving environment. The causeway design has taken numerous engineering methodologies into consideration which has a minimal impact on the environment.	S28°50´33.76″	E 30°51´14.15″
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:

NOT A LINEAR ACTIVITY. THEREFORE THE SECTION BELOW IS NOT APPLICABLE TO THIS REPORT.

Alternative:	**Latitude (S):**	**Longitude (E):**
Alternative S1 (preferred)		
• 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 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) Based on DOT standard details for a causeway the approximate width is 8.45 m and length is 7.4 m which varies according to the stream width. A standard causeway will be constructed with a length of 10 m and width of 8 m which will be supported on pad foundation founded on bedrock.	S28°50´33.76˝	E 30°51´14.15˝
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
No alternate causeway designs have been	N/A	N/A

investigated as the proposed/preferred designs: 1. Meet the demand (the need for vehicular causeway structures to cross the respective rivers); 2. Is within the budget available from Department of Transport to establish vehicular causeways; 3. Have limited impact on the ecological environment and will not impede the flow of the rivers.		
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 cross section of the proposed causeway (Drawing number SD1402). Refer to the plan of the causeway in **Appendix C** - Facility Illustration for a more detailed design

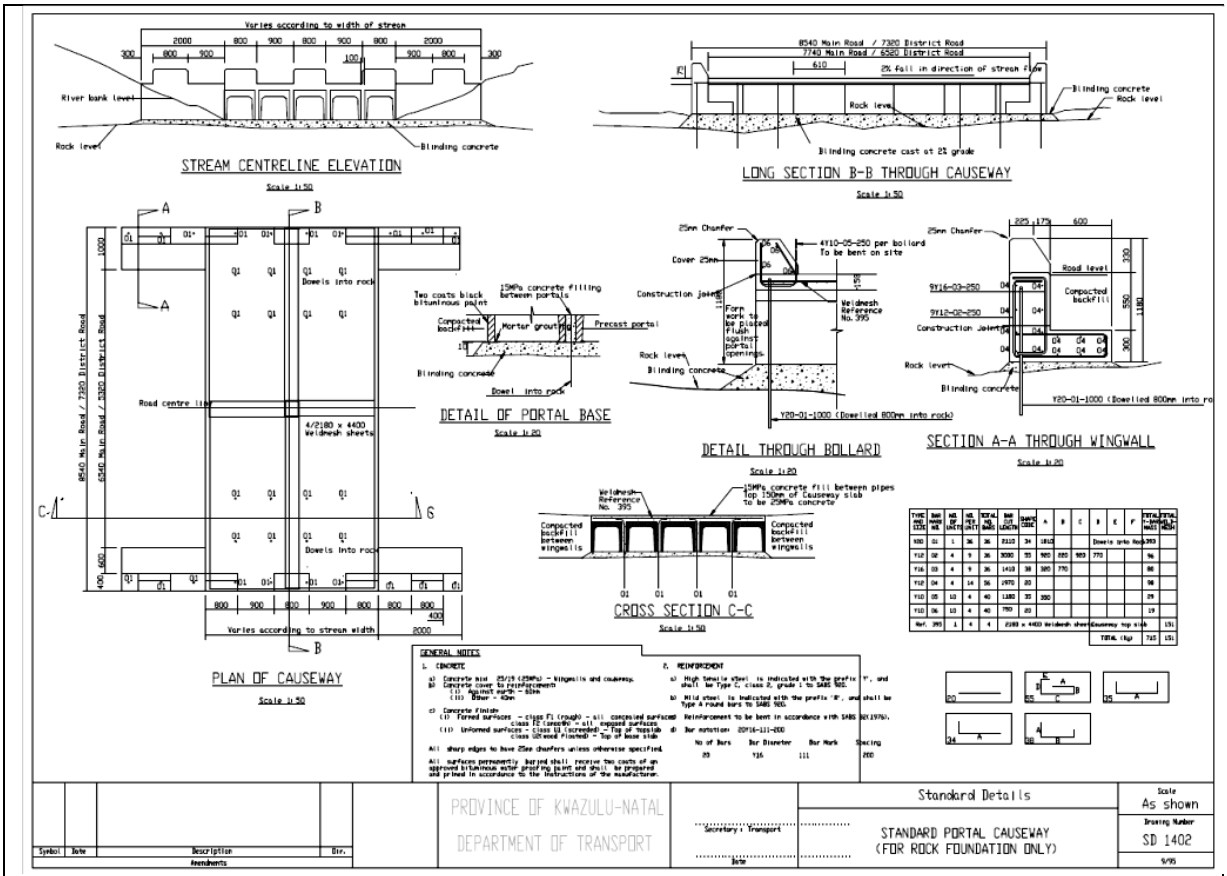

Figure 1: showing the cross section of the causeway (Drawing no. SD1402)

