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| --- | --- |
|  | (For official use only) |
| EIA File Reference Number: | DC/ |
| NEAS Reference Number: | KZN/EIA/ |
| Waste Management Licence Number:  (if applicable) |  |
| Date Received: |  |

**Basic Assessment Report**

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

**This template may be used for the following applications**:

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

**Kindly note that:**

1. This **basic assessment report** meets the requirements of the EIA Regulations, 2010 and is meant to streamline applications. This report is the format prescribed by the KZN Department of Agriculture, Environmental Affairs & Rural Development. Please make sure that this is the latest version.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with text.
3. Where required, place a cross in the box you select.
4. An incomplete report will be returned to the applicant for revision.
5. The use of “not applicable” in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it will result in the rejection of the application as provided for in the regulations.
6. No faxed or e-mailed reports will be accepted.
7. The report must be compiled by an independent environmental assessment practitioner (“EAP”).
8. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
9. The KZN Department of Agriculture, Environmental Affairs & Rural Development may require that for specified types of activities in defined situations only parts of this report need to be completed.
10. The EAP must submit this basic assessment report for comment to all relevant State departments that administer a law relating to a matter affecting the environment. This provision is in accordance with Section 24 O (2) of the National Environmental Management Act 1998 (Act 107 of 1998) and such comments must be submitted within 40 days of such a request.
11. **Please note that this report must be handed in or posted to the District Office of the KZN Department of Agriculture, Environmental Affairs & Rural Development to which the application has been allocated (please refer to the details provided in the letter of acknowledgement for this application).**

DEPARTMENTAL REFERENCE NUMBER(S)

|  |  |
| --- | --- |
| File reference number (EIA): |  |
| File reference number (Waste Management Licence): |  |

Section A: DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER and specialists

1. **name and contact details of environmental assessment practitioner (EAP)**

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

|  |  |  |  |
| --- | --- | --- | --- |
| Business name of EAP: | GBS Environmental Consulting | | |
| Physical address: | 95 McKenzie Street, Dundee | | |
| Postal address: | P.O. Box 743, Dundee | | |
| Postal code: | 3000 | **Cell:** | 082 920 0213 |
| Telephone: | 034 212 3660 | **Fax:** | 086 575 7605 |
| E-mail: | gbsenviro@lantic.net |  |  |

1. **NAMEs and expertise OF REpresentatives of the EAP**

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

|  |  |  |  |
| --- | --- | --- | --- |
| Name of representative of the EAP | Education qualifications | Professional affiliations | Experience at environmental assessments (yrs) |
| Lynne Ruddle | Higher Diploma: Nature Conservation & Management |  | 13 |
| Peter Ruddle | Diploma: Nature Conservation | IAIA | 7 |
|  |  |  |  |

1. **NAMEs and expertise OF specialists**

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name of specialist | Education qualifications | Field of expertise | Section/ s contributed to in this basic assessment report | Title of specialist report/ s as attached in Appendix D |
| Mr. Stephan Gaigher | BA Hons (Archaeology) Univ. of Pretoria | Heritage management (Stone Age, Iron Age, Historic Era, Built Environment, Rock Art and Grave Relocation) | HIA Report | Phase 1 Heritage Impact Assessment Report  Construction of the Nhlezi Bridge and link roads Project, near Tugela Ferry, Kwa Zulu-Natal Province |

Section B: Activity information

1. **PROJECT TITLE**

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

|  |
| --- |
| Construction of the Nhlezi Bridge and link roads |

1. **PROJECT DESCRIPTION**

Provide a detailed description of the project:

|  |
| --- |
| The construction of a road bridge over the Mooi River and access link roads near KwaDunge High School in the Keates Drift area in northern KwaZulu-Natal.  The proposed development that forms the subject of this application is the construction of a road bridge and access link roads that will eventually connect the communities living either side of the Mooi River and allow access to the D1268 (Western access road of 1.3km) and L1181 (Eastern access road of 400m) roads to Keates Drift. The existing river crossing is an unimproved river crossing in poor condition and very dangerous when in flood, hindering access to community dwellings in the area. The total length of the road to be constructed to a Type 7a Local Road Standard is 1.7 kilometres.  The road bridge and access link roads will be constructed with funding from the KZN Department of Transport. |

1. **Activity DESCRIPTION**

Describe each listed activity in Listing Notice 1 (GNR 544, 18 June2010), Listing Notice 3 (GNR 546, 18June 2010) or Category A of GN 718, 3 July 2009 (Waste Management Activities) which is being applied for as per the project description:

|  |
| --- |
| The proposal centres on the construction of a road bridge over a river and access link roads and as such falls within the definition of *Infrastructure & Road,* listed activities in Regulation 544 of the National Environmental Management Act.  **Activities:**  #11 *The construction of:*  *(iii) bridges;*  *(xi) infrastructure or structures covering 50 square metres or more*  *where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.*  #18 *The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from*  *(i) a watercourse*  *but excluding where such infilling, depositing, dredging, excavation, removal or moving*  *(i) is for maintenance purposes undertaken in accordance with a management plan agreed to by the relevant environmental authority.*  *#22 (ii)*  *The construction of a road, outside urban areas, where no reserve exists, where the road is wider than 8 metres.* |

1. **FEASIBLE AND REASONABLE ALTERNATIVES**

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

(a) the property on which or location where it is proposed to undertake the activity;

(b) the type of activity to be undertaken;

(c) the design or layout of the activity;

(d) the technology to be used in the activity;

(e) the operational aspects of the activity; and

(f) the option of not implementing the activity.

Describe alternatives that are considered in this report. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

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

1. **Activity POSITION**

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and seconds. List alternative sites were applicable.

**BRIDGE**

**In the case of linear activities:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Alternative:** | **Latitude (S):** | | | **Longitude (E):** | | |
| Alternative S1 (preferred or only route alternative) |  |  |  |  |  |  |
| * Starting point of the activity | 28o | 48‘ | 19‘ | 30o | 33‘ | 50 “ |
| * Middle point of the activity | o | ‘ | “ | o | ‘ | “ |
| * End point of the activity | 28o | 48‘ | 18.6‘ | 30o | 33‘ | 51.74“ |

**WESTERN ACCESS ROAD**

**In the case of linear activities:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Alternative:** | **Latitude (S):** | | | **Longitude (E):** | | |
| Alternative S1 (preferred or only route alternative) |  |  |  |  |  |  |
| * Starting point of the activity | 28o | 48‘ | 19‘ | 30o | 33‘ | 50“ |
| * Middle point of the activity | 28o | 48‘ | 12.97“ | 30o | 33‘ | 47.11“ |
| * End point of the activity | 28o | 48‘ | 10.26‘ | 30o | 33‘ | 43.2“ |

**EASTERN ACCESS ROAD**

**In the case of linear activities:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Alternative:** | **Latitude (S):** | | | **Longitude (E):** | | |
| Alternative S1 (preferred or only route alternative) |  |  |  |  |  |  |
| * Starting point of the activity | 28o | 48‘ | 18.6‘ | 30o | 33‘ | 51.74“ |
| * Middle point of the activity | 28o | 48‘ | 23.92“ | 30o | 34‘ | 13.15“ |
| * End point of the activity | 28o | 48‘ | 24.07‘ | 30o | 34‘ | 33.13“ |

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

1. **Physical size of the activity**

**BRIDGE**

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

|  |  |  |
| --- | --- | --- |
| **Alternative:** |  | **Size of the activity:** |
| Alternative A1[[1]](#footnote-1) (preferred activity alternative) |  | 570m2 |
| Alternative A2 (if any) |  | m2 |
| Alternative A3 (if any) |  | m2 |

or, for linear activities:

|  |  |  |
| --- | --- | --- |
| **Alternative:** |  | **Length of the activity:** |
| Alternative A1 (preferred activity alternative) |  | 95m |
| Alternative A2 (if any) |  | m |
| Alternative A3 (if any) |  | m |

**WESTERN ACCESS ROAD**

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

|  |  |  |
| --- | --- | --- |
| **Alternative:** |  | **Size of the activity:** |
| Alternative A1[[2]](#footnote-2) (preferred activity alternative) |  | 26000m2 |
| Alternative A2 (if any) |  | m2 |
| Alternative A3 (if any) |  | m2 |

or, for linear activities:

|  |  |  |
| --- | --- | --- |
| **Alternative:** |  | **Length of the activity:** |
| Alternative A1 (preferred activity alternative) |  | 1300m |
| Alternative A2 (if any) |  | m |
| Alternative A3 (if any) |  | m |