Alternative 2
N/A
Alternative 3
N/A

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

No alternate technologies have been investigated as the proposed/preferred design:

1. Meet the demand (the need for vehicular causeway structures to cross the respective river)
2. Is within the budget available from Department of Transport to establish a causeway structure.
3. Have limited impact on the ecological environment and will not impede the flow of the river.
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 causeway 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 causeway construction such as the improved connectivity and access for local residents. Residents that make use of the crossing will continue to experience disruptions, as access to the crossing is frequently overtopped by flood water, making access difficult at times of high flow. According to the tribal authority, members of the community are left stranded during periods of high rainfall as the existing crossing point has no formal/safe means of crossing. The site is transformed by existing footpaths and highly degraded, most natural vegetation have been removed.

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)	70m²
Alternative A2 (if any)	N/A m²
Alternative A3 (if any)	N/A m²

or, for linear activities:

Alternative:	**Length of the activity:**
Alternative A1 (preferred activity alternative)	N/A
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):

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

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

Does ready access to the site exist?	YES	NO
	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	NO	Please explain
	X		
The existing road is located off P16-2 along L2525 providing access to the local communities, and school children. The causeway will be constructed to ensure safe access to pedestrians and motorists, whilst minimizing soil erosion and siltation of the watercourse due to runoff. This activity is in line with the property's existing land use rights and does not constitute a change in land use.			

2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES X	NO	Please explain
According to the SDF (2013), there are main roads, District & Provincial roads in the area. The general qualities of these roads are good except the access routes which are found in the rural areas. The Greytown region is predominately rural and access to basic developmental areas is limited. Development in this area will create opportunities and unlock new development .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
According to the IDP (2014-15) rural roads require more attention, as they are unsurfaced and prone to erosion. The municipality currently does not have storm water control measures. It was highlighted in the IDP (2014-15), that focus needs to be on storm water management as well as the monitoring of settlement establishment on areas which are adjacent to rivers & streams (Umvoti IDP,2014/2015, p117). Therefore the activity is in line with both the IDP and SDF of the local municipality.			

(d) Approved Structure Plan of the Municipality	YES X	NO	Please explain
The ward councillor has expressed the communities' concerns w.r.t the need for an access route that is 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. However project is not funded by the local municipality but rather by the KZN Department of Transport.			
(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	YES	NO X	Please explain
The EMF is currently still in the compilation stage.			
(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 SDF aligns itself with the new national priorities as it underlying principles are based on sustainable development planning strategies; access routes as investment lines; a service centre strategy; integration; meeting land use needs and identification of areas of economic development potentials; restructuring of the local municipality (Umvoti SDF, 2013).			

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 structure 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. It is therefore, a high societal priority for local community members.			
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 w.r.t 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 and been removed due to human activities. 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 causeway structure has been identified with all stakeholders. Therefore the development is the best practical environmental as well as engineering option.			
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 causeway will positively impact the local community by providing access to basic amenities, and minimizing the negative impact of flooding, and soil erosion. The proposed construction will outweigh the negative impacts in terms of increased socio-economic development for the local community.			
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 construction of the causeway will improve accessibility for community members; and minimize erosion and storm water run-off.			
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.			

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 development of the structure will also make travelling for basic amenities, education and work feasible for local community members. The existing road is prone to flooding particularly during periods of high rainfall, thus limiting the access to basic amenities. 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 structure can be considered as the first step towards upliftment or development of the local community. Once construction is complete the causeway will allow for public transport modes to cater for local communities efficiently.	
16. Any other need and desirability considerations related to the proposed activity?	Please explain
According to the IDP (2014-15) there is a critical need to improve local roads within the local municipality. The area is predominately rural and developmental initiatives are limited w.r.t 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 causeway 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 Plan 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 causeway 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 GN. 983 of Dec 2014 (included within NEMA 107 of 1998)	Department of Environmental Affairs	1998
Environmental Impact Assessment Regulations (Notice No. GN. 983 of 2014)	Guidelines with regards to the Environmental Impact Assessment Process to be undertaken	Department of Environmental Affairs	1998
Constitution of	The project falls within the	Department of	1998

Republic of South Africa (Act No 108 of 1996)	boundaries of South Africa	Environmental Affairs	
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?		$5m^3$

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 X	NO

A Water Use Licence Application (WULA) has been lodged with the Department of Water and Sanitation in terms of Section 21 (c) and (i) of the National Water Act of 1998. The application will run concurrently with the EIA process.