**EASTERN ACCESS ROAD**

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

|  |  |  |
| --- | --- | --- |
| **Alternative:** |  | **Size of the activity:** |
| Alternative A1[[3]](#footnote-3) (preferred activity alternative) |  | 8000m2 |
| Alternative A2 (if any) |  | m2 |
| Alternative A3 (if any) |  | m2 |

or, for linear activities:

|  |  |  |
| --- | --- | --- |
| **Alternative:** |  | **Length of the activity:** |
| Alternative A1 (preferred activity alternative) |  | 400m |
| Alternative A2 (if any) |  | m |
| Alternative A3 (if any) |  | m |

1. **Site Access**

|  |  |  |  |
| --- | --- | --- | --- |
| Does ready access to the site exist? | YES  X | NO | |
| If NO, what is the distance over which a new access road will be built | m | | |
| Describe the type of access road planned: |  | |  |
|  | | | |

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

1. SITE OR ROUTE PLAN

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

The site or route plans must indicate the following:

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

1. **Site PHOTOGRAPHS**

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report**.** It must be supplemented with additional photographs of relevant features on the site, if applicable.

1. **FACILITY ILLUSTRATION**

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

1. **ACTIVITY MOTIVATION**
   1. **Socio-economic value of the activity**

|  |  |  |
| --- | --- | --- |
| What is the expected capital value of the activity on completion? | R16,923,300.00 | |
| What is the expected yearly income that will be generated by or as a result of the activity? | Nil | |
| 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 phase of the activity? | 8 | |
| What is the expected value of the employment opportunities during the development phase? | R750,000.00 | |
| 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? | Approx 1 | |
| What is the expected current value of the employment opportunities during the first 10 years? | R330,000.00 | |
| What percentage of this will accrue to previously disadvantaged individuals? | 100% | |

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

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

|  |
| --- |
| The request to construct the road bridge originated from within the community and their support structures, the Tribal Authority. Local roads are a vital link between communities and the formal road network function primarily as collector roads to the formal road network, servicing community facilities along the way.  Local roads also provide access from District or Main Roads to infrastructure such as schools, clinics, community facilities and settlements that have previously been isolated from each other and from rural centres.  The present access crossing point is of poor quality and becomes impassable during flash floods when high volumes of stormwater collect from the river catchment and flow across the proposed crossing site which will connect to the existing local road network. This is particularly prevalent during the short, heavy thunderstorms common in the area during the rainy season.  In addition, vehicles using the existing crossing whilst wet cause damage to the road surface at the crossing point which in turn inflicts significant damage to vehicles operating on this road. This poor access is one of the limiting factors contributing to the poor service delivery. This also affects other service providers, including police, health and social services to the area.  Building bridges over rivers can significantly shorten travel distance; improve road safety, saving time and energy for all road users.  The construction of the road bridge as part of the route upgrade will be one of the first significant social service to be built in the area, which will provide good access and the introduction of further services and development opportunities in the area. This includes agricultural development, housing and associated infrastructure. |

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

In general, the road bridge and access link roads will benefit the community significantly in teams of access to the community facilities.

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

There are numerous homesteads in the area, whose residents have very limited access to state services and service providers (police, ambulance, clinics, etc.) that struggle to maintain service delivery in the area as a direct result of poor road conditions and access.

The transportation of goods to these outlying rural areas will greatly improve to the general wellbeing, upliftment and living standards of the local community. Items such as gas, fuel and groceries for household use will be more readily available, due to improved access to the region. This could also encourage informal businesses and retail outlets (Spaza shops), as well as other private services to develop in the region.

Improving the road infrastructure by constructing the road bridge and access link roads will facilitate the provision of services such as, Eskom electrical reticulation, health services, social services including pension payments, as well as community policing.

1. **Applicable legislation, policies and/or guidelines**

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

|  |  |  |
| --- | --- | --- |
| Title of legislation, policy or guideline: | Administering authority: | Date: |
| 1 Constitution of the Republic of South Africa Act Act No. 108 of 1996  Chapter 2: Bill of Rights  *Inter alia*, Ch 24, Environmental and Ch. 25, Property  2 Environment Conservation Act Act No. 73 of 1989  3 National Environment Management Act Act No. 107 of 1998  4 Conservation of Agricultural Resources Act Act No. 43 of 1983  S.5 (prohibition of spreading weeds)  Regulations as promulgated in GNR1048 GG10029 of 25 May 1984 and amended by  GN R2687 GG10029 of 6 December 1985  Regs 1 – 33,  Specially Regs. 15(1), 16 (1) and 16 (2), declared weeds, 15(2), 16(3), Invader Plants.  5 National Water Act Act No. 36 of 1998  6 Biodiversity Act Act No. 10 of 2004  7 Game Theft Act Act no. 105 of 1991  S2 Ownership of Game  S3 Game Theft  8 Occupational Health and safety Amendment Act Act No. 181 of 1993  9 Hazardous Substances Act Act No. 15 of 1973  **Selected Provincial Legislation**  1 KwaZulu Natal Heritage Act  Act No. 10 of 1997  2 KwaZulu Natal Nature Conservation Act  Act No. 9 of 1997 | Constitutional Court of South Africa  Dept. of Environmental Affairs  Dept. of Environmental Affairs  Dept. of Agriculture, Forestry & Fisheries  Dept. of Water Affairs  Dept. of Environmental Affairs  Dept. of Justice & Constitutional Development  Dept. of Labour  Dept. of Health  Amafa / Heritage KwaZulu Natali  KZN Wildlife | 18 December 1996  1 June 1989  27 November  1998  25 May 1984  26 August 1998  7 June 2004  27 June 1991  27 June 1993  26 March 1973  7 January 1998  3 December 1997 |

1. **Waste, effluent, emission and noise management** 
   1. **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? | 2.25m3 | |
| How will the construction solid waste be disposed of? (describe) |  |  |
| The Contractor will dispose of the solid waste | | |
| Where will the construction solid waste be disposed of? (provide details of landfill site) |  |  |
| The construction solid waste will be disposed of at the Msinga Local Municipality registered waste landfill site in Greytown. | | |
| Will the activity produce solid waste during its operational phase? | YES | NO  X |
| If yes, what estimated quantity will be produced per month? | m3 | |
| How will the solid waste be disposed of? (provide details of landfill site) |  | |
| The solid waste will be transported by the contactor to the local municipality landfill site in Greytown. | | |
| Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)? | | |
|  | | |
| If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine the further requirements of the application. | | |
| Can any part of the solid waste be classified as hazardous in terms of the relevant legislation? | YES | NO  X |
| **If yes, contact the KZN Department of Agriculture, Environmental Affairs & Rural Development to obtain clarity regarding the process requirements for your application**. | | |
| Is the activity that is being applied for a solid waste handling or treatment facility? | YES | NO  X |
| **If yes, contact the KZN Department of Agriculture, Environmental Affairs & Rural Development to obtain clarity regarding the process requirements for your application.** | | |

* 1. **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? | | | | m3 | |
| Will the activity produce any effluent that will be treated and/or disposed of on site? | | | | Yes | NO  X |
| **If yes, contact the KZN Department of Agriculture, Environmental Affairs & Rural Development to obtain clarity regarding the process requirements for your application.** | | | | | |
| Will the activity produce effluent that will be treated and/or disposed of at another facility? | | | | YES | NO  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: | | | | | |
|  | | | | | |

* 1. **Emissions into the atmosphere**

|  |  |  |
| --- | --- | --- |
| Will the activity release emissions into the atmosphere? | YES  X | NO |
| If yes, is it controlled by any legislation of any sphere of government? | YES | NO  X |
| **If yes, contact the KZN Department of Agriculture, Environmental Affairs & Rural Development to obtain clarity regarding the process requirements for your application.** |  |  |
| If no, describe the emissions in terms of type and concentration: |  |  |
| Dust and exhaust emissions, caused by moving vehicles are likely to occur during the construction phase. | | |

* 1. **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 |
| If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. |  |  |
| If no, describe the noise in terms of type and level: |  |  |
| General construction vehicle noise, as is common at any construction site. The noise levels are unlikely to exceed 75dB (Petrol lawnmower) at any area inhabited by the surrounding community. | | |

1. **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  X | 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: | | | | | | 2000 litres | |
| Does the activity require a water use permit from the Department of Water Affairs? | | | | | | YES | NO  X |
| If YES, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this report. | | | | | | | |

1. **ENERGY EFFICIENCY**

|  |
| --- |
| Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient: |
| The proposed development is a passive structure that does not use energy on completion of the construction work.  This upgraded river crossing and access roads will greatly reduce the fuel consumption of vehicles using the road that need to take a lengthily detour to bypass this river crossing when in flood thus decreasing vehicle maintenance and breakages, also improving their lifespan. This improves the sustainability of the road and the proposed road bridge development project. |
| Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any: |
| The average fuel consumption, of vehicles travelling along this route will be reduced by 30 – 50%, once the road bridge and access link roads has been constructed, compared with the vehicles having to use the alternate bypass route. |

Section C: SITE/ area/ PROPERTY description

**Important notes:**

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

|  |  |
| --- | --- |
| Section C Copy No. (e.g. A): | **A** |

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

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Flat | 1:50 – 1:20  X | 1:20 – 1:15  X | 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 |

1. **location in landscape**

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

Alternative S1 (preferred site):

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ridgeline | Plateau | Side slope of hill/mountain | Closed valley  X | Open valley | Plain | Undulating plain/low hills | Dune | Sea-front |

Alternative S2 (if any):

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ridgeline | Plateau | Side slope of hill/mountain | Closed valley | Open valley | Plain | Undulating plain/low hills | Dune | Sea- front |

Alternative S3 (if any):

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ridgeline | Plateau | Side slope of hill/mountain | Closed valley | Open valley | Plain | Undulating plain/low hills | Dune | Sea-front |

1. **GroundwateR, Soil and Geological stability of the site**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Has a specialist been consulted for the completion of this section? | | | | | | | | | | YES | | | NO  X |
| If YES, please complete the following: | | | | | | | | | | | | | |
| Name of the specialist: | | | | |  | | | | | | | | |
| Qualification(s) of the specialist: | | | | |  | | | | | | | | |
| Postal address: | | | | |  | | | | | | | | |
| Postal code: | | | | |  | | | | | | | | |
| Telephone: | | |  | | | Cell: | | |  | | | | |
| E-mail: | | |  | | | Fax: | | |  | | | | |
| Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites? | | | | | | | | | | YES | | | NO  X |
| If YES, specify and explain: |  | | | | | | | | | | | | |
| Are there any special or sensitive habitats or other natural features present on any of the alternative sites? | | | | | | | | | | YES | | | NO  X |
| If YES, specify and explain: |  | | | | | | | | | | | | |
| Are any further specialist studies recommended by the specialist? | | | | | | | | | | | YES | NO  X | |
| If YES, specify: | |  | | | | | | | | | | | |
| If YES, is such a report(s) attached in Appendix D? | | | | | | | | | | | YES | | NO  X |
|  | | | |  | | |  |  | | | | | |
| Signature of specialist: | | | |  | | | Date: |  | | | | | |

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Alternative S1: | |  | Alternative S2 (if any): | |  | Alternative S3 (if any): | |
| Shallow water table (less than 1.5m deep) | YES  X | NO |  | 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 |

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

1. **Groundcover**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Has a specialist been consulted for the completion of this section? | | | | | | | | | | YES | | | NO  X |
| If YES, please complete the following: | | | | | | | | | | | | | |
| Name of the specialist: | | | | |  | | | | | | | | |
| Qualification(s) of the specialist: | | | | |  | | | | | | | | |
| Postal address: | | | | |  | | | | | | | | |
| Postal code: | | | | |  | | | | | | | | |
| Telephone: | | |  | | | Cell: | | |  | | | | |
| E-mail: | | |  | | | Fax: | | |  | | | | |
| Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites? | | | | | | | | | | YES | | | NO  X |
| If YES, specify and explain: |  | | | | | | | | | | | | |
| Are there any special or sensitive habitats or other natural features present on any of the alternative sites? | | | | | | | | | | YES | | | NO  X |
| If YES, specify and explain: |  | | | | | | | | | | | | |
| Are any further specialist studies recommended by the specialist? | | | | | | | | | | | YES | NO  X | |
| If YES, specify: | |  | | | | | | | | | | | |
| If YES, is such a report(s) attached in Appendix D? | | | | | | | | | | | YES | | NO  X |
|  | | | |  | | |  |  | | | | | |
| Signature of specialist: | | | |  | | | Date: |  | | | | | |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Natural veld - good conditionE | Natural veld with scattered aliensE | Natural veld with heavy alien infestationE  X | Veld dominated by alien speciesE | Gardens  X |
| Sport field | Cultivated land  X | Paved surface | Building or other structure | Bare soil  X |

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

1. **Land use character of surrounding area**

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

|  |  |  |  |
| --- | --- | --- | --- |
| Land use character |  |  | Description |
| Natural area | YES  X | NO | Limited impact as access roads are currently informal tracks |
| Low density residential | YES | NO  X |  |
| Medium density residential | YES | NO  X |  |
| High density residential | YES | NO  X |  |
| Informal residential | YES  X | NO |  |
| Retail commercial & warehousing | YES | NO  X |  |
| Light industrial | YES | NO  X |  |
| Medium industrial | YES | NO  X |  |
| Heavy industrial | YES | NO  X |  |
| Power station | YES | NO  X |  |
| Office/consulting room | YES | NO  X |  |
| Military or police base/station/compound | YES | NO  X |  |
| Spoil heap or slimes dam | YES | NO  X |  |
| Quarry, sand or borrow pit | YES | NO  X |  |
| Dam or reservoir | YES | NO  X |  |
| Hospital/medical centre | YES | NO  X |  |
| School/ creche | YES  X | NO | Muziwenkosi PS, KwaNdunge HS, Mkhuphula PS, Nyoniyezwe HS |
| Tertiary education facility | YES | NO  X |  |
| Church | YES | NO  X |  |
| Old age home | YES | NO  X |  |
| Sewage treatment plant | YES | NO  X |  |
| Train station or shunting yard | YES | NO  X |  |
| Railway line | YES | NO  X |  |
| Major road (4 lanes or more) | YES | NO  X |  |
| Airport | YES | NO  X |  |
| Harbour | YES | NO  X |  |
| Sport facilities | YES | NO  X |  |
| Golf course | YES | NO  X |  |
| Polo fields | YES | NO  X |  |
| Filling station | YES | NO  X |  |
| Landfill or waste treatment site | YES | NO  X |  |
| Plantation | YES | NO  X |  |
| Agriculture | YES  X | NO | Community gardens |
| River, stream or wetland | YES  X | NO | Mooi River |
| Nature conservation area | YES | NO  X |  |
| Mountain, hill or ridge | YES  X | NO | Hill slope within 100m of road bridge |
| Museum | YES | NO  X |  |
| Historical building | YES | NO  X |  |
| Protected Area | YES | NO  X |  |
| Graveyard | YES | NO  X |  |
| Archaeological site | YES | NO  X |  |
| Other land uses (describe) | YES | NO  X |  |

1. Cultural/ Historical Features

|  |  |  |  |
| --- | --- | --- | --- |
| Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including archaeological or palaeontological sites, on or within 20m of the site? | | YES | NO  X |
| If YES, contact a specialist recommended by AMAFA to conduct a heritage impact assessment. The heritage impact assessment must be attached as an appendix to this report. | | | |
| Briefly explain the recommendations of the specialist: |  | | |
| Will any building or structure older than 60 years be affected in any way? | | YES | NO  X |
| Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)? | | YES | NO  X |
| If YES, please submit the necessary application to AMAFA and attach proof thereof to this report. | | | |

Section D: public participation

1. ADVERTISEMENT

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

(a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—

(i) the site where the activity to which the application relates is or is to be undertaken; and

(ii) any alternative site mentioned in the application;

(b) giving written notice to—

(i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;

(ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;

(iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;

(iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;

(v) the local and district municipality which has jurisdiction in the area;

(vi) any organ of state having jurisdiction in respect of any aspect of the activity (as identified in the application form for the environmental authorization of this project); and

(vii) any other party as required by the competent authority;

(c) placing an advertisement in—

(i) one local newspaper; or

(ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;

(d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and

(e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—

(i) illiteracy;

(ii) disability; or

(iii) any other disadvantage.