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	Kwazulu-Natal
District Municipality	UMzinyathi Municipality (DC 24)
Local Municipality	Umvoti Local Municipality
Ward Number(s)	Ward 6
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	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
		X				

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		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 12/05/15 the following features have been identified:

The Umvoti municipality is one of the local municipalities which fall under the UMzinyathi District Municipality. It is situated approximately 75km from Pietermaritzburg and 55km from Stanger, and includes the urban centers of Greytown and Kranskop The site for the proposed development is located in one of the villages in the Greytown area on local road L2525.

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 1:15-1:20, which indicates generally a flat terrain. A watercourse in the village is present and development of a causeway structure will take place in order for community members to utilize, ensuring safety and movement across. The distance across the watercourse is approximately <20m.

The geology for most of the Greytown region, including the site L2525 consists of the Ecca group which is 250 million years old, overlain with patches of the Drakensberg formation. The Ecca group mainly consists of Shale and Sandstone. The watercourse is underlain by Sedimentary rock, which can be classified as sandstone. This specific watercourse is reliant on rainfall and can be classified as seasonally perennial. The watercourse consists of fine grained, broken material which includes sand.

During the summer months, increased rainfall leads to difficulty in crossing the watercourse, therefore the construction of a causeway structure would be advantageous to the members of the community. There exist very few geotechnical hindrances to development where areas are underlain by sandstone. There are no steep slopes in the area, therefore there is no need for a slope stability assessment. The watercourse is underlain by sedimentary rock (Sandstone), with regards to engineering qualities sandstone is fairly stable and does not break on contact and is not brittle. There is no presence of shale near the watercourse.

Soils around this region exhibit a yellow/red colour, which is an indication of the presence of iron which is dominated by hematite and aluminum. The area has estimated clay content of between 30-50% near the watercourse, during high periods of rainfall the estimated clay content could rise. 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.

.

Rock Type	Description of rock	Engineering qualities
Sandstone	Sandstone (sometimes known as arenite) is a clastic sedimentary rock composed mainly of sand-sized minerals or rock grains. Most sandstone is composed of quartz and/or feldspar because these are the most common minerals in the Earth's crust. Like sand, sandstone may be any color, but the most common colors are tan, brown, yellow, red, grey, pink, white and black	Inherent material deterioration problems generally occur gradually over long periods of time, at predictable rates and require appropriate routine or preventive maintenance to control.

Photo 4: Showing massive sandstone outcrop present in the watercourse.

Photo 5: Showing Sandstone outcrop in watercourse.

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	

No heritage permit is required. However, should elements of significance be identified during the construction phase, all construction activities will stop immediately and an independent heritage specialist will be appointed to investigate. This is covered in more detail in the EMPr. A draft BAR document was sent to AMAFA for comments and uploaded onto the SAHRIS website. Awaiting comments.

	YES	NO
Will any building or structure older than 60 years be affected in any way?		
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	NO

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

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

Level of unemployment:

According to the SDF (2013), the Umvoti local municipality has experienced a steady decline in unemployment since 1996. In 1996 the unemployment level was recorded at 49.8% this has significantly dropped to 30.4% in 2011. The general prediction trend is translated to a reduction of an average of 1.6% year on year.