1. **Content of advertisements and notices**

A notice board, advertisement or notices must:

(a) indicate the details of the application which is subjected to public participation; and

(b) state—

(i) that an application for environmental authorization has been submitted to the KZN Department of Agriculture, Environmental Affairs & Rural Development in terms of the EIA Regulations, 2010;(ii)

(iii) a brief project description that includes the nature and location of the activity to which the application relates;

(iv) where further information on the application can be obtained; and

1. the manner in which and the person to whom representations in respect of the application may be made.
2. **Placement of advertisements and notices**

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

Advertisements and notices must make provision for all alternatives.

1. Determination of appropriate process

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

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

1. Comments and response report

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

1. PARTICIPATION BY DISTRICT, LOCAL AND TRADITIONAL AUTHORITIES

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

|  |  |  |
| --- | --- | --- |
| Has any comment been received from the district municipality? | YES | NO  X |
| If “YES”, briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application): | | |
|  | | |

|  |  |  |
| --- | --- | --- |
| Has any comment been received from the local municipality? | YES | NO  X |
| If “YES”, briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application): | | |
|  | | |

|  |  |  |
| --- | --- | --- |
| Has any comment been received from a traditional authority? | YES  X | NO |
| If “YES”, briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application): | | |
| The Traditional Authority requested that this bridge be constructed and have been notified as the landowner that the proposed upgrade of the road is to take place with funding from the relevant authority. | | |

1. **CONSULTATION WITH OTHER STAKEHOLDERS**

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

|  |  |  |
| --- | --- | --- |
| Has any comment been received from stakeholders? | YES | NO  X |
| If “YES”, briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application): | | |
| An Executive Summary and any comments that were received from the Stakeholders will be contained in Appendix E. The following Stakeholders were asked to responded to the BAR that was circulated to the departments for comment:  Amafa  Department of Water Affairs  Ezemvelo KZN Wildlife  Msinga Local Municipality | | |

Section E: Impact Assessment

The assessment of impacts must adhere to the requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. **Issues raised by interested and affected parties**

List the main issues raised by interested and affected parties.

|  |
| --- |
| No concerns were raised by the local community, other than the lack of formal access to the site and how urgently the road bridge and supporting road is required.  No I&AP registered in response to the newspaper advert and site notice. The EAP held informal discussions with people found near the site. Most people were aware of the proposed development and an explanation was given to them that this was an environmental impact assessment field visit and that the road bridge would only be built once this process was completed.  Note:The community requested this bridge through the Tribal Authority and is therefore fully supportive of the application made for this project. |

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

|  |
| --- |
| As there were no registered I&AP, there are no responses from the EAP contained in Executive Summary filed under Appendix E. |

1. **Impacts that may result fRom the planning and design, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE phaseS AS WELL AS PROPOSED MANAGEMENT OF identified IMPACTS AND PROPOSED mitigation measures**
   1. **Impacts that may result fRom the planning and design phase**
2. **Site alternatives**

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

|  |
| --- |
| **Alternative S1 (preferred alternative)** |
| ***Direct impacts:***   * There are no direct impacts associated with the planning and design phase. The selection of the site as opposed to an alternative site is favourable due to the impact a newly selected site would have on the steeper sections of the surrounding river bank and the close proximity to the existing access tracks. * The site chosen will have minimal impact on the environment and is the most direct route. * The short access link roads from the road bridge site to the existing gravel roads will assist in making the upgrade of the river crossing feasible, due to restricted budgets and the request from the local community to upgrade the crossing thereby affording access to the area.   ***Indirect impacts:***   * The all-weather access created by the construction of the proposed road bridge and access roads would result in a substantial improvement in living standards and life in general, with regards to access to the school and social services to the affected community.   ***Cumulative impacts:***   * No impacts are expected with the construction of the road bridge, the status quo along the road will remain, however having the road bridge over the river, would improve all weather access for the residents, improve government’s service delivery and improve the business potential of the area. |
| **Alternative S2 (if any)** |
| ***Direct impacts:***   * Any alternative site would incur a significantly greater environmental impact than S1, due to the steepness of the river bank and increased distance to the existing roads in the vicinity.   ***Indirect impacts:***   * The alternative route and bridge site would no longer serve the community that is intended to benefit from the upgraded road bridge and access roads.   ***Cumulative impacts:***   * None expected. |
| **No-go alternative (compulsory)** |
| ***Direct impacts:***   * No new impacts would result from the No Go Alternative during the Planning and Design Phase. * The local people would still have no all-weather road access.   ***Indirect impacts:***   * None expected.   ***Cumulative impacts:***   * None expected. |

Indicate mitigation measures to manage the potential impacts listed above:

|  |  |
| --- | --- |
| **Alternative S1** | **Alternative S2** |
| * The Contractor must sign that he has received and understands the EMPr. * The Contractor must ensure compliance with the conditions in the Authorisation (RoD). * The bridge site construction area must be demarcated. * A system of record keeping must be implemented. This would include records of compliance / non-compliance with conditions of the RoD, records of building materials (especially sand and crushed stone) and environmental incidents that must be kept and be made available to DAEA&RD on request. * Confirm suitable sites for the construction camp (batching equipment, etc.) and storage areas for the materials. * All the construction equipment must be stored at the storage area and all associated oil changes must take place in this area. No servicing of plant or vehicles to take place at this site. * An Environmental Control Officer (ECO) must be appointed. * Unskilled labourers should be employed from the local community. * Environmental awareness training for all staff, concerning the prevention of accidental spillage of hazardous chemicals, oil; pollution of water resources (both; surface and groundwater), air pollution and litter control. * The project manager shall ensure that the training and the capabilities of the Contractor’s staff are adequate to carry out the designated tasks. * Staff operating mechanical equipment and plant, shall be adequately trained and sensitised to any potential environmental impacts and hazards associated with their tasks. * A complaints and stakeholders feedback system must be set up to address any complaints from the neighbouring properties and other stakeholders who may be affected by the proposed construction activities. * The Contractor will need to plan for the supply of water for the bridge construction and safe drinking water for the staff at the construction camp. * Photographic records of the road bridge and access link roads construction must be regularly updated. | |

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

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

|  |
| --- |
| **Alternative A1 (preferred alternative)** |
| ***Direct impacts:***   * There are no technological or alternative projects that could fulfil the goals of the proposed upgrade.   ***Indirect impacts:***   * None expected.   ***Cumulative impacts:***   * None expected. |
| **Alternative A2 (if any)** |
| ***Direct impacts:***  ***Indirect impacts:***  ***Cumulative impacts:*** |

|  |
| --- |
| **No-go alternative (compulsory)** |
| ***Direct impacts:***   * No new impacts would result from the No-go alternative. * The local people would still have no all-weather road access.   ***Indirect impacts:***   * None expected.   ***Cumulative impacts:***   * None expected. |

Indicate mitigation measures to manage the potential impacts listed above:

|  |  |
| --- | --- |
| **Alternative A1:** | **Alternative A2:** |
| * There are no technological or alternative projects that could fulfil the goals of the proposed bridge construction   which forms part of the overall road upgrade. | | |

* 1. **Impacts that may result fRom the CONSTRUCTION phase**
  2. **Site alternatives**

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

|  |
| --- |
| **Alternative S1 (preferred site)** |
| ***Direct impacts:***   * Construction will have the greatest impact on the environment of all the phases of the proposed upgrade. * The greatest environmental impact or disturbance is in the selection of a new road bridge site; however as this road bridge site is geological stable and access roads are on an existing track the site impact is minimal. Generally, roads are constructed along the path of least disturbance, often following century old natural game trails or cattle paths, which inevitably is the route easiest to travel between two points. This is the case for the route in question.   **Water Quality**   * The construction of the proposed road bridge will not impact on the water quality in the area.   **Oil and Diesel Spillages**   * Heavy vehicles will inevitably leave behind traces of the lubricants and fuel used to operate them. These include diesel, oil, hydraulic fluid and other similar products. These products pollute the soil and cause plants that are directly contaminated by these fuels spillages to die. Large quantity (over 200 litres) diesel spills could affect the quality of the ground water if no remedial action is taken. * The presence of diesel and oil on the site are dangers that could threaten the water quality and require management as set out in the EMPr. The most efficient method of a bridge construction where large quantities of earth need to be moved and compacted is with heavy machinery and other mechanised techniques. This method is substantially faster than any manual technique.   **Dust and Sediment**   * Vehicles travelling at high speed on unpaved road surfaces tend to disperse any surface particles and debris. This dust can also be sucked into the turbulent wake created behind the moving vehicles and affect people living in homesteads near the road. The dust will be carried some distance away from the road, varying according to wind speed, direction and other climatic factors, such as temperature and precipitation moisture levels. * During construction, the deck of the approach road can begin to create dust as a result of the crushing of the substrate. This causes nuisance related impacts (such as damage and discoloration of washing, dust on food, the body and hair) that are potentially significant, especially where houses are located close to the route. The dust will carry some distance away from the road, varying according to wind speed, direction and other climatic factors, such as temperature and precipitation moisture levels. * Dust deposits can be blown into the air by wind of by vehicle movement, especially when wind speed prevents the dust from settling close to the source. Dust pick-up by wind is usually only significant at wind speeds above 5 metres per second (10 knots), but vehicle re-entrainment can occur under any conditions. * Sediment is the result of dust that enters the environment in rainfall runoff. This is difficult to prevent, as it is a natural occurrence that has been exacerbated by human activity and the construction of the bridge.   **Traffic and Access**   * Slow moving construction vehicles can cause traffic congestion on public roads. * Drivers of these vehicles must be very careful to avoid any collisions with children walking to school along these roads, especially during the peak period when the children are on their way to and back from school.   **Soil and Geology**   * Spillage of fuel or oil leaks from construction vehicles may result in the contamination of soil and groundwater. * Care should be taken not to contaminate topsoil in cases of negligent fuel storage and cement mixing. * Stormwater runoff may cause erosion of topsoil and the siltation of watercourses, if not controlled.   **Air Quality**   * Short-term negative impacts on air quality will occur from heavy equipment, dust and exhaust fumes during the construction phase.   ***Indirect impacts:***   * Indirect impacts include disturbance of the soil along the river bank possible river flow restrictions.   **Construction Traffic**   * The delivery of construction equipment, premixed cement and materials poses safety problems for other road users and pedestrians if not strictly controlled. * Property and roads can be damaged if construction vehicles take routes that are not adequate for heavy vehicle usage.   **Access and Security**   * Only construction staff must be permitted on site as uncontrolled entry by guests may lead to safety concerns.   **Change in Landuse**   * The change of land use from a river bed is significant from an undeveloped, untransformed area characterised by natural vegetation and river bed to a cement bridge infrastructure.   **Spread of Alien Plants**   * The removal of indigenous vegetation and increase in human traffic would create additional opportunities for the spread of invasive alien plants.   ***Cumulative impacts:***  **Water Resource Issues**   * Water used for the construction and activities such as batching cement may lead to extra demands on the finite water resources of the particular water source used by the contractor.   **Water, Soils and Air**   * The pollution of water, soils and air resulting from separate small events / sources could have additive effects on the ecosystem.   **Waste Management**   * The creation of extra waste may result in extra impacts on the registered landfill site used by the contractor. |
| **Alternative S2 (if any)** |
| ***Direct impacts:***   * Alternative alignments would require additional disturbance to the environment with very little potential improvement in environmental performance. A new site would need to be cut by means of a bulldozer or grader, removing all vegetation in the path of the proposed approach road and bridge site. * Any new route may also pass through lands and properties that would require extensive consultation with the landowners to negotiate a route that does not impact adversely on the local community.   ***Indirect impacts:***   * The alteration of the road route and bridge site can result in the community, for whom the road was   intended, being bypassed.   * The route would need to be realigned or even extended beyond the current termination point. This could render the proposed road bridge becoming too expensive to be covered by the available budget.   ***Cumulative impacts:***   * None expected. |
| **No-go alternative (compulsory)** |
| ***Direct impacts:***   * The No- Go Alternative will result in continued lack of access to the affected community, as well as additional damage to the environment as a result of unchecked erosion. The lack of access would hamper future development and service delivery of the area.   ***Indirect impacts:***   * None expected.   ***Cumulative impacts:***   * None expected. |

Indicate mitigation measures to manage the potential impacts listed above:

|  |  |
| --- | --- |
| **Alternative S1** | **Alternative S2** |
| This aspect is addressed more fully in the EMPr appended to this Basic Assessment Report. Construction Traffic and Access  * Construction routes must be clearly defined and construction vehicles must not deviate from the route. * Planning of site delivery hours must be scheduled to avoid weekends, evenings insofar as possible. * Servicing of vehicles must be done off-site. * A site speed limit of 20km/h must not be exceeded at the actual construction site location.  Construction  * Only designated areas must be used for the storage of construction materials, soil stockpiles, machinery and other equipment. * Specific areas must be designated for cement batching plants. Sufficient drainage for these plants must be in place to ensure that the soil does not become contaminated. * The manual mixing of cement must be conducted on a plastic lining to prevent contamination of the soil. * The construction site must be kept clear of litter at all times. * Food preparation areas should not be allowed on the site. Food should be prepared off-site and brought to the construction workers at meal times. * No servicing or washing of vehicles may occur on site, especially in the river. * All spillages, including any at the construction camp need to be cleaned up immediately and disposed of at a hazardous waste site. * A spill kit will be kept at the site for use in accidental spillages. At least one person will be trained in the use of the spill kit. * Staff and labourers requiring accommodation must be housed in the construction camp at least 100m from the river and bridge site.  Soil and Geology **i) Fuel Storage**   * Diesel and oil will be stored in minimum quantities at the site. * Fuel and material must be stored away from any soil stockpiles. * Topsoil and subsoil must be protected from contamination. * Contaminated soil must be contained and disposed of offsite at a licensed landfill site.  ii) Earthworks  * All earthworks to the approaches of the bridge must be controlled and managed. * Any excavations must be clearly marked and demarcated.    Groundwater  * Water usage, land use, waste management and any onsite sanitation associated with the proposed new development must be designed and managed so as not to impact, insofar as possible negatively on the groundwater resources on the site. * Facilities for the collection and disposal of waste on the site should occur in sealed surfaces, which would ensure that there is no waste or contaminated water from the waste entering the soil profile. * Infrastructure associated with sewage (such as underground piping) should be adequately designed to ensure that there is no underground leakages which may pollute the soil and groundwater.  Hydrological and Stormwater  * The site must be managed in order to prevent the pollution of drains, downstream watercourses or groundwater, due to suspended solids, silt or chemical pollutants. * The contractor must promote a water saving mind set with the construction workers in order to ensure less water wastage. * New stormwater constructions must be developed strictly according to the engineer’s specifications in order to ensure efficiency and the undermining of the bridge approaches.   **Air Quality (Dust Control)**   * The retention of vegetation where possible will reduce dust levels. Maintaining some form of vegetation close to the road and bridge is also a feasible method of reducing pickup dust. This includes grass and shrubs, but should not include trees that funnel wind into a particular location and thus intensify the pickup effect and impact of dust downwind. * Wheel washing and damping down of un-surfaced and un-vegetated areas will reduce dust levels. Water saving must be taken into account. * Excavations and other clearing activities must only be done during agreed working times and permitting weather conditions to avoid drifting sand, dust into unwanted areas and stormwater damage.  Noise  * As construction workers operate in a very noisy environment, it must be insured that their working conditions, safety gear and clothing, comply with the requirements of the Occupational Health and Safety Act. Where necessary ear protection and goggles should be worn. * Ambient noise levels should not exceed within reason the acceptable standards for a road construction site. * Noisy operations should be combined so that that they occur concurrently at the same time when possible. * Loitering from construction workers will not be tolerated. Noise from workers in general must be strictly controlled at work and after hours at the construction camp.   **Flora**  **i) Existing Vegetation**   * The existing indigenous vegetation must be retained where possible. The infrastructure associated with the proposed bridge construction must be designed so that as many trees are retained as possible. * Materials should not be delivered to the site prematurely, which could result in additional areas being cleared or affected. * No vegetation must be used for firewood. * The construction site office, camp, workshop and laydown areas must be clearly demarcated and no encroachment must occur beyond the demarcated areas. * All impacted areas must be rehabilitated with indigenous plants.   **ii) Exotic Vegetation**   * All alien vegetation should be removed from the site and replaced with indigenous flora. * Alien vegetation on the site will need to be controlled in terms of Government notice R1048. * The Contractor should be responsible for implementing a programme of weed control (particularly in areas where the soil has been disturbed); and grassing any remaining stockpiles to prevent weed invasion.   **iii) Herbicides**   * The application of herbicides shall be according to the set specifications and under supervision of a person qualified to handle these chemicals. The possibility of leaching into the surrounding environment shall be properly investigated and only environmentally friendly herbicides shall be used.   **Fauna**   * The capture, hunting or snaring of any animal on site, should be strictly prohibited. Anyone found engaged in this activity should be disciplined and / or prosecuted. * The Contractor as well as his construction workers must be sympathetic towards any fauna present on site. * Any problem animals noted in the vicinity of the site must be reported to the ECO if they become a problem. * Water flow in the river must not be diverted or restricted at any time as this will prevent aquatic biota and other micro-organisms from moving freely up and down the stream.   **Employment**   * Training of labour must benefit individuals beyond completion of the project. * Labour to be sourced from the local community where possible. * The Contractor must ensure that all staff working on the proposed project must be in possession of a South African Identity Document or valid work permit.   **Waste Management**   * Care should be taken not to dump waste indiscriminately as this could have a negative impact on the ecosystem and may lead to injury to humans and animals.   **i) Construction Waste (Rubble)**   * Rubble must not be dumped on site but must be placed in a skip or designated demarcated area for regular removal. * All rubble must be taken off site for recycling or donated to the local community. Unwanted rubble must be disposed of at an approved registered site.  ii) Litter Management  * Refuse bins must be placed at strategic positions to ensure that litter does not accumulate within the construction camp. These should be kept covered (and made animal / dog proof) and arrangements made for them to be collected regularly from the site. * A housekeeping team should be appointed to regularly maintain the litter situation on the site. * Waste disposal will need to take place in terms of Section 20 of the Environmental Conservation Act. * Littering by the employees of the Contractor shall not be allowed under any circumstances. The ECO shall monitor the neatness of the construction site. * No litter may be burnt on site.   **Construction Equipment Safety**   * All equipment used for the construction, including drills, TLB’s and other plant must be in good working order with up to date maintenance records. * This equipment must not be washed on site.   **Security**   * The construction camp and storage site should be fenced for the duration of the construction phase. * Labour should be transported to and from the site to discourage loitering in adjacent areas and the possible increase in crime or disturbance.   **Sanitation**   * Chemical toilets must be made available for the staff working at the site and staying at the construction camp. A minimum of one toilet per fifteen staff members must be provided. * “Grey Water” from the showers at the construction camp must be piped into a French drain during the construction phase.   **Social Environment**   * All contact with affected parties shall be courteous at all times. The rights of the affected parties shall be respected at all times.   **Visual Impact**   * The site shall be kept visually and aesthetically pleasing, especially in and around the construction camp. The ECO shall regularly inspect the site to ensure that it is neat and clean. | | |