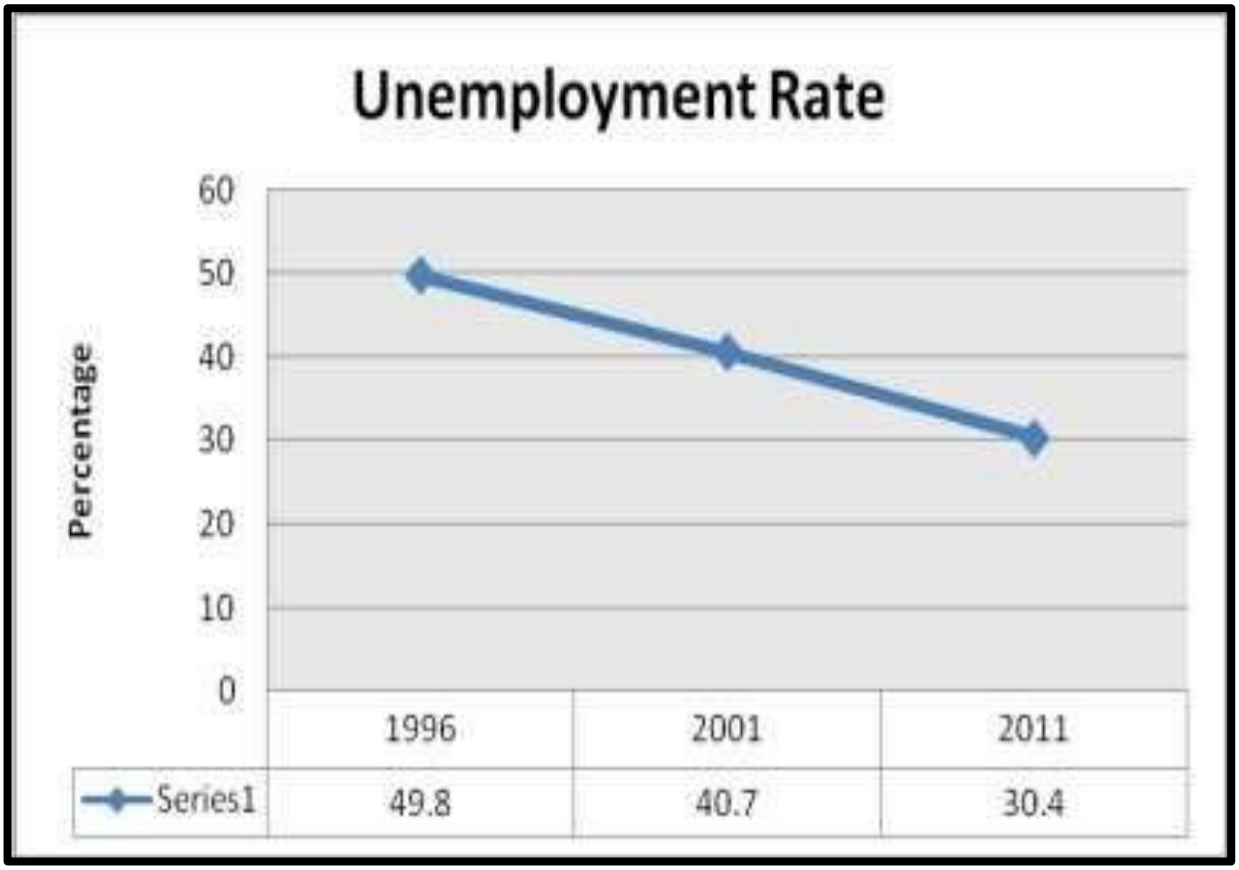

Figure 2: Representing Unemployment Rate (SDF, 2013, pg 67).

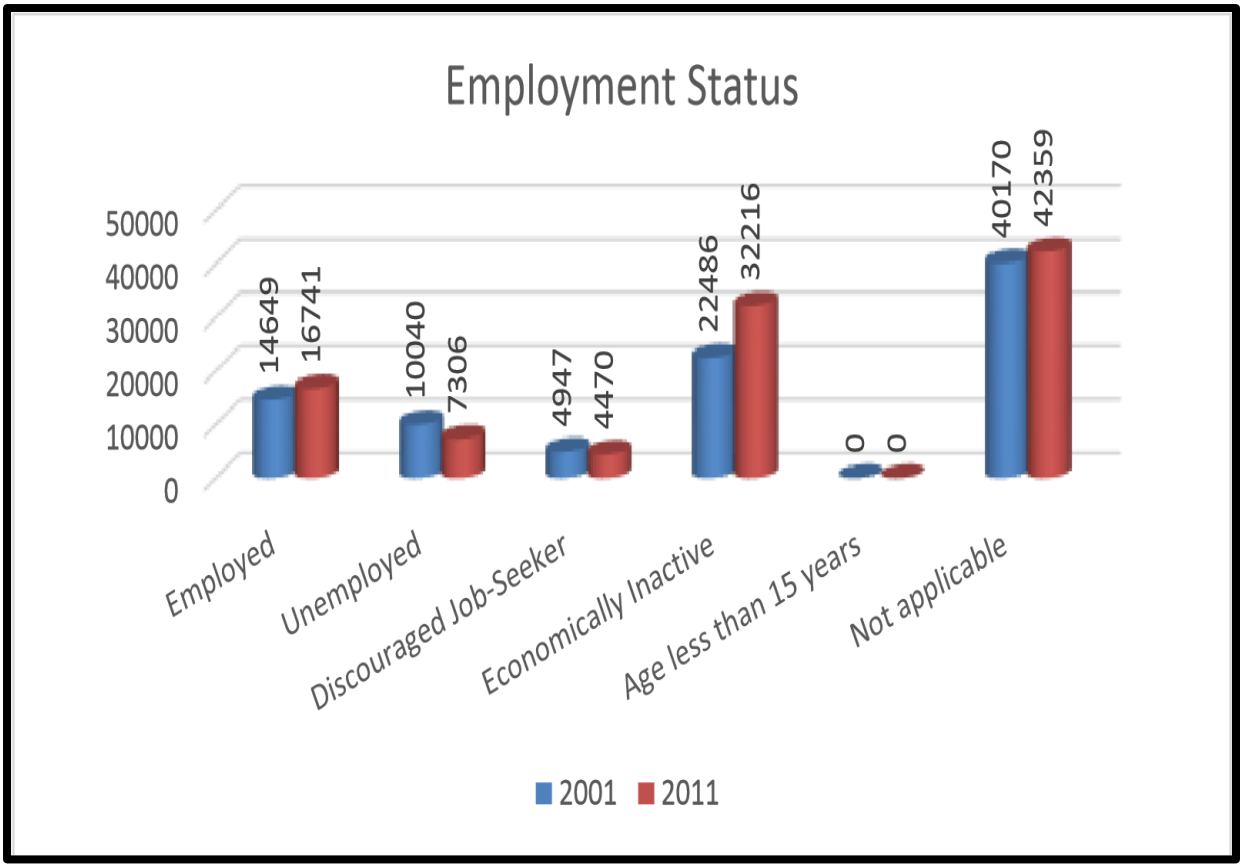

Figure 3: Representing Umvoti Employment Status (IDP, 2014-15, pg 92).

Economic profile of local municipality:

The Umvoti Local Municipality has well known sectors of economic development, which contribute or drive the economic growth of the area. General government services, wholesale and retail trade, manufacturing and agriculture as well as forestry have been major contributors in the economy. Greytown is the main provider of higher income jobs in senior management, professional, technical, clerks as well as skilled personnel. Commercial farms provide most of the skilled jobs and are provided through processing plants. It should be noted that Traditional Authority areas provide few to no jobs at all (IDP, 2014-2015).

Table 1: Representing the main economic contributors of the Umvoti municipality.

Sector	Share % of GVA
General Government Services	17.3
Wholesale and Retail trade, Catering and Accommodation	16.0
Manufacturing	15.8
Finance, Insurance, Real Estate and Business Services	14.1
Agriculture, Forestry and Fishing	12.6
Community, social and personal services	8.5
Transport, storage and communication	8.4
Construction	3.1
Mining and quarrying	2.6
Electricity, gas and water	2.2

Level of education:

Majority of the population appears to have some form of education over the past ten years (2001-2011), while those with no schooling has decreased. According to census 2011, 35% of the population have secondary education (12.8% Grade 12), 32.4% have attended primary schools and only 2.6% have some form of higher education (IDP, 2014-2015).