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

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

|  |
| --- |
| **Alternative A1 (preferred alternative)** |
| ***Direct impacts:***   * There will be no technological or activity related alternatives as a result of the construction phase of the project.   ***Indirect impacts:***   * None expected.   ***Cumulative impacts:***   * None expected. |

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| **Alternative A2** |
| ***Direct impacts:***  ***Indirect impacts:***  ***Cumulative impacts:*** |
| **No-go alternative (compulsory)** |
| ***Direct impacts:***   * No new impacts would result from the No-go alternative. However the positive socio-economic activities in terms of temporary job creation would not occur and the local people would still have no all-weather access to their houses in the region.   ***Indirect impacts:***   * None expected.   ***Cumulative impacts:***   * None expected. |

Indicate mitigation measures to manage the potential impacts listed above:

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| --- | --- |
| **Alternative A1:** | **Alternative A2:** |
| * Any temporary detours of road routes to or around the bridge construction site need to be delineated before construction commences. * The location of this temporary road route must be selected based on causing as little disturbance to the indigenous vegetation as possible. * The temporary road must be maintained for the duration of the bridge construction phase. * Construction in general must be completed as soon as possible. * All construction must be sensitive to the natural vegetation. * Appropriate erosion and stormwater management must be installed along the temporary road route and around the construction site. * Vegetation disturbance must be kept to a minimum throughout the construction phase. * Rehabilitation must take place directly after construction and only indigenous species from the local area must be planted. | | |

* 1. **Impacts that may result fRom the operational phase**

1. **Site alternatives**

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

|  |
| --- |
| **Alternative S1 (preferred alternative)** |
| ***Direct impacts:***  **Visual Impacts**   * Waste and an increase of litter from irresponsible road and bridge users will become an unsightly visual impact.   **Waste**   * A lack of management with regards to solid waste collection along the road and bridge could lead to surface water contamination, and may attract problem animals, such as stray dogs, to the site, which become a potential hazard to vehicles using this road.   **Noise**   * Noise from vehicles using the road and bridge may disturb receptors living near the road.   **Energy**   * During the operational phase of the proposed project, more vehicles are likely to use the improved road (bridge) thus increasing the demand on the country’s oil reserves.   **Socio-Economic**   * The bridge on the road would increase the potential for residents to improve their business potential both locally and give them better access to outside markets.   **Mud and Dust**   * Vehicles travelling on unpaved surfaces tend to disperse any surface particles and other debris. Particles are lifted and dropped from rolling wheels and the road and bridge surface is exposed to strong air currents due to turbulent shear between the wheels and the surface. Dust particles are also sucked into the turbulent wake created behind the moving vehicles. The loads carried by vehicles are a potential source of dust, either through wind entrainment or spillages. Mud and dust carryout from unpaved surfaces is another potential problem. * After use, the deck of the road can begin to create dust as a result of the crushing of the substrate. This causes nuisance related impacts (such as damage and discoloration of washing, dust on food, the body and hair) that are potentially significant, especially where houses are located close to the route. The dust will carry some distance away from the road and bridge, varying according to wind speed, direction and other climatic factors, such as temperature and precipitation moisture levels. * Dust deposits can be blown into the air by wind of by vehicle movement, especially when wind speed prevents the dust from settling close to the source. Dust pick-up by wind is usually only significant at wind speeds above 5 metres per second (10 knots), but vehicle re-entrainment can occur under any conditions.   **Erosion**   * Sediment is the result of dust that enters the environment in rainfall runoff. This is difficult to prevent, as it is a natural occurrence that has been exacerbated by human activity. The best method of control is to prevent the build-up of sediment, as removal of sediment from the runoff water requires that the water be allowed to stand and the sediment particles settle, or that water be allowed to pass through a filter such as a wetland. This is an expensive and land intensive option that requires significant inputs and expense.   ***Indirect impacts:***  **Stormwater**   * Hardened cement surfaces, as opposed to undeveloped areas of natural vegetation, will lead to an increase in runoff, which in turn may potentially lead to increased soil erosion in the region.   **Knowledge and Skills Transfer**   * Skills training provided by the Contractor to people employed from the local communities in the area during the construction of the bridge could be used to start a potential business of some sort. This would be associated with a positive impact.   ***Cumulative impacts:***  **Change in Landuse**   * The portion of the property used for the project would increase the overall road and bridge footprint of the country that has been transformed from indigenous vegetation and potential grazing land.   **Traffic**   * Traffic accessing the area will increase the traffic volumes on the local roads and increase the maintenance requirements by the DoT.   **Service Provision**   * In the event of the road bridge being constructed, the authorities will be pressurised into providing electricity, water, telephone services, better policing of the area, emergency facilities and other services. This in turn will cause further cumulative impacts on the capacity of this service provider’s infrastructure to provide these services. |
| **Alternative S2 (if any)** |
| ***Direct impacts:***  **Dust**   * The dust generated by the existing track will remain an impact but any new route will generate even more dust. This will be aggravated by the lack of capacity to manage the dust created by the existing track. This would be a long-term problem and cannot be mitigated without substantial expenditure, which is not available.   **Erosion**   * Water runoff from the existing road and bridge will exacerbate the already serious erosion found along the current track. Management of this runoff would require expenditure that is not available. Access to the site would also be difficult due to the poor condition of the road and crossing structures.   ***Indirect impacts:***  ***Cumulative impacts:*** |
| **No-go alternative (compulsory)** |
| ***Direct impacts:***   * No new impacts would result from the No-go alternative. * The area would remain without an all-weather bridge and road. * No negative effects are foreseen for the no-go option. * The positive impacts related to the access of locally produced agricultural produce being sold (transported) at the market in the bigger nearby towns, will not be realised.   ***Indirect impacts:***   * No additional access roads or road maintenance will be required.   ***Cumulative impacts:***   * No extra pressures on the municipal services and resources will be likely to occur. * There will also not be any cumulative impacts placed on the physical infrastructure (road and bridge) that would result from added prospective people moving back into the rural areas to build homesteads. |

Indicate mitigation measures to manage the potential impacts listed above:

|  |  |
| --- | --- |
| **Alternative S1** | **Alternative S2** |
| General MaintenanceThe maintenance of the road structures and road surface is important to ensure the safety of all users. The bridge must be well maintained and the approach road decks compacted and sealed as well as possible. At sensitive points along the route, especially those where homes are close to the road, vehicle speeds must be kept to acceptable levels.Traffic and Access  * Regular maintenance of the road and bridge must take place and adequate signage to indicate routes and directions to places of interest and importance must be implemented.  Soils and Geology  * Correct drainage of the road should be ensured with regular maintenance teams cleaning out and repairing all culverts and pipes, clearing of blocked bridge abutments and any other infrastructure. * Ensure that vegetation protection over the soil in landscaped areas is maintained during the operating phase to avoid erosion. Maintaining some form of vegetation close to the road is also a feasible method of reducing dust from vehicles drifting towards homesteads.  Groundwater and Surface Water Pollution  * Stormwater runoff from the road towards the bridge should be carefully managed to ensure that excessive deposits of silt do not occur. * Any bridge drains and pipes should be cleared of all litter and other possible pollutants, as well as maintained and repaired where necessary.  Waste Management  * Solid waste alongside the road and at the bridge should be collected on a regularly basis by the DoT.  Alien Plant Control An alien plant removal programme should be implemented by DoT to regularly control the encroachment of alien invasive species. | | |

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

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

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| **Alternative A1 (preferred alternative)** |
| ***Direct impacts:***   * Ongoing maintenance of the road and bridge. * Erosion control must be properly monitored.   ***Indirect impacts:***   * None   ***Cumulative impacts:***   * Any erosion occurring may result in increased sedimentation of the catchments and rivers. |
| **Alternative A2** |
| ***Direct impacts:***  ***Indirect impacts:***  ***Cumulative impacts:*** |
| **No-go alternative (compulsory)** |
| ***Direct impacts:***   * No new impacts would result from the No-go alternative. * The local people would still have no all-weather access road in the region.   ***Indirect impacts:***  ***Cumulative impacts:*** |

Indicate mitigation measures to manage the potential impacts listed above:

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| --- | --- |
| **Alternative A1** | **Alternative A2** |
| * The access road and infrastructure must be regularly checked and maintained when required. * The road, especially bridge sites must be checked for signs of erosion and corrective action must be taken if necessary. | |

* 1. **Impacts that may result from the decomissioning or closure phase**

1. **Site alternatives**

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

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| --- |
| **Alternative S1 (preferred alternative)** |
| ***Direct impacts:***   * The principal activity associated with the decommissioning of the road or bridge will be the significant adverse impact of the local community, not having access to their residences, agricultural lands and future development in the area.   **Infrastructure**   * All permanent structures must be removed from the site. Removals should be phased so that rehabilitation can begin and soil surfaces are not exposed for too long. All rubble must be removed to a licensed waste disposal facility.   **Bridge and Road**   * The road and bridge site must be rehabilitated once the decommissioning phase is complete. Ripping and seeding using only indigenous vegetation should be implemented to rehabilitate decommissioned roads. * All issues identified in the construction traffic and access impact table should be of relevance during the decommissioning phase.   **Noise Pollution**   * The demolition of cement infrastructure at the bridge could create significant noise impacts for nearby receptors. * Noise-related mitigation measures for the construction phase of the development apply to the decommissioning phase.   **Soil Pollution**   * Infrastructure removal must be phased in order to reduce soil exposure and the risk of erosion. Rehabilitation should begin as soon as the building rubble is removed to ensure that soil is stabilised as soon as possible. * Any fuel required on site must be stored in a bunded area with walls high enough to contain 110% of the total volume of the hazardous material on site. Care must be taken not to contaminate soils on site. * A full rehabilitation plan needs to be compiled in order for the soils to be adequately rehabilitated to their original state.   **Solid Waste Pollution**   * Skips must be placed on site during the decommissioning phase to accommodate rubble and other waste. As with the construction and operating phases, separation and recycling of waste must be made a priority. * All waste must be removed to a registered landfill site.   **Air Pollution**   * Dust created during the demolition of any cement infrastructure could potentially adversely affect nearby housing. This potential issue must be managed through the damping down of exposed areas. * The rehabilitation of the site must be made a priority in order to avoid dust becoming an issue in the surrounding areas.   **Fauna & Flora**   * Care must be taken during the decommissioning phase to take into account and not disturb any flora that may have re-inhabited the area since the inception of the road and bridge. * No fauna must be harmed through the process.     **Flora**   * The process should be carried out as quickly as possible to ensure that the disturbance of flora is kept to a minimum. * Indigenous vegetation must be utilised for the rehabilitation of the site. Vegetation similar to that of the surrounding areas should be used. * A full rehabilitation plan is recommended in this regard to ensure that the site is returned to its original state. * Any alien species must be removed immediately during the rehabilitation process.   **Social Impacts**   * Anyone employed to work on this road must be given sufficient notification of the closure of the road in order for him or her to search for alternative employment. All employees must be compensated accordingly. * Construction workers involved in the decommissioning phase must be briefed on the dangers of the area.   **Visual Impact**   * All evidence of the road and bridge must be removed so that all possible visible impacts are removed. * The rehabilitation of the area should aim to return the footprint to as natural a state as possible to keep the area in line with the visual character and sense of place in the area.   ***Indirect impacts:***   * The loss of access would force the community to open an alternative route to the area, resulting in environmental disturbance that is uncontrolled and unplanned, with no mitigating measures in place to reduce the impacts associated with such access.   ***Cumulative impacts:***   * This will also negatively affect all business enterprises in the nearby rural towns that rely on people from the outlying regions for their support and ultimately their financial well-being. |
| **Alternative S2** |
| ***Direct impacts:***   * No alternatives are environmentally or financially feasible, but in the event of the primary route not being used, the closure of any alternative would have the same impacts as that of the primary route.   ***Indirect impacts:***  ***Cumulative impacts:*** |

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| **No-go alternative (compulsory)** |
| ***Direct impacts:***   * The No-Go Alternative would mean that there is nothing to decommission. * The people in the area will no longer have an all-weather road and bridge.   ***Indirect impacts:***   * People requiring access will be forced to make alternative arrangements to access this area at great expense and / or difficulty. * Those who cannot afford these expenses will ultimately not provide services or conduct business with the people from this region to the detriment of both parties.   ***Cumulative impacts:***   * People will not be able to achieve their full potential, limiting their possible take home wages and this will adversely affect their spending power. This in turn will affect the local business enterprises, which in turn will not be able to reach their full business potential, possibly causing them to relocate to another town or city. |

Indicate mitigation measures to manage the potential impacts listed above:

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| **Alternative S1** | **Alternative S2** |
| * Construction of an alternative access road or bridge prior to decommissioning the existing road would be the only way to minimize the disruption of access to the community area. | | |

* + 1. **Process, technology, layout or other alternatives**

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

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| **Alternative A1 (preferred alternative)** |
| ***Direct impacts:***   * If the road and bridge is not properly removed and rehabilitated it could cause a number of erosion related problems, possible flooding of homesteads near the road and damage to crop lands. Besides the erosion related problems to the community, it may also cause long-term visual impacts.   ***Indirect impacts:***   * The associated erosion problems may lead to decreased production from agricultural fields, a decrease in available grazing for domestic stock and lead to villages becoming isolated islands surrounded by dongas.   ***Cumulative impacts:***   * The possible erosion and stormwater runoff could negatively impact on the local fauna and flora. |
| **Alternative A2** |
| ***Direct impacts:***  ***Indirect impacts:***  ***Cumulative impacts:*** |
| **No-go alternative (compulsory)** |
| ***Direct impacts:***   * The people in the area will no longer have an all-weather road with a bridge in the area.   ***Indirect impacts:***   * People requiring access will be forced to make alternative arrangements to access this area at great expense and / or difficulty. * Those who cannot afford these expenses will ultimately not provide services or conduct business with the people from this region to the detriment of both parties.   ***Cumulative impacts:***   * People will not be able to achieve their full potential, limiting their possible take home wages and this will adversely affect their spending power. This in turn will affect the local business enterprises, which in turn will not be able to reach their full business potential, possibly causing them to relocate to another town or city. |