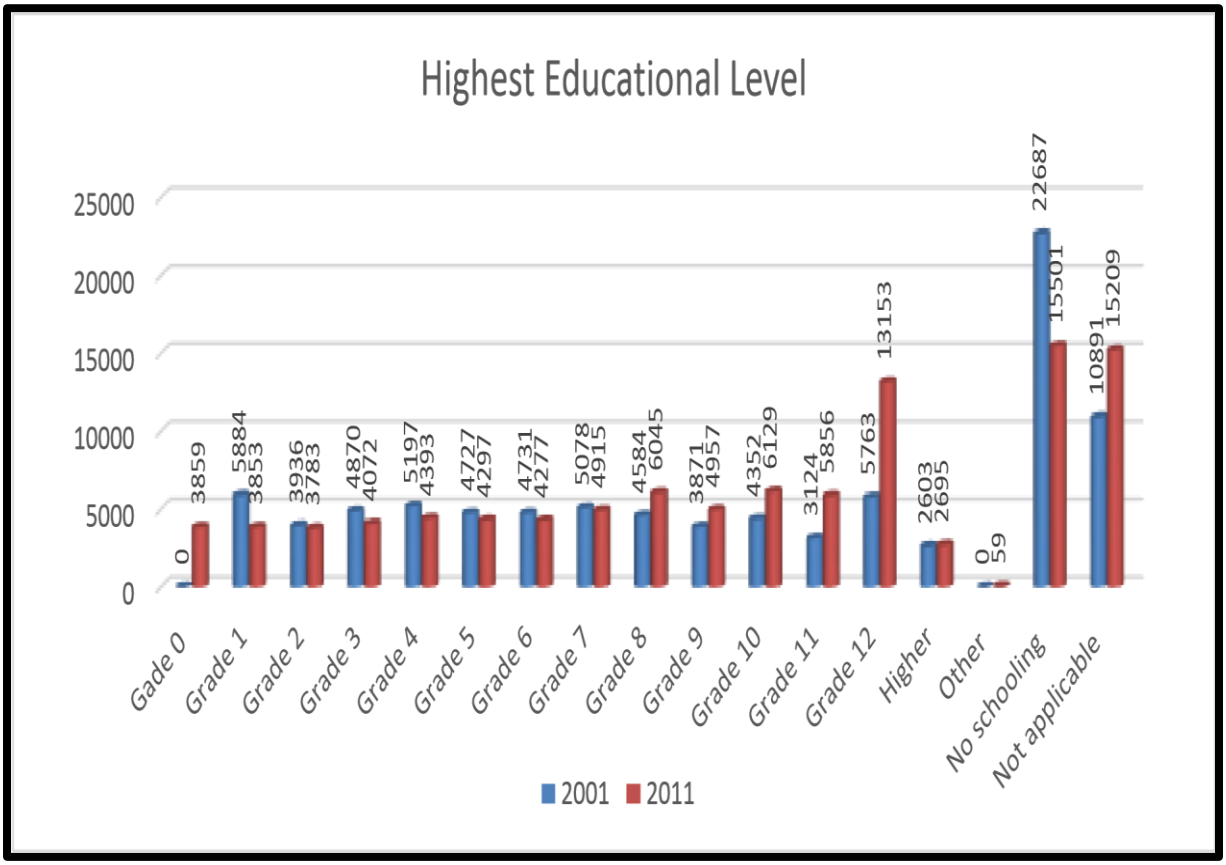

Figure 4: Representing educational level of the Umvoti municipality (IDP, 2014-15, pg 90).

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?	To be determined	

What is the expected value of the employment opportunities during the development and construction phase?	To be determined
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?	2
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.KZN Wildlife comments to be included in Final BAR. Awaiting comments.

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 (includes cultivation, dams, urban, plantation, roads, etc)	100 %	The site has been utilized as a crossing point over a number of years; therefore the site has become degraded by footpaths and most natural vegetation has been removed. Culvert structures have been previously constructed at the site.

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 Endangered Vulnerable Least Threatened	Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)			Estuary		Coastline	
		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 and has been removed due to human activity in the area over a number of years. The area has become completely transformed and offers no significant biodiversity or natural pristine ecosystems**. KZN Wildlife comments to be included in the Final BAR.**

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Ilanga Newspaper	
Date published	11/06/2015	
Site notice position	**Latitude**	**Longitude**
	S28°50´33.76˝	E 30°51´14.15˝

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.

Two Newspaper articles (English and Zulu) were published in the Ilanga Newspaper (See **Appendix D**) on the 11/06/2015. The tribal authorities/ward councillors were made aware of the proposed development. A hand delivered proposal letter was signed by the tribal authority informing them about the proposed project (date of hand delivery to be confirmed). All organs of state that were identified during the process were informed and requested to comment on the BAR. (See **Appendix D** for confirmation of all correspondence to stakeholders and "comments & responses").

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)**

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 is in favour of the proposed upgrade of the existing structure.	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	Nomusa Mahaye	034 2998600	nomusa.mahaye@kzntransport.go.za	Private Bag X2002 Dundee 3000
Amafa	Ms Bernadet	033 3946543	bernadetp@amafapmb.co.za	P.O.Box 2685 PMB 3201
KZN Wildlife	Mr D Wieners	033 8451999	Dominic.Wieners@kznwildlife.com	P.O.Box 13053 3202
Department of Water & Sanitation	Mr S. Naidoo	031 3362798	naidooso@dwa.gov.za Water Use License	P.O. Box 1018 Durban 4000
Department of Water & Sanitation	Mr S. Govender	031 336 2759	GovenderS2@dwa.gov.za	88 Field Street Durban 4001

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. The proposed causeway construction will also be constructed along an existing crossing which has already been disturbed by human activities. It is not feasible to construct the causeway at a "new crossing point" since this will have adverse negative impacts to the environment.

1.1 Selection of Site – Causeway

The selection of causeway crossing point will have the greatest environmental impact. The proposed causeway will be constructed along an existing crossing point with footpaths that have been developed over the years and in the same position as the existing culverts. Therefore the existing crossing point has been selected as the preferred alternative as not to cause further disturbance to the environment. Engineering Designs prepared by consultants has taken the most efficient techniques with minimal impact to the environment into consideration.

The following Table presents the assessment criteria used to evaluate the impacts resulting from the proposed development.

Impact Assessment Methodology

The impacts that may result from the planning and design phase, construction phase, operation phase and decommissioning 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:

Spatial Scale

Site **(S)** Immediate area of impact

Local **(L)** Area within 20km of the development

Regional **(R)** Entire Municipality

Duration

Short Term **(ST)** Less than the duration of the activity

Medium Term **(MT)** Impact persists until activity ceases

Long Term **(LT)** Impact persists well beyond the cessation of the activity

Permanent **(P)** Impact is permanent

Probability

Low **(L)** Unlikely

Medium **(M)** Possible

High **(H)** Likely

Intensity

Low **(L)** Ecological functions may continue undisturbed. No rare or endangered species affected. No objection from I&APs.

Medium **(M)** Ecological functioning temporary affected. No rare or endangered species affected. Some concern from I&APs.

High **(H)** Ecological functioning permanently altered. Rare or endangered species impacted. Major concern from I&APs.

Significance

Impacts can be Low, Medium or High and can be positive (+ve) or negative (–ve).

Impacts/Significance associated with the Construction phase

Impact	Impact type Positive (+ve) Or Negative (-ve)	Activity	Preferred alternative					
			SPATIAL SCALE	DURATION	PROBABILITY	INTENSITY	SIGNIFICANCE	POST MITIGATED
DIRECT IMPACTS								
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 a 2 month period. No surrounding dwellings will directly be affected. These impacts have been addressed in detail within the EMPr.	**S**	**MT**	**M**	**L**	**L**	

Impact	Impact type Positive (+ve) Or Negative (-ve)	Activity	Preferred alternative				
			SPATIAL SCALE	DURATION	PROBABILITY	INTENSITY	SIGNIFICANCE POST MITIGATED
Spillages	**(-)**	Construction vehicles pose major threats w.r.t 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.	**S**	**MT**	**M**	**M**	**L**
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.	**L**	**MT**	**M**	**M**	**L**

Impact	Impact type Positive (+ve) Or Negative (-ve)	Activity	Preferred alternative				
			SPATIAL SCALE	DURATION	PROBABILITY	INTENSITY	POST MITIGATED SIGNIFICANCE
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 route as a result of poor drainage. 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. Extensive gully erosion is evident around the entire area.	**L**	**MT**	**M**	**M**	**L**

Impact	Impact type Positive (+ve) Or Negative (-ve)	Activity	Preferred alternative				
			SPATIAL SCALE	DURATION	PROBABILITY	INTENSITY	POST MITIGATED SIGNIFICANCE
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.	**S**	**MT**	**M**	**L**	**L**
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. No water will be extracted from any watercourse in the construction phase.	**L**	**MT**	**M**	**L**	**L**

Impact	Impact type Positive (+ve) Or Negative (-ve)	Activity	Preferred alternative				
			SPATIAL SCALE	DURATION	PROBABILITY	INTENSITY	POST MITIGATED SIGNIFICANCE
Impact on surface and ground water	**(-)**	Pollution of soil/ groundwater (fuel, oil, cement, other chemicals etc.)	**L**	**MT**	**M**	**M**	**L**
Impact of Storm water	**(-)**	Storm water could lead to erosion without the proper mitigation measures in place, and side drains not properly constructed.	**L**	**MT**	**M**	**M**	**L**
Sanitation	**(-)**	Inadequate sanitation could lead to pollution of the water table.	**S**	**MT**	**M**	**M**	**L**
Heritage impacts	**(+)**	No negative impact. As artifacts of historical or cultural value was not found on the route.	**S**	**ST**	**L**	**L**	**L**
Noise disturbance	**(-)**	Construction machinery and personnel could disturb the peace in the surrounding area.	**S**	**MT**	**M**	**L**	**L**
Waste Disposal	**(-)**	Waste is generated through construction activities and therefore the possibility of the area being polluted is increased.	**L**	**MT**	**M**	**M**	**L**

Impact	Impact type Positive (+ve) Or Negative (-ve)	Activity	Preferred alternative				
			SPATIAL SCALE	DURATION	PROBABILITY	INTENSITY	POST MITIGATED SIGNIFICANCE
Socio-Economic Impact	**(+)**	Construction creates temporary employment for community members.	**L**	**P**	**H**	**N/A**	**H**
No-go option	**(-)**	Safety - During most rainy seasons, the road is flooded. The local community's safety will therefore be compromised.	**-**	**-**	**-**	**-**	**-**