Indicate mitigation measures to manage the potential impacts listed above:

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| --- | --- |
| **Alternative A1** | **Alternative A2** |
| * Only decommission the road and bridge if it is no longer needed or an alternative road has been constructed to replace the original road. | |

* 1. **Proposed MONITORING and auditing**

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

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| **Alternative S1 (preferred site)** | **Alternative S2** |
| * The Contractor must sign that he / she has read and understands the EMPr. * The Environmental Control Officer (ECO) is responsible for the implementation of the EMPr during the construction phase and liaison between the Applicant and the Contractor. The following tasks fall within his / her responsibilities:  1. Be aware of the findings and conclusions of the Environmental Impact Assessment and the conditions stated within the Authorisation (RoD). 2. Be familiar with the recommendations and mitigation measures of the EMPr. 3. Conduct monthly audits of the construction site according to the EMPr and Environmental Authorisation. 4. Educate the construction team about the management measures of the EMPr and Environmental Authorisation. 5. Regular liaison with the construction team and the project leader / engineer. 6. Responsible for keeping records of compliance as well as records of all environmental incidents and complaints register. 7. Recommend corrective action for any non-compliance issues as well as good compliance with the EMPr. 8. The contact numbers for the Contractor and the ECO shall be made available on-site to affected parties / complainants. This will ensure open channels of communication and prompt response to queries and claims.  * A monitoring programme will be implemented for the duration of the construction phase of the project. This programme will include:   a.) Two weekly audits during the first month where after monthly audits will be conducted by the ECO, which are according to the EMPr and conditions of the Environmental Authorisation. These audits can be conducted randomly and do not require prior arrangement with the project manager.  b.) Compilation of an audit report with a rating of compliance with the EMPr. This report will be submitted to the relevant authorities, the KZN Department of Agriculture and Environmental Affairs (DAEA&RD).  c.) Proper and continuous liaison between the Applicant, the Contractor and other stakeholders must take place to ensure all parties are properly informed at all times. | | |

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| **Alternative A1 (preferred alternative)** | **Alternative A2** |
| * See the appended EMPr | | |

1. **Environmental impact statement**

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

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| **Alternative S1 (preferred site)** |
| **ASSESSMENT OF THE PREFERRED SITE**  The current site determination was made by the following facts:  **Location**   * The route and site location has been selected as it already exists and is the most moderate available route in terms of gradients and with no excessively long, steep slopes. * The majority of the homesteads and developments in the area have taken place due to the existence of this track and therefore the upgrade should follow the existing route.   **Land**   * The request to upgrade the road (and build a bridge) originated from within the community and their support structures, the Tribal Authority and the RRTF. The Tribal Authority, who has granted consent for proposed road to be constructed, administrates the land. * By following the existing track for the majority of the distance, little to no land will be lost for agricultural crops or grazing for domestic stock. * No land needs to be expropriated and minimal (if any) compensation paid out to the homeowners affected by the realignment of the road approaches to the proposed bridge, as they were the people who requested the road upgrade. This makes the project financially viable.   **Government Support**   * The proposed bridge enjoys the support of all government structures, from the provincial level down to the Local Municipalities.     **Road Access**   * The proposed road with the bridge will connect to other roads already in service and maintained by the DoT. These roads and bridges are constructed according to the Department of Transport safety standards and traffic requirements, thus making motoring much safer for the road users. * Local roads also provide access from district or main roads and infrastructure such as schools, clinics, community facilities and settlements that have previously been isolated from each other and from rural towns.   **Engineering Requirements**   * + The route that has been selected is the most moderate available site in terms of gradients, therefore minimising the potential erosion from runoff.   + The route is not technically difficult and no restrictions exist due to major steepness or any other factors related to the existing site.   **Socio-Economic**   * + Many of the direct, indirect and accumulative impacts already discussed in this report will have a positive impact of significance on the local community.   + The community will also benefit which is a positive impact of significance.   **ENVIRONMENTAL IMPACT STATEMENT**  **Negative Potential Impacts**  The primary negative potential impacts associated with the proposed development in the construction phase are related to the generation of noise on sensitive receptors, creation of visual impacts, disturbance of the soils and stormwater erosion impacts that may materialise as a result of the construction activities.  The construction phase will result in some disturbance, which will be unavoidable due to the presence of vehicles and the disturbance of the soil in the area. However, the disturbance will be of short duration and the operational phase will have limited environmental impacts.  A number of cumulative negative impacts have been identified in the operational phase of the proposed development, for example the generation of more traffic on the roads.  **The Positive Impacts**  The primary positive impacts relate to the generation of a number of jobs during construction. The construction phase will be associated with positive socio-economic impacts in terms of job creation benefiting the local community employed as construction workers during this phase.  By upgrading of the road to a Type 7b Local Road standard for the improvement of the transportation efficiency of both goods, agricultural produce and people in the area will be feasible during the operational phase. This will also provide access to the area for bulk service providers to extend their infrastructure network to provide treated piped water, telephones and electricity to these regions.  This will also help to improve other service providers (e.g. police, education, health, social services, etc.) efficiency and reliability to service the area.  A number of mitigation measures to reduce or improve these impacts have been identified and are presented in the tables above.  The existing site will not suffer any adverse environmental impacts or change in the existing land use. Prior to the construction of the bridge and service road, the track was in a poor state of repair and the upgrading of the track to a type 7b Local Road represents the best possible course of action to ensure that the area does not deteriorate further. Therefore the proposed development is supported from an environmental perspective, as the overall benefit to the environment will be significant compared to what exists at present. |

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| **Alternative S2** |
| * Finding alternative routes would result in the existing impacts remaining and additional impacts being imposed on a new community and receiving environment. * An increase in the size and extent of the deck for the bridge approach road will require more material and will result in greater volumes of runoff water. No additional environmental or social benefits would derive from this alternative. * Keeping a narrow deck but surfacing it with asphalt / bitumen would provide an almost maintenance-free road but would involve excessively high financial costs. This option is unlikely to be preferable, as the traffic loads on the road and bridge are very low and the specification would not be justified in this rural context. |
| **Alternative A1 (preferred alternative)** |
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| **Alternative A2** |
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| **No-go alternative (compulsory)** |
| * The people in the region will not have an all-weather bridge (road) in the area and this continued lack of access for the community will adversely affect the local residents’ quality of life. State and private sector service delivery will also continue to be hampered. * The existing river crossing will continue to deteriorate and the erosion will become even more serve. Access will become further hampered and new tracks will be established through presently vegetated areas, creating runoff channels, which will increase the extent of the area lost to erosion. * This ultimately will increase the ecological pressures and sustain the levels of poverty already experienced in the region. |

SECTION F. Recommendation of EAP

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| --- | --- | --- |
| Is the information contained in this report and the documentation attached hereto in the view of the EAPr sufficient to make a decision in respect of this report? | YES  X | NO |
| If “NO”, please contact the KZN Department of Agriculture, Environmental Affairs & Rural Development regarding the further requirements for your report. |  |  |

If “YES”, please attach the draft EMPr as Appendix F to this report and list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

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| --- |
| The specific conditions to be included in the authorization that may be granted by the competent authority are:   * All mitigation measures and factors as listed in the BAR must be considered. * The Environmental Management Programme (EMPr) must be strictly adhered to and implemented during the construction phase of the project. |

Section G: Appendixes

The following appendixes must be attached as appropriate:

Appendix A: Maps and Site plan(s)

General Location Map

Topographical Map

Orthophoto

Appendix B: Site Photographs

Appendix C: Facility Illustration(s)

Appendix F: Environmental Management Programme (EMPr)

1. “Alternative A..” refer to activity, process, technology or other alternatives. [↑](#footnote-ref-1)
2. “Alternative A..” refer to activity, process, technology or other alternatives. [↑](#footnote-ref-2)
3. “Alternative A..” refer to activity, process, technology or other alternatives. [↑](#footnote-ref-3)