Impact	Impact type Positive (+ve) Or Negative (-ve)	Activity	Preferred alternative				
			SPATIAL SCALE	DURATION	PROBABILITY	INTENSITY	POST MITIGATED SIGNIFICANCE
INDIRECT IMPACTS							
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.	**S**	**ST**	**M**	**M**	**L**
Waste Disposal	**(-)**	Waste such as plastic and paper will impact surrounding animals if ingested**.**	**L**	**MT**	**H**	**H**	**L**
Socio-Economic Impact	**(+)**	Improved living standards.	**L**	**P**	**H**	**L**	**H**
No-go option	**(-)**	Safety - During most rainy seasons, the road is flooded. The local community's safety will therefore be compromised.	**-**	**-**	**-**	**-**	**-**

Impact	Impact type Positive (+ve) Or Negative (-ve)	Activity	Preferred alternative				
			SPATIAL SCALE	DURATION	PROBABILITY	INTENSITY	POST MITIGATED SIGNIFICANCE
CUMULATIVE IMPACTS							
Waste Generation	**(-)**	Extra waste generated during the construction phase could result in added pressure placed on the local landfill site.	**L**	**M T**	**L**	**L**	**L**
No-go option	**(-)**	Safety - During most rainy seasons, the road is flooded. The local community's safety will therefore be compromised.	**-**	**-**	**-**	**-**	**-**

Impacts/Significance associated with the Operational Phase

Impact	Impact type Positive (+ve) Or Negative (-ve)	Activity	Preferred alternative				
			SPATIAL SCALE	DURATION	PROBABILITY	INTENSITY	SIGNIFICANCE POST MITIGATED
DIRECT IMPACTS							
Increased traffic in the area	**(-)**	The proposed road is an access route off a local road, therefore increased traffic.	**L**	**LT**	**M**	**L**	**L**
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.	**L**	**MT**	**L**	**L**	**L**
Direct alteration of faunal habitat	**(-)**	The area is highly transformed by the existing track and river crossing.	**L**	**LT**	**L**	**L**	**L**
Increased socio-economic benefits	**(+)**	The positive impact is that of increased socio-economic development to the local community.	**L**	**LT**	**H**	**L**	**H**

Impact	Impact type Positive (+ve) Or Negative (-ve)	Activity	Preferred alternative				
			SPATIAL SCALE	DURATION	PROBABILITY	INTENSITY	POST MITIGATED SIGNIFICANCE
INDIRECT IMPACTS							
Safety Issues for the community	**(+)**	The proposed causeway is merely an upgrade of the existing portals; therefore safety issues do not pose a major threat.	**S**	**MT**	**L**	**L**	**L**
Increased noise	**(-)**	The road services the local community therefore noise levels should not be affected greatly by the upgrade.	**S**	**MT**	**M**	**L**	**L**

Alternative 2:

No alternative site has been identified. Alternative alignments would require additional disturbance to the environment with very little potential of improvement in terms of environmental performance. The proposed causeway will be constructed on the existing track which has already been upgraded, furthermore DOT has assessed other options and none were cost effective.

Impacts/Significance associated with the Closure Phase

No impacts have been assessed for this section as the closure phase is not envisaged for this development; however the EMPr outlines specifications on rehabilitation measures that must be implemented after the construction phase.

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 causeway construction have been identified and key impacts and their mitigation measures are provided in this report. 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.

The following factors were taken into consideration (Causeway):

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 15m away from the stream and drainage line except where needed for the construction of the causeway.

As per the EMPr, no materials may be stored within 30m 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 the piers 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 causeway should be constructed.
This construction would result in minor environmental and social impact and general disturbance for the construction of the causeway at this point. The causeway will be designed withstand at least 1:10 year flood events therefore providing safe access to the local community. The construction of this causeway 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 with culverts.

Alternative B

N/A

Alternative C

N/A

No-go alternative (compulsory)

Should the proposed construction of the causeway 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 crossing point provides the local community access to a number of services. 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).
- 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.
- Based on the status quo above and given the indigent nature of the communities affected it is the EAP's recommendation that the causeway structure 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

PLAN OF THE CAUSEWAY

- **C.1- DESIGN REPORT**
- **C.2- FLOOD ASSESSMENT REPORT**

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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 – COMMENTS FROM AMAFA**
- **D.5 – COMMENTS FROM KZN WILDLIFE**
- **D.6 – COMMENTS FROM WATER & SANITATION**

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ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